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 *Alena Miro*
PO Box 4324, Houston, TX 77210	Telephone No. *575-628-6802*
Facility Name *Pipeline ROW, 30137 Gathering Lateral*	Facility Type: *Gas Gathering Pipeline*

Surface Owner *State of New Mexico*	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
O	*13*	*19S*	*28E*	*97*	*South*	*562*	*West*	*Eddy*

Latitude: *N 32.65386* **Longitude:** *W -104.12857*

NATURE OF RELEASE

Type of Release *Natural Gas, Pipeline Liquids*	Volume of Release: *1,257 MCF, 8.5 BBL Liquids (updated)*	Volume Recovered: *N/A*
Source of Release *Pipeline Leak.*	Date and Hour of Occurrence *04/29/2015 @ 10:05 MDT*	Date and Hour of Discovery *04/29/2015 @ 10:05 MDT*
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? *Mike Bratcher – NMOCD District 2*	
By Whom? *Osman De Leon*	Date and Hour *04/29/2015 @ 12:43 MDT*	
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 pumper passing by. Pipeline segment was clamped and blown down, and leaking portion was repaired following standard One-Call.

Describe Area Affected and Cleanup Action Taken.*

Liquid spill occurred within pipeline ROW. Clean-up activities were carried out in accordance with Enterprise's General release Notification, Response and Remediation Plan (dated March 9, 2015). Operations personnel originally estimated approximately 2 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 was approximately 8.5 bbl pipeline liquids. NMOCD Reference 2RP-3191.

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: Ashley Maxwell
Title: *Director, Field Environmental*	Approval Date: 4/18/2023 Expiration Date:
E-mail Address: *jefields@eprod.com*	Conditions of Approval: Attached ☐
Date: 5-9-19 Phone: *713-381-6684*	

* Attach Additional Sheets If Necessary

CORRECTIVE ACTION REPORT

Property:

30137 Pipeline Releases
SW¼ SE ¼, S13 T19S R28E
Eddy County, New Mexico
ECIRTS: 25049, 25811, 26242, 26497

NMOCD RP#s: 2RP-2846 (30137 #3 Release), 2RP-3191 (30137 #4 Release), 2RP-3044 (30137 #5 Release), 2RP-3193 (30137 #6 Release)

July 2016
Apex Project No. 725010112096

Prepared for:

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

Prepared by:

Karolanne Toby
Project Manager

Liz Scaggs, P.G.
Division Manager

TABLE OF CONTENTS

LIST OF APPENDICES

CORRECTIVE ACTION REPORT

30137 Pipeline Releases
SW¼ SE ¼, S13 T19S R28E
Eddy County, New Mexico
ECIRTS: 25049, 25811, 26242, 26497
Apex Project No. 725010112096

NMOCD RP#s: 2RP-2846 (30137 #3 Release), 2RP-3191 (30137 #4 Release), 2RP-3044 (30137 #5 Release), 2RP-3100 (30137 #6 Release)

1.0 INTRODUCTION

1.1 Site Description & Background

The 30137 #3, #4, #5 and #6 Pipeline Releases (30137 releases) are located within the Enterprise Field Services, LLC (Enterprise) 30137 natural gas gathering pipeline right-of-way (ROW) in the southwest (SW) ¼ of the southeast (SE) ¼ of Section 13 in Township 19 South and Range 28 East in rural Eddy County, New Mexico (32.65386N, 104.12857W), referred to hereinafter as the "Site". The Site is surrounded by native vegetation rangeland periodically interrupted with oil and gas production and gathering facilities. The subsurface consists of fine sandy loam over mixed alluvium and /or eolian sands.

On February 15, 2015 a leak (30137 #3) was detected on the 30137 natural gas gathering pipeline (30137 pipeline) by a pipeline technician. Subsequent to the initial response activities, a second leak (30137 #4) was detected on the 30137 pipeline on April 30, 2015. Immediate response action was taken based on the Enterprise *General Release Notification, Response and Remediation Plan (dated March 2015)*. On June 8, 2015, a third leak (30137 #5) was detected on the 30137 pipeline. During the completion of remediation activities to address the third leak on the 30137 pipeline, a fourth leak (30137 #6) was detected in the same approximate area as the third release. The four (4) releases on the 30137 pipeline were repaired and remediation efforts were completed subsequent to Enterprise Operations combining the excavation efforts for each individual release. All four (4) of the 30137 pipeline releases listed above occurred within a 200-foot segment along the 30137 pipeline. The RP numbers assigned by the NMOCD to the 30137 #3, #4, #5 and #6 releases are 2RP-2846, 2RP-3191, 2RP-3044 and 2RP-3100, respectively.

Due to the close proximity of each leak on the 30137 pipeline, Enterprise submitted a notification to the New Mexico Oil Conservation Division (NMOCD) of Enterprise's intent to combine the excavation efforts for each release (30137 #3, #4, #5 and #6) into one large excavation in order to effectively complete remediation efforts and to replace the 200-foot segment of pipeline on which all the releases occurred. NMOCD approved Enterprise's plan to address the combined remediation efforts and to combine the releases into a single report subsequent to completion of remediation activities.

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 the on-Site soils to below the NMOCD *Recommended Remediation Action Levels (RRALs)* using the New Mexico Energy, Minerals and Natural Resources Division (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 ft.	20	10
	50 to 99 ft.	10	
	>100 ft.	0	
Wellhead Protection Area <1,000 ft. from a water source, or; <200 ft. from private domestic water source.	Yes	20	0
	No	0	
Distance to Surface Water Body	<200 ft.	20	0
	200 to 1,000 ft.	10	
	>1,000 ft.	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 (ft.).
- No water source wells (municipal/community wells) were identified within 1,000 ft. of the Site. No private domestic water sources were identified within 200 ft. of the Site.
- The distance to the nearest surface water body is greater than 1,000 ft.

Based on a Total Ranking Score of "10", cleanup goals for soils remaining in place at the Site 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 combined total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO); and
- 500 mg/Kg for chloride.

3.0 SITE CHRONOLOGY

Apex has reviewed the available documentation from previously conducted subsurface investigation and corrective action activities completed at the Site.

The following is a chronology of Site assessment, investigation and corrective action activities previously conducted at the Site. Each release

February 15, 2015	A release was discovered along the Enterprise 30137 pipeline within the pipeline ROW. Enterprise initially estimated the release as approximately three (3) barrels (bbls) of natural gas pipeline liquid. This release is referred to hereinafter as the 30137 #3 release.

February 24, 2015	An initial C-141 was submitted by Enterprise to the NMOCD due to the gas volume associated with the 30137 #3 release. The initial liquid spill volume was estimated to be approximately three (3) bbls of natural gas pipeline liquid. The RP # 2RP-2846 was assigned by the NMOCD to the 30137 #3 release.
February 25, 2015	Enterprise Operations initiated excavation activities at the 30137 #3 release site and removed impacted soil from below and surrounding the release point on the pipeline. Apex collected five (5) confirmation soil samples (N-Wall, S-Wall, E-Wall, W-Wall, and RP) from each sidewall and floor of the 30137 #3 excavation and two (2) confirmation soil samples [CS-1(2015) and CS-2(2015)] from an area of hydrocarbon staining identified to the southeast of the excavation. In addition, Apex collected one (1) composite soil sample (SP) from the stockpiled material staged next to the excavation. Based on laboratory analytical results from the initial soil samples, additional excavation was required.
April 29, 2015	A new release was discovered on the 30137 pipeline approximately 170 ft. to the east of the 30137 #3 release. Enterprise initially estimated the release as approximately two (2) bbls of natural gas pipeline liquids. This release is referred to hereinafter as the 30137 #4 release. The RP # 2RP-3191 was assigned by the NMOCD to the 30137 #4 release.
May 18, 2015	An initial C-141 was submitted by Enterprise to the NMOCD due to the gas volume associated with the 30137 #4 release. The initial liquid spill volume was estimated to be approximately two (2) bbls of natural gas pipeline liquid.
June 8, 2015	A new release was discovered on the 30137 pipeline approximately 105 ft. to the east of the 30137 #3 release. Enterprise initially estimated the release as approximately three (3) bbls of natural gas pipeline liquid. This release is referred to hereinafter as the 30137 #5 release.
June 10, 2015	An initial C-141 was submitted by Enterprise to the NMOCD due to the gas volume associated with the 30137 #5 release. The initial liquid spill volume was estimated to be approximately three (3) bbls of natural gas pipeline liquid. The RP # 2RP-3044 was assigned by the NMOCD to the 30137 #5 release.
June 15 to June 16, 2015	Enterprise Operations conducted excavation activities at the 30137 #4 and 30137 #5 release sites. Apex returned to the Site to conduct additional field activities. Apex did not collect additional samples from the 30137 #3 release due to elevated field readings collected from a photoionization detector (PID) and a salinity meter. Apex collected five (5) confirmation soil samples (N-Wall, S-Wall, E-Wall, W-Wall and RP) from the excavation in the vicinity of the 30137 #4 release and five (5) confirmation soil samples (N-Wall, S-Wall, E-Wall, W-Wall and RP) from the excavation in the vicinity of the 30137 #5 release. In addition, Apex collected three (3) composite soil samples (STP-2, STP and STP) from the stockpiled material staged on-Site and two (2) background soil samples (BKG-1 and BKG-2) from areas within the 30137 pipeline ROW, approximately 150 feet (ft.) to the east and west of the excavated areas on-Site. Based on laboratory analytical results, additional excavation was required in the vicinity of the 30137 #5 release.

July 2, 2015	A new release was discovered on the 30137 pipeline in the same approximate location as the 30137 #5 release. Enterprise initially estimated the release to be approximately three (3) bbls of natural gas pipeline liquid. This release is referred to hereinafter as the 30137 #6 release.
July 7, 2015	An initial C-141 was submitted by Enterprise to the NMOCD due to the gas volume associated with the 30137 #6 release. The initial liquid spill volume was estimated to be approximately three (3) bbls of natural gas pipeline liquid. The RP # 2RP-3100 was assigned by the NMOCD to the 30137 #6 release.
August 2015	Enterprise submits revised C-141 forms with updated liquid spill volumes for the 30137 #3, #4 and #5 releases subsequent to the receipt of field and soil sampling data associated with the initial response actions for each release. The revised liquid spill estimates are ten (10) bbls, eight and a half (8.5) bbls and nine (9) bbls, respectively. Due to the close proximity of each leak on the 30137 pipeline, Enterprise submitted a notification to the NMOCD of Enterprise's intent to combine the excavation efforts for each release (30137 #3, #4, #5 and #6) into one large excavation in order to effectively complete remediation efforts and to replace the 200-foot segment of pipeline on which all the releases occurred. NMOCD approves Enterprise's plan to address the combined remediation efforts and combining the releases into a single report subsequent to completion of remediation activities.
January 14, 2016	Apex arrived on-Site to collect confirmation soil samples from the combined excavation for the 30137 #3, #4, #5 and #6 releases subsequent to Enterprise Operations completing excavation activities and replacing the 200-foot segment of pipeline. Apex collected 14 confirmation soil samples (CS-1(2016), CS-2(2016) and CS-3 through CS-14) from the sidewalls and floor of the combined excavation for the 30137 pipeline releases. In addition, Apex collected three (3) composite soil samples (SP-1 through SP-3) from the soil stockpiles staged next to the excavation.
March 14, 2016	Based on laboratory analytical results, additional excavation was required. Apex returned to the Site and collected four (4) confirmation soil samples [CS-1(2015) (RE), CS-2(2015) (RE), S-Wall (RE) and R.P.(RE)] from areas within the excavation and from the previously identified area of hydrocarbon staining to the southeast of the former 30137 #3 excavation.
March through April, 2016	Based on laboratory analytical results, no further remediation activities were required. The excavation was backfilled utilizing the final stockpiled soils (SP-1 through SP-6) as fill material and the area was contoured to approximate original surface grade.

4.0 RESPONSE ACTIONS

4.1 Soil Excavation Activities

On February 25, 2015, Enterprise Operations and Willbros Construction, LLC (Willbros) initiated response actions in the vicinity of the 30137 #3 release. It was at this time that Enterprise estimated the initial spill volume for the 30137 #3 release as three (3) bbls of natural gas pipeline liquid. Enterprise isolated the leaking portion of the 30137 pipeline and the pipeline section was blown down to carry out repair activities. Impacted soil was removed from the vicinity of the release point and collected into a stockpile on-Site. The former 30137 #3 excavation dimensions measured approximately 25 ft. (ft.) long by 15 ft. wide with an approximate depth of ten (10) ft. below ground surface (bgs). The area of hydrocarbon staining identified to the southeast of the 30137 #3 excavation measured approximately 50 ft. long by 15 ft. wide with an approximate depth of two (2) ft. bgs.

On April 29, 2015, Enterprise Operations and Willbros returned to the Site to initiate response actions at in the vicinity of the 30137 #4 release. It was at this time that Enterprise estimated the initial spill volume for the 30137 #4 release as two (2) bbls of natural gas pipeline liquid. The leak was subsequently identified and repaired. Impacted soil was removed from the affected areas surrounding the release point on the 30137 pipeline associated with the 30137 #4 release and collected into a stockpile on-Site. The former 30137 #4 excavation dimensions measured approximately 25 ft. long by 15 ft. wide with an approximate depth of eight (8) ft. bgs.

On June 8, 2016, Enterprise Operations and Willbros returned to the Site to initiate response actions in the vicinity of the 30137 #5 release. It was at this time that Enterprise estimated the initial spill volume for the 30137 #5 release as three (3) bbls of natural gas pipeline liquid. The leak was subsequently identified and repaired. Impacted soil was removed from the affected areas surrounding the release point on the 30137 pipeline associated with the 30137 #5 release and collected into a stockpile on-Site. The former 30137 #5 excavation dimensions measured approximately 35 ft. long by 15 ft. wide with an approximate depth of ten (10) ft. bgs.

On July 2, 2015, Enterprise Operations returned to the Site to initiate response actions in the vicinity of the 30137 #6 release, which occurred in the same approximate location on the 30137 pipeline as the 30137 #5 release. It was at this time that Enterprise estimated the liquid spill volume for the 30137 #6 release as approximately three (3) bbls of natural gas pipeline liquid.

During August, 2015, Enterprise submitted to the NMOCD revised C-141 forms with updated liquid spill volumes for the 30137 #3, #4 and #5 releases. Subsequent to the initial remediation activities conducted at the Site, the 30137 #3, #4 and #5 release volumes were updated and revised to be ten (10) bbls, eight and a half (8.5) bbls and nine (9) bbls, respectively.

Between August, 2015 and January, 2016, Enterprise Operations and NMR Pipeline, LLC (NMR) returned to the Site to complete remediation activities and to replace the 200-foot segment of the 30137 pipeline on which the 30137 #3, #4, #5 and #6 releases occurred. Due to the close proximity of each leak on the 30137 pipeline, the excavation efforts for the 30137 #3, #4, #5 and #6 releases were combined into a single excavation subsequent to Enterprise notification to the NMOCD.

The final excavation dimensions measured approximately 200 ft. long by 15 ft. wide, with an approximate depth ranging from approximately eight (8) ft. to 14 ft. bgs. Figure 3 - Site Map, provided in Appendix A, indicates the previous extent of the former 30137 #3, #4 and #5 excavation limits in relation to the final combined 30137 releases excavation.

Backfill of the final combined 30137 #3, #4, #5 and #6 excavation was completed during March 2016. The soil stockpiles generated from the individual 30137 #3, #4, #5 and #6 releases were blended into the soils generated during the combined excavation effort.

During the initiation of the combined excavation effort, the initial soil stockpiles from the individual 30137 #3, #4, #5 and #6 releases were moved to different areas around the excavation on-Site to allow heavy equipment safe access around the combined excavation. This allowed the initial affected soil stockpiles from the individual 30137 #3, #4, #5 and #6 releases to aerate during the combined excavation process. It was also during this time that a substantial amount of soil was removed from the excavation and added to the pre-existing stockpiles, which allowed for potential COC concentrations remaining in the previous soil stockpiles to become diluted.

Based on laboratory analytical results, the final stockpiled material (SP-1 through SP-6) generated from combined excavation activities was reused as fill material in the excavation and the area was contoured to approximate original surface grade.

4.2 Soil Sampling Program

On February 25, 2015, Apex collected five (5) confirmation soil samples (N-Wall, S-Wall, E-Wall, W-Wall, and RP) from each sidewall and floor of the 30137 #3 release excavation and two (2) confirmation soil samples [CS-1(2015) and CS-2(2015)] from the area of hydrocarbon staining identified to the southeast of the 30137 #3 release excavation. In addition, Apex collected one (1) composite soil sample (SP) from the stockpiled material staged next to the 30137 #3 release excavation.

On June 15 and 16, 2015, Apex returned to the Site and collected five (5) confirmation soil samples (N-Wall, S-Wall, E-Wall, W-Wall and RP) from the excavation in the vicinity of the 30137 #4 release and five (5) confirmation soil samples (N-Wall, S-Wall, E-Wall, W-Wall and RP) from the excavation in the vicinity of the 30137 #5 release. In addition, Apex collected three (3) composite soil samples from the stockpiled soils removed from the 30137 #3 excavation (STP-2), from the stockpiled soils removed from the 30137 #4 excavation (STP) and from the stockpiled soils removed from the 30137 #5 excavation (STP). Apex also collected two (2) background soil samples (BKG-1 and BKG-2) from areas within the 30137 pipeline ROW approximately 150 ft. to the east and west of the excavated areas on-Site.

On January 14, 2016, Apex arrived on-Site to collect confirmation soil samples from the combined excavation for the 30137 releases. The confirmation soil samples were collected subsequent to Enterprise Operations completing excavation activities and replacing the 200-foot segment of pipeline. Apex collected 14 confirmation soil samples [CS-1(2016), CS-2(2016) and CS-3 through CS-14] from the sidewalls and floor of the combined excavation. Confirmation soil sample CS-1(2016) was collected in the vicinity of confirmation soil sample W-Wall (30137 #3) subsequent to over-excavation activities. The confirmation soil sample CS-3 was collected to the east of confirmation soil sample E-Wall (30137 #3) along the excavation floor, subsequent to the complete removal of soil that comprised the boundary of the E-Wall sample location. Confirmation soil sample CS-9 was collected from the same location as confirmation soil sample RP (30137 #5) subsequent to over-excavation activities. In addition, Apex collected three (3) composite soil samples (SP-1 through SP-3) from the final soil stockpiles staged next to the final combined excavation.

Based on previous laboratory analytical results, additional excavation was required in the vicinity of the former location of the 30137 #3 release. Apex returned to the Site and collected four (4) confirmation soil samples [CS-1(2015)(RE), CS-2(2015)(RE), S-Wall(RE) and R.P.(RE)] from areas within the former 30137 #3 excavation boundaries and in the vicinity of the previously identified area of hydrocarbon staining. In addition, Apex collected three (3) composite soil samples (SP-4 through SP-6) from the final soil stockpiles staged next to the excavation.

Soil samples were collected and delivered under chain of custody control to Trace Analysis Laboratory and Xenco Laboratories in Midland, Texas for analysis of BTEX utilizing EPA SW-846 Method #8021B, TPH GRO and DRO utilizing EPA SW-846 Method #8015 and chloride utilizing EPA Method SM 4500-Cl B and/or EPA Method 300.

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

Figure 2 is a Site Vicinity Map that indicates the approximate location of the background soil samples in relation to the Site. Figure 3 is a Site Map that indicates the approximate confirmation soil sample and composite stockpile soil sample locations in relation to the former individual 30137 releases excavation boundaries and the final combined 30137 releases excavation and pertinent land features (Appendix A).

5.0 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.

5.1 Confirmation Soil Samples

Apex compared the benzene, BTEX, TPH GRO/DRO and chloride concentrations associated with the final confirmation soil samples collected from the previous limits of excavation for the individual 30137 #3, #4 and #5 releases and the final combined excavation for the 30137 #3, #4, #5 and #6 releases to the OCD RRALs for sites having a total ranking score of “10”.

The laboratory analyses of the final confirmation soil samples CS-1(2015)(RE), CS-2(2015)(RE), CS-1 (2016), CS-2(2016), CS-3, CS-4, N-Wall, S-Wall(RE), R.P.(RE), CS-11, N-Wall, CS-12, CS-13, CS-14, S-Wall, RP, E-Wall and CS-5 through CS-10, collected from both the previous limits of excavation for the individual 30137 #3, #4 and #5 releases and the final combined excavation at the Site, indicate benzene concentrations ranging from below the laboratory reporting limit of 0.000990 mg/Kg to 4.08 mg/Kg, which are below the OCD RRAL limits of 10 mg/Kg for a Site ranking of “10”.

The laboratory analyses of the final confirmation soil samples CS-1(2015)(RE), CS-2(2015)(RE), CS-1(2016), CS-2(2016), CS-3, CS-4, N-Wall, S-Wall(RE), R.P.(RE), CS-11, N-Wall, CS-12, CS-13, CS-14, S-Wall, RP, E-Wall and CS-5 through CS-10, collected from both the previous limits of excavation for the individual 30137 #3, #4, and #5 releases and the final combined excavation at the Site, indicate total BTEX concentrations ranging from below the laboratory reporting limit of 0.000990 mg/Kg to 0.507 mg/Kg, which are below the OCD RRAL limits of 50 mg/Kg for a Site ranking of “10”.

The laboratory analyses of the final confirmation soil samples CS-1(2015)(RE), CS-2(2015)(RE), CS-1(2016), CS-2(2016), CS-3, CS-4, N-Wall, S-Wall(RE), R.P.(RE), CS-11, N-Wall, CS-12, CS-13, CS-14, S-Wall, RP, E-Wall and CS-5 through CS-10, collected from both the previous limits of excavation for the individual 30137 #3, #4, and #5 releases and the final combined excavation at the Site, indicate combined TPH GRO/DRO concentrations ranging from below the laboratory reporting limit of15.0 mg/Kg to 449 mg/kg, which are below the OCD RRAL limits of 1,000 mg/Kg for a Site ranking of “10”.

The laboratory analyses of the final confirmation soil samples CS-1(2015)(RE), CS-2(2015)(RE), CS-1(2016), CS-2(2016), CS-3, CS-4, N-Wall, S-Wall(RE), R.P.(RE), CS-11, N-Wall, CS-12, CS-13, CS-14, S-Wall, RP, E-Wall and CS-5 through CS-10, collected from both the previous limits of excavation for the

individual 30137 #3, #4, and #5 releases and the final combined excavation at the Site, indicate chloride concentrations ranging from below the laboratory reporting limit of 20.0 mg/Kg to 403 mg/Kg, which are below the OCD RRAL limits of 500 mg/Kg for a Site ranking of "10".

5.2 Stockpile Soil Samples

Apex compared the benzene, BTEX, TPH GRO/DRO and chloride concentrations associated with the final composite soil samples (SP-1 through SP-6) collected from the stockpiled soils generated from excavation activities to the OCD RRALs for sites having a total ranking score of "10".

The laboratory analyses of the final composite soil samples (SP-1 though SP-6) indicate benzene concentrations below the laboratory reporting limits, ranging from 0.000996 mg/Kg to 0.0299 mg/Kg, which are below the OCD RRAL limits of 10 mg/Kg for a Site ranking of "10". The laboratory analyses of the final composite soil samples (SP-1 though SP-6) indicate total BTEX concentrations ranging from below the laboratory reporting limit of 0.000996 mg/Kg to 19.2 mg/Kg, which are below the OCD RRAL limits of 50 mg/Kg for a Site ranking of "10".

The final composite soil samples (SP-1 though SP-6), indicate combined TPH GRO/DRO concentrations ranging from below the laboratory reporting limit of 15.0 mg/Kg to 829 mg/kg, which are below the OCD RRAL limits of 1,000 mg/Kg for a Site ranking of "10".

The final composite soil samples (SP-1 though SP-6), indicate chloride concentrations ranging from 37.0 mg/Kg to 364 mg/Kg, which are below the OCD RRAL limits of 500 mg/Kg for a Site ranking of "10".

Based on the laboratory analytical results, the final soil stockpiles (SP-1 though SP-6) indicated benzene, total BTEX, combined TPH GRO/DRO and chloride concentrations below the applicable regulatory standards, and were suitable to be reused as fill material in the excavation subsequent to the completion of remediation activities.

The laboratory analytical results for the soil samples collected from the Site are provided in Table 1 in Appendix C.

6.0 FINDINGS AND RECOMMENDATIONS

The 30137 releases are located within the Enterprise 30137 natural gas gathering pipeline ROW in the SW ¼ of the southeast SE ¼ of Section 13 in Township 19 South and Range 28 East in rural Eddy County, New Mexico. The Site is surrounded by native vegetation rangeland periodically interrupted with oil and gas production and gathering facilities. The subsurface consists of fine sandy loam over mixed alluvium and /or eolian sands.

On February 15, 2015 a leak (30137 #3) was detected on the 30137 natural gas gathering pipeline (30137 pipeline) by a pipeline technician. Subsequent to the initial response activities, a second leak (30137 #4) was detected on the 30137 pipeline on April 30, 2015. Immediate response action was taken based on the Enterprise *General Release Notification, Response and Remediation Plan (dated March 2015)*. On June 8, 2015, a third leak (30137 #5) was detected on the 30137 pipeline. During the completion of remediation activities to address the third leak on the 30137 pipeline, a fourth leak (30137 #6) was detected in the same approximate area as the third release. The four (4) releases on the 30137 pipeline were repaired and remediation efforts were completed subsequent to Enterprise Operations combining the excavation efforts for each individual release. All four (4) of the 30137 pipeline releases listed above occurred within a 200-foot segment along the 30137 pipeline. The RP numbers assigned by the NMOCD to the 30137 #3, #4, #5 and #6 releases are 2RP-2846, 2RP-3191, 2RP-3044 and 2RP-3100, respectively.

- The primary objective of the corrective actions completed at the Site was to reduce the concentration of COCs in the on-Site soils to below the New Mexico EMNRD OCD *RRALs* 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 areas impacted by the 30137 #3, #4, #5 and #6 releases of natural gas pipeline liquid starting from each release point on the 30137 pipeline. The final combined excavated area for the 30137 releases measured approximately 200 ft. long by 15 ft. wide, with an approximate depth ranging from approximately eight (8) ft. to 14 ft. bgs. Excavated soils were removed and collected into six (6) stockpiles on-Site (SP-1 through SP-6).

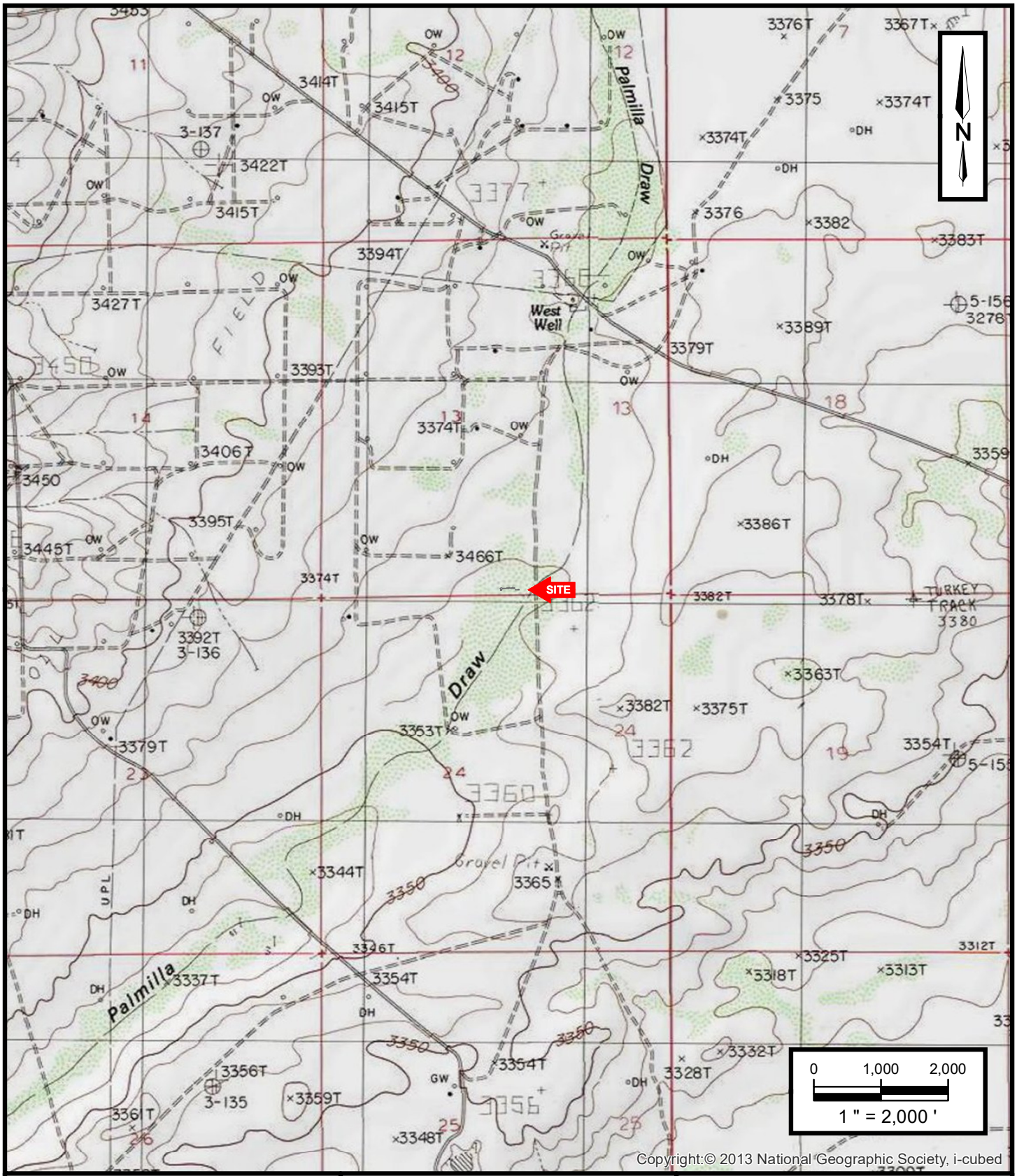
- The final confirmation soil samples CS-1(2015)(RE), CS-2(2015)(RE), CS-1 (2016), CS-2(2016), CS-3, CS-4, N-Wall, S-Wall(RE), R.P.(RE), CS-11, N-Wall, CS-12, CS-13, CS-14, S-Wall, RP, E-Wall and CS-5 through CS-10, collected from both the previous limits of excavation for the individual 30137 #3, #4, #5 and #6 releases and the final combined excavation at the Site, indicate benzene, total BTEX, combined TPH GRO/DRO and chloride concentrations below the applicable OCD RRALs for a Site ranking of "10".

- The six (6) final soil stockpiles on-Site (SP-1 through SP-6) indicated laboratory results below the applicable OCD RRALs for a Site ranking of "10" and were suitable to be reused as fill material in the excavation. The final excavated area was backfilled with the final stockpiled soils and subsequently contoured to approximate original surface grade.

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
30137 Pipeline Releases
Eddy County, New Mexico
30137 #3 - 32.653859 N, 104.130117 W
30137 #4 - 32.653864 N, 104.129549 W
30137 #5/#6 - 32.653862 N, 104.129766 W

Project No. 725010112096

Apex TITAN, Inc.
2351 W. Northwest Highway, Suite 3321
Dallas, Texas 75220
Phone: (214) 350-5469
www.apexcos.com
A Subsidiary of Apex Companies, LLC

FIGURE 1

Topographic Map

Illinois Camp and Illinois Camp NE
New Mexico Quadrangles
1985

P:\Drafting\2016\725010112096\Figure 1.mxd 5/6/2016 NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US Projected Coordinate System

Enterprise Field Services, LLC
30137 Pipeline Releases
Eddy County, New Mexico
30137 #3 - 32.653859 N, 104.130117 W
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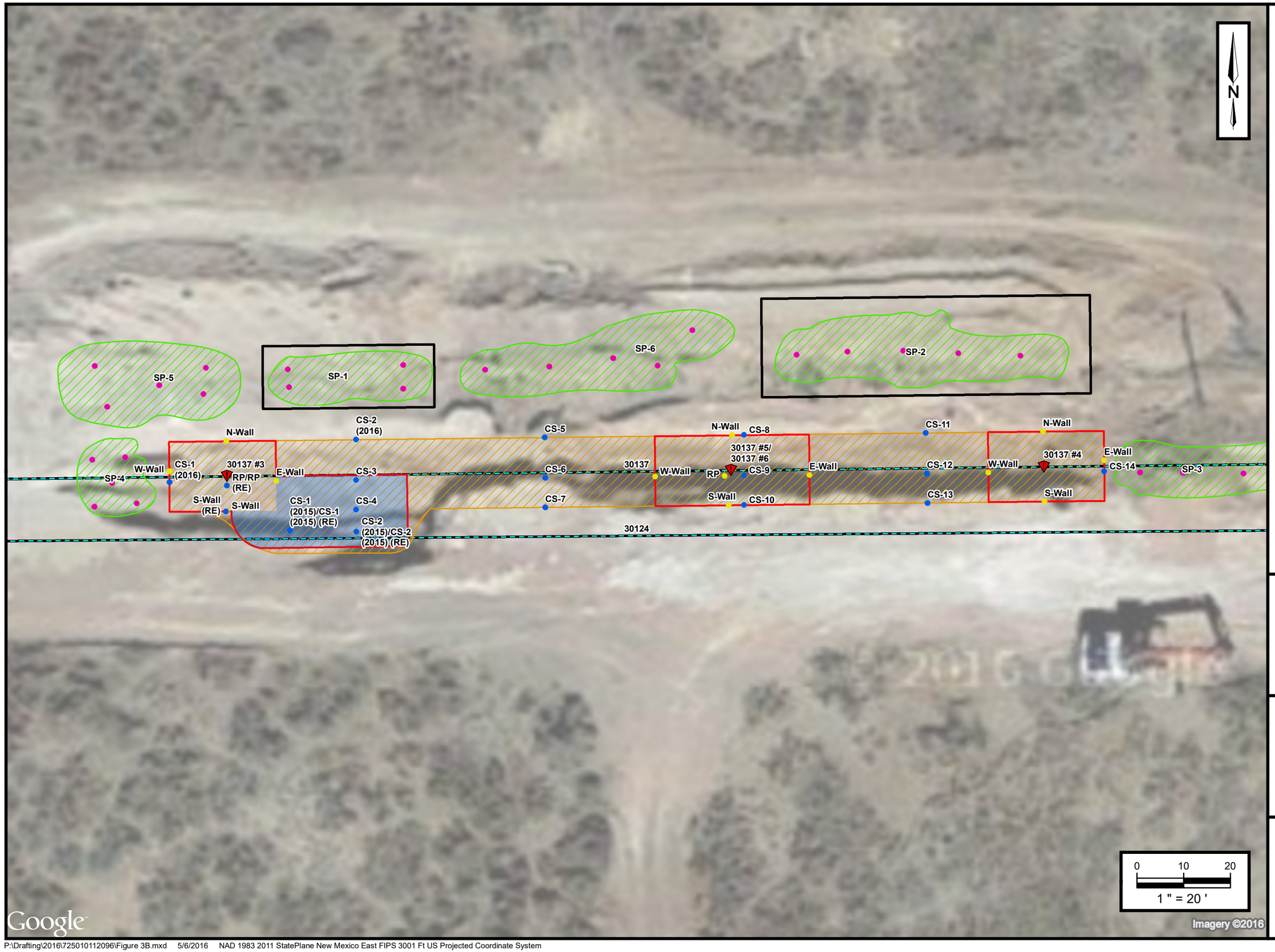
FIGURE 2

Site Vicinity Map

Aerial Photograph March 2016

P:\Drafting\2016\725010112096\Figure 2.mxd 5/6/2016 NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US Projected Coordinate System



LEGEND:

- Release Point
- Final Confirmation Sample Location
- Confirmation Sample Location Prior to Final Combined 30137 Releases Excavation
- Soil Stockpile Composite Sample Location
- Extent of Previous Surface Staining
- Extent of Previous 30137 #3, #4, #5, and #6 Excavations
- Soil Stockpile Location
- Soil Stockpile Liner Location
- Extent of Final Combined Excavation
- Enterprise 30137 Pipeline Location

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30137 Pipeline Releases
Eddy County, New Mexico
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30137 #4 - 32.653864 N, 104.129549 W
30137 #5/#6 - 32.653862 N, 104.129766 W

Project No. 725010112096

FIGURE 3

Site Map

Aerial Photograph March 2016

P:\Drafting\2016\725010112096\Figure 3B.mxd 5/6/2016 NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US Projected Coordinate System

APPENDIX B

Photographic Documentation

View of combined 30137 releases excavation facing southeast.

View of hydrocarbon stain removal in the vicinity of the former 30137 #3 excavation, facing southwest.

View of stockpiled soils after final excavation actiivities, facing northeast.

View of excavation sidewall during final remediation activities, facing east.

View of stockpiled soil during final remediation activities, facing west.

View of excavation during final remediation activities, facing east.

APEX

APPENDIX C

Analytical Tables

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS

30137 Pipeline Releases

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	Total BTEX (mg/Kg)	TPH GRO (mg/Kg)	TPH DRO (mg/Kg)	TPH GRO/DRO (mg/Kg)	Chloride (mg/Kg)
New Mexico Oil Conservation Division (NMOCD) Recommended Remediation Action Levels (RRALs) (Total Ranking Score: 10)											
New Mexico Oil Conservation Division (NMOCD) Recommended Remediation Action Level			10	NE	NE	NE	50	NE	NE	1,000	500
BACKGROUND SOIL SAMPLE ANALYTICAL RESULTS											
BKG-1	6/16/2015	6	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<54.0	**98.0**
BKG-2	6/16/2015	6	<0.0200	<0.0200	**0.0517**	<0.0200	**0.0517**	<4.00	<50.0	<54.0	<20.0
30137 #3 EXCAVATION CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS											
W-Wall	2/25/2015	8	0.0665	0.304	0.0500	0.851	1.27	14.5	<50.0	14.5	3,080
CS-1 (2016)	1/14/2016	6	**0.0142**	**0.0637**	**0.0147**	**0.142**	**0.234**	**24.3**	<14.9	**24.3**	**56.5**
CS-1 (2015)	2/25/2015	2	4.08	25.3[je]	5.54	47.6[je]	82.5	2,420	<50.0	2,420	383
CS-1 (2015) (RE)	3/14/2016	10	<0.00150	<0.00200	<0.00200	<0.0020	<0.00150	<25.0	**34.3**	**34.3**	NS
CS-2 (2015)	2/25/2015	2	1.12	378[je]	82.3	346[je]	918	15,200	320	15,520	3,160
CS-2 (2015) (RE)	3/14/2016	14	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	<24.9	**135**	**135**	**343**
CS-2 (2016)	1/14/2016	6	<0.000990	<0.00198	<0.000990	<0.000990	<0.000990	<15.0	**40.7**	**40.7**	**13.7**
E-Wall	2/25/2015	8	0.0214	0.163	0.746	3.48	4.41	122	61.1	183	1,530
CS-3	1/14/2016	10	<0.000998	<0.00200	<0.000998	<0.000998	<0.000998	<15.0	<15.0	<15.0	**6.74**
CS-4	1/14/2016	6	**0.00150**	<0.00198	<0.000990	**0.505**	**0.507**	**149**	**300**	**449**	**9.42**
N-Wall	2/25/2015	8	**0.0270**	**0.0436**	<0.0200	**0.0334**	**0.104**	<4.00	<50.0	<54.0	**383**
S-Wall	2/25/2015	8	0.0494	0.277	0.352	0.556	1.23	120	62.1	182	11,100
S-Wall (RE)	3/14/2016	8	NS	NS	NS	NS	NS	NS	NS	NS	**254**
RP	2/25/2015	10	0.0461	<0.0200	0.254	0.511	0.811	90.7	292	383	9,000
R.P. (RE)	3/14/2016	13	NS	NS	NS	NS	NS	NS	NS	NS	**403**
30137 #4 EXCAVATION CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS											
CS-11	1/14/2016	6	<0.00100	<0.00200	<0.00100	<0.00100	<0.00100	<15.0	<15.0	<15.0	<2.00
N-Wall	6/15/2015	6	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<54.00	<20.0
W-Wall	6/15/2015	6	<0.0200	0.0221	0.0389	0.0681	0.129	9.34	<50.0	9.34	<20.0
CS-12	1/14/2016	10	<0.00101	<0.00202	<0.00101	<0.00101	<0.00101	<14.9	<14.9	<14.9	**7.29**
CS-13	1/14/2016	6	<0.00101	<0.00202	<0.00101	<0.00101	<0.00101	<15.0	<15.0	<15.0	**2.47**
E-Wall	6/15/2015	6	<0.0200	0.0231	0.0528	0.0585	0.134	8.14	<50.0	8.14	<20.0
CS-14	1/14/2016	6	<0.000992	<0.00198	<0.000992	<0.000992	<0.000992	<15.0	<15.0	<15.0	**5.75**
S-Wall	6/15/2015	6	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<54.0	<20.0
RP	6/15/2015	8	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<54.0	<20.0
30137 #5 EXCAVATION CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS											
CS-5	1/14/2016	6	<0.00990	<0.00198	<0.000990	<0.000990	<0.000990	<15.0	**101**	**101**	<2.00
W-Wall	6/15/2015	6	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<54.00	<20.0
CS-6	1/14/2016	6	<0.00101	<0.00202	<0.00101	<0.00101	<0.00101	<14.9	<14.9	<14.9	<2.00
CS-7	1/14/2016	6	<0.00100	<0.00201	<0.00100	<0.00100	<0.00100	<15.0	<15.0	<15.0	**2.84**
N-Wall	6/15/2015	6	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<54.00	193
CS-8	1/14/2016	6	<0.00100	<0.00200	<0.00100	<0.00100	<0.00100	<15.0	<15.0	<15.0	**5.66**
E-Wall	6/15/2015	6	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<54.00	<20.0
RP	6/15/2015	10	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<54.00	5,630
CS-9	1/14/2016	10	<0.000996	<0.00199	<0.000996	<0.000996	<0.000996	<15.0	<15.0	<15.0	<2.00
S-Wall	6/15/2015	6	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<54.00	<20.0
CS-10	1/14/2016	6	<0.000994	<0.00199	<0.000994	<0.000994	<0.000994	<15.0	<15.0	<15.0	**2.63**
30137 #3 STOCKPILE SOIL SAMPLE ANALYTICAL RESULTS											
SP	2/25/2015	NA	1.88	63.2	30.1	129	224	3,150	571	3,721	1,530
STP-2	6/16/2015	NA	4.22	20.4	7.34	34.0[je]	66.0	1,190[je]	575	1,765	98.0
30137 #4 STOCKPILE SOIL SAMPLE ANALYTICAL RESULTS											
STP	6/15/2015	NA	0.0248	0.777	1.13	1.22	3.15	314	<50.0	314	588
30137 #5 STOCKPILE SOIL SAMPLE ANALYTICAL RESULTS											
STP	6/15/2015	NA	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<54.00	<20.0
FINAL 30137 STOCKPILE SAMPLE SOIL ANALYTICAL RESULTS											
SP-1	1/14/2016	NA	<0.000996	<0.00199	<0.000996	<0.000996	<0.000996	<15.0	<15.0	<15.0	**364**
SP-2	1/14/2016	NA	<0.000996	<0.00199	<0.000996	<0.000996	<0.000996	<15.0	<15.0	<15.0	**141**
SP-3	1/14/2016	NA	<0.00101	<0.00201	<0.00101	<0.00101	<0.00101	<15.0	<15.0	<15.0	**37.0**
SP-4	3/14/2016	NA	<0.0299	**1.95**	**2.77**	**14.5**	**19.2**	**583**	**122**	**705**	**107**
SP-5	3/14/2016	NA	<0.00150	**0.0137**	**0.0174**	**0.126**	**0.157**	**215**	**561**	**829**	**344**
SP-6	3/14/2016	NA	<0.00150	**0.0140**	**0.0193**	**0.233**	**0.266**	**198**	**229**	**455**	**207**

: indicates overexcavated area and/or resample

*Note: Concentrations in **bold** and yellow exceed the applicable OCD Remediation Action Level*

NE: Not Established

NS: Not Sampled

Je: Estimated concentration exceeding calibration range

bgs: below ground surface

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: March 9, 2015

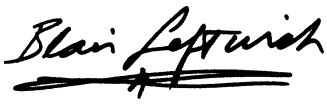
Work Order: 15022625

Project Name: 30137 #3
Project Number: 7250715022.001

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
387688	CS-1	soil	2015-02-25	14:52	2015-02-26
387689	CS-2	soil	2015-02-25	14:54	2015-02-26
387690	N- Wall	soil	2015-02-25	14:58	2015-02-26
387691	E- Wall	soil	2015-02-25	15:02	2015-02-26
387692	W- Wall	soil	2015-02-25	15:04	2015-02-26
387693	S- Wall	soil	2015-02-25	15:06	2015-02-26
387694	RP	soil	2015-02-25	15:08	2015-02-26
387695	SP	soil	2015-02-25	15:15	2015-02-26

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 30137 #3 were received by TraceAnalysis, Inc. on 2015-02-26 and assigned to work order 15022625. Samples for work order 15022625 were received intact at a temperature of 4.1 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	101285	2015-03-03 at 14:50	119761	2015-03-04 at 12:14
Chloride (Titration)	SM 4500-Cl B	101275	2015-03-03 at 12:51	119733	2015-03-03 at 12:53
Chloride (Titration)	SM 4500-Cl B	101283	2015-03-03 at 14:35	119741	2015-03-03 at 14:51
TPH DRO - NEW	S 8015 D	101249	2015-03-02 at 14:10	119724	2015-03-03 at 11:04
TPH GRO	S 8015 D	101285	2015-03-03 at 14:50	119764	2015-03-04 at 12:23
TPH GRO	S 8015 D	101317	2015-03-04 at 14:57	119791	2015-03-05 at 10:28
TPH GRO	S 8015 D	101336	2015-03-05 at 11:54	119849	2015-03-09 at 09:05

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 15022625 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: 387688 - CS-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119761	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**4.08**	mg/Kg	1	0.0200
Toluene	Je	1	**25.3**	mg/Kg	1	0.0200
Ethylbenzene		1	**5.54**	mg/Kg	1	0.0200
Xylene	Je	1	**47.6**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.58	mg/Kg	1	2.00	79	70 - 130
4-Bromofluorobenzene (4-BFB)			6.72	mg/Kg	1	2.00	336	70 - 130

Sample: 387688 - CS-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119733	Date Analyzed:	2015-03-03	Analyzed By:	EM
Prep Batch:	101275	Sample Preparation:	2015-03-03	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs		**383**	mg/Kg	5	4.00

Sample: 387688 - CS-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119724	Date Analyzed:	2015-03-03	Analyzed By:	SC
Prep Batch:	101249	Sample Preparation:	2015-03-02	Prepared By:	SC

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			82.7	mg/Kg	1	100	83	70 - 130

Sample: 387688 - CS-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119791	Date Analyzed:	2015-03-05	Analyzed By:	AK
Prep Batch:	101317	Sample Preparation:	2015-03-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**2420**	mg/Kg	50	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			86.2	mg/Kg	50	100	86	70 - 130
4-Bromofluorobenzene (4-BFB)			107	mg/Kg	50	100	107	70 - 130

Sample: 387689 - CS-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119761	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**112**	mg/Kg	20	0.0200
Toluene	Je	1	**378**	mg/Kg	20	0.0200
Ethylbenzene		1	**82.3**	mg/Kg	20	0.0200
Xylene	Je	1	**346**	mg/Kg	20	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			35.1	mg/Kg	20	40.0	88	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	67.3	mg/Kg	20	40.0	168	70 - 130

Sample: 387689 - CS-2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119733	Date Analyzed:	2015-03-03	Analyzed By:	EM
Prep Batch:	101275	Sample Preparation:	2015-03-03	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs		**3160**	mg/Kg	5	4.00

Sample: 387689 - CS-2

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119724	Date Analyzed:	2015-03-03	Analyzed By:	SC
Prep Batch:	101249	Sample Preparation:	2015-03-02	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**320**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			96.7	mg/Kg	1	100	97	70 - 130

Sample: 387689 - CS-2

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119849	Date Analyzed:	2015-03-09	Analyzed By:	AK
Prep Batch:	101336	Sample Preparation:	2015-03-05	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Qs	1	**15200**	mg/Kg	100	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			185	mg/Kg	100	200	92	70 - 130
4-Bromofluorobenzene (4-BFB)			248	mg/Kg	100	200	124	70 - 130

Report Date: March 9, 2015 Work Order: 15022625 Page Number: 9 of 34
7250715022.001 30137 #3

Sample: 387690 - N- Wall

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 119761 Date Analyzed: 2015-03-04 Analyzed By: AK
Prep Batch: 101285 Sample Preparation: 2015-03-03 Prepared By: AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.0270**	mg/Kg	1	0.0200
Toluene		1	**0.0436**	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene		1	**0.0334**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			2.23	mg/Kg	1	2.00	112	70 - 130

Sample: 387690 - N- Wall

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 119733 Date Analyzed: 2015-03-03 Analyzed By: EM
Prep Batch: 101275 Sample Preparation: 2015-03-03 Prepared By: EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs		**383**	mg/Kg	5	4.00

Sample: 387690 - N- Wall

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 119724 Date Analyzed: 2015-03-03 Analyzed By: SC
Prep Batch: 101249 Sample Preparation: 2015-03-02 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			87.0	mg/Kg	1	100	87	70 - 130

Sample: 387690 - N- Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119764	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	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)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			1.96	mg/Kg	1	2.00	98	70 - 130

Sample: 387691 - E- Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119761	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.0214**	mg/Kg	1	0.0200
Toluene		1	**0.163**	mg/Kg	1	0.0200
Ethylbenzene		1	**0.746**	mg/Kg	1	0.0200
Xylene		1	**3.48**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.14	mg/Kg	1	2.00	107	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	4.44	mg/Kg	1	2.00	222	70 - 130

Sample: 387691 - E- Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119733	Date Analyzed:	2015-03-03	Analyzed By:	EM
Prep Batch:	101275	Sample Preparation:	2015-03-03	Prepared By:	EM

continued . . .

sample 387691 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**1530**	mg/Kg	5	4.00

Sample: 387691 - E- Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119724	Date Analyzed:	2015-03-03	Analyzed By:	SC
Prep Batch:	101249	Sample Preparation:	2015-03-02	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**61.1**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			94.5	mg/Kg	1	100	94	70 - 130

Sample: 387691 - E- Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119764	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**122**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.65	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	5.27	mg/Kg	1	2.00	264	70 - 130

Sample: 387692 - W- Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119761	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.0665**	mg/Kg	1	0.0200
Toluene		1	**0.304**	mg/Kg	1	0.0200
Ethylbenzene		1	**0.0500**	mg/Kg	1	0.0200
Xylene		1	**0.851**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			2.23	mg/Kg	1	2.00	112	70 - 130

Sample: 387692 - W- Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119741	Date Analyzed:	2015-03-03	Analyzed By:	EM
Prep Batch:	101283	Sample Preparation:	2015-03-03	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs		**3080**	mg/Kg	5	4.00

Sample: 387692 - W- Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119724	Date Analyzed:	2015-03-03	Analyzed By:	SC
Prep Batch:	101249	Sample Preparation:	2015-03-02	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			94.1	mg/Kg	1	100	94	70 - 130

Sample: 387692 - W- Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119849	Date Analyzed:	2015-03-09	Analyzed By:	AK
Prep Batch:	101336	Sample Preparation:	2015-03-05	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**14.5**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			2.01	mg/Kg	1	2.00	100	70 - 130

Sample: 387693 - S- Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119761	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.0494**	mg/Kg	1	0.0200
Toluene		1	**0.277**	mg/Kg	1	0.0200
Ethylbenzene		1	**0.352**	mg/Kg	1	0.0200
Xylene		1	**0.556**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.72	mg/Kg	1	2.00	136	70 - 130

Sample: 387693 - S- Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119733	Date Analyzed:	2015-03-03	Analyzed By:	EM
Prep Batch:	101275	Sample Preparation:	2015-03-03	Prepared By:	EM

continued . . .

sample 387693 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**11100**	mg/Kg	5	4.00

Sample: 387693 - S- Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119724	Date Analyzed:	2015-03-03	Analyzed By:	SC
Prep Batch:	101249	Sample Preparation:	2015-03-02	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**62.1**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			91.4	mg/Kg	1	100	91	70 - 130

Sample: 387693 - S- Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119764	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**120**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.36	mg/Kg	1	2.00	168	70 - 130

Sample: 387694 - RP

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119761	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.0461**	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		1	**0.254**	mg/Kg	1	0.0200
Xylene		1	**0.511**	mg/Kg	1	0.0200

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)			2.47	mg/Kg	1	2.00	124	70 - 130

Sample: 387694 - RP

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119733	Date Analyzed:	2015-03-03	Analyzed By:	EM
Prep Batch:	101275	Sample Preparation:	2015-03-03	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs		**9000**	mg/Kg	5	4.00

Sample: 387694 - RP

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119724	Date Analyzed:	2015-03-03	Analyzed By:	SC
Prep Batch:	101249	Sample Preparation:	2015-03-02	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**292**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	70 - 130

Sample: 387694 - RP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119764	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**90.7**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.66	mg/Kg	1	2.00	83	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.24	mg/Kg	1	2.00	162	70 - 130

Sample: 387695 - SP

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	119761	Date Analyzed:	2015-03-04	Analyzed By:	AK
Prep Batch:	101285	Sample Preparation:	2015-03-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**1.88**	mg/Kg	5	0.0200
Toluene		1	**63.2**	mg/Kg	5	0.0200
Ethylbenzene		1	**30.1**	mg/Kg	5	0.0200
Xylene		1	**129**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			7.71	mg/Kg	5	10.0	77	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	23.4	mg/Kg	5	10.0	234	70 - 130

Sample: 387695 - SP

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	119733	Date Analyzed:	2015-03-03	Analyzed By:	EM
Prep Batch:	101275	Sample Preparation:	2015-03-03	Prepared By:	EM

continued . . .

sample 387695 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**1530**	mg/Kg	5	4.00

Sample: 387695 - SP

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	119724	Date Analyzed:	2015-03-03	Analyzed By:	SC
Prep Batch:	101249	Sample Preparation:	2015-03-02	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**571**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	70 - 130

Sample: 387695 - SP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	119791	Date Analyzed:	2015-03-05	Analyzed By:	AK
Prep Batch:	101317	Sample Preparation:	2015-03-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**3150**	mg/Kg	50	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			82.6	mg/Kg	50	100	83	70 - 130
4-Bromofluorobenzene (4-BFB)			115	mg/Kg	50	100	115	70 - 130

Method Blanks

Method Blank (1) QC Batch: 119724

QC Batch:	119724	Date Analyzed:	2015-03-03	Analyzed By:	SC
Prep Batch:	101249	QC Preparation:	2015-03-02	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			91.3	mg/Kg	1	100	91	70 - 130

Method Blank (1) QC Batch: 119733

QC Batch:	119733	Date Analyzed:	2015-03-03	Analyzed By:	EM
Prep Batch:	101275	QC Preparation:	2015-03-03	Prepared By:	EM

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

Method Blank (1) QC Batch: 119741

QC Batch:	119741	Date Analyzed:	2015-03-03	Analyzed By:	EM
Prep Batch:	101283	QC Preparation:	2015-03-03	Prepared By:	EM

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

Method Blank (1) QC Batch: 119761

QC Batch: 119761 Date Analyzed: 2015-03-04 Analyzed By: AK
Prep Batch: 101285 QC Preparation: 2015-03-03 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)			1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	70 - 130

Method Blank (1) QC Batch: 119764

QC Batch: 119764 Date Analyzed: 2015-03-04 Analyzed By: AK
Prep Batch: 101285 QC Preparation: 2015-03-03 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)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 119791

QC Batch: 119791 Date Analyzed: 2015-03-05 Analyzed By: AK
Prep Batch: 101317 QC Preparation: 2015-03-04 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)			1.88	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.82	mg/Kg	1	2.00	91	70 - 130

Method Blank (1) QC Batch: 119849

QC Batch:	119849	Date Analyzed:	2015-03-09	Analyzed By:	AK
Prep Batch:	101336	QC Preparation:	2015-03-05	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)			1.87	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.82	mg/Kg	1	2.00	91	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 119724 Date Analyzed: 2015-03-03 Analyzed By: SC
Prep Batch: 101249 QC Preparation: 2015-03-02 Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	251	mg/Kg	1	250	<7.41	100	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	260	mg/Kg	1	250	<7.41	104	70 - 130	4	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	99.2	mg/Kg	1	100	101	99	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 119733 Date Analyzed: 2015-03-03 Analyzed By: EM
Prep Batch: 101275 QC Preparation: 2015-03-03 Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2680	mg/Kg	5	2500	<19.2	107	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			2580	mg/Kg	5	2500	<19.2	103	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: 119741 Date Analyzed: 2015-03-03 Analyzed By: EM
Prep Batch: 101283 QC Preparation: 2015-03-03 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			2310	mg/Kg	5	2500	<19.2	92	85 - 115	8	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: 119761 Date Analyzed: 2015-03-04 Analyzed By: AK
Prep Batch: 101285 QC Preparation: 2015-03-03 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.09	mg/Kg	1	2.00	<0.00533	104	70 - 130
Toluene		1	2.02	mg/Kg	1	2.00	<0.00645	101	70 - 130
Ethylbenzene		1	2.07	mg/Kg	1	2.00	<0.0116	104	70 - 130
Xylene		1	6.25	mg/Kg	1	6.00	<0.00874	104	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	2.00	mg/Kg	1	2.00	<0.00533	100	70 - 130	4	20
Toluene		1	1.96	mg/Kg	1	2.00	<0.00645	98	70 - 130	3	20
Ethylbenzene		1	1.99	mg/Kg	1	2.00	<0.0116	100	70 - 130	4	20
Xylene		1	6.03	mg/Kg	1	6.00	<0.00874	100	70 - 130	4	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)	1.76	1.78	mg/Kg	1	2.00	88	89	70 - 130
4-Bromofluorobenzene (4-BFB)	2.05	2.08	mg/Kg	1	2.00	102	104	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 119764 Date Analyzed: 2015-03-04 Analyzed By: AK
Prep Batch: 101285 QC Preparation: 2015-03-03 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	20.5	mg/Kg	1	20.0	<2.32	102	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	21.9	mg/Kg	1	20.0	<2.32	110	70 - 130	7	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)	1.95	1.94	mg/Kg	1	2.00	98	97	70 - 130
4-Bromofluorobenzene (4-BFB)	1.89	1.92	mg/Kg	1	2.00	94	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 119791 Date Analyzed: 2015-03-05 Analyzed By: AK
Prep Batch: 101317 QC Preparation: 2015-03-04 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	21.3	mg/Kg	1	20.0	<2.32	106	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	19.4	mg/Kg	1	20.0	<2.32	97	70 - 130	9	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	1.90	mg/Kg	1	2.00	96	95	70 - 130
4-Bromofluorobenzene (4-BFB)	1.92	1.90	mg/Kg	1	2.00	96	95	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 119849 Date Analyzed: 2015-03-09 Analyzed By: AK
Prep Batch: 101336 QC Preparation: 2015-03-05 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	20.6	mg/Kg	1	20.0	<2.32	103	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	21.1	mg/Kg	1	20.0	<2.32	106	70 - 130	2	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)	1.84	1.92	mg/Kg	1	2.00	92	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.87	1.87	mg/Kg	1	2.00	94	94	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 387694

QC Batch: 119724 Date Analyzed: 2015-03-03 Analyzed By: SC
Prep Batch: 101249 QC Preparation: 2015-03-02 Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	512	mg/Kg	1	250	292	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
DRO		1	527	mg/Kg	1	250	292	94	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
n-Tricosane	97.1	101	mg/Kg	1	100	97	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 387688

QC Batch: 119733 Date Analyzed: 2015-03-03 Analyzed By: EM
Prep Batch: 101275 QC Preparation: 2015-03-03 Prepared By: EM

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Qs	Qs		574	mg/Kg	5	2500	383	8	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	Qs	Qs		574	mg/Kg	5	2500	383	8	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: 387692

QC Batch: 119741 Date Analyzed: 2015-03-03 Analyzed By: EM
Prep Batch: 101283 QC Preparation: 2015-03-03 Prepared By: EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Qs Qs		1150	mg/Kg	5	2500	<19.2	46	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	Qs Qs		1250	mg/Kg	5	2500	<19.2	-73	78.9 - 121	8	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: 387690

QC Batch: 119761 Date Analyzed: 2015-03-04 Analyzed By: AK
Prep Batch: 101285 QC Preparation: 2015-03-03 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.63	mg/Kg	1	2.00	0.027	80	70 - 130
Toluene		1	1.68	mg/Kg	1	2.00	0.0436	82	70 - 130
Ethylbenzene		1	1.81	mg/Kg	1	2.00	<0.0116	90	70 - 130
Xylene		1	5.48	mg/Kg	1	6.00	0.0334	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		1	1.48	mg/Kg	1	2.00	0.027	73	70 - 130	10	20
Toluene		1	1.54	mg/Kg	1	2.00	0.0436	75	70 - 130	9	20
Ethylbenzene		1	1.66	mg/Kg	1	2.00	<0.0116	83	70 - 130	9	20
Xylene		1	5.01	mg/Kg	1	6.00	0.0334	83	70 - 130	9	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)	1.77	1.64	mg/Kg	1	2	88	82	70 - 130
4-Bromofluorobenzene (4-BFB)	2.16	2.03	mg/Kg	1	2	108	102	70 - 130

Matrix Spike (MS-1) Spiked Sample: 387690

QC Batch: 119764 Date Analyzed: 2015-03-04 Analyzed By: AK
Prep Batch: 101285 QC Preparation: 2015-03-03 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.7	mg/Kg	1	20.0	<2.32	74	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	15.2	mg/Kg	1	20.0	<2.32	76	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)	1.74	1.67	mg/Kg	1	2	87	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.88	mg/Kg	1	2	97	94	70 - 130

Matrix Spike (MS-1) Spiked Sample: 387700

QC Batch: 119791 Date Analyzed: 2015-03-05 Analyzed By: AK
Prep Batch: 101317 QC Preparation: 2015-03-04 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.6	mg/Kg	1	20.0	<2.32	78	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	16.6	mg/Kg	1	20.0	<2.32	83	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
Trifluorotoluene (TFT)	1.68	1.76	mg/Kg	1	2	84	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.89	1.95	mg/Kg	1	2	94	98	70 - 130

Matrix Spike (MS-1) Spiked Sample: 387705

QC Batch: 119849 Date Analyzed: 2015-03-09 Analyzed By: AK
Prep Batch: 101336 QC Preparation: 2015-03-05 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.2	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	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qs	Qs 1	13.4	mg/Kg	1	20.0	<2.32	67	70 - 130	13	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)	1.81	1.83	mg/Kg	1	2	90	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.96	mg/Kg	1	2	97	98	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 119724 Date Analyzed: 2015-03-03 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	224	90	80 - 120	2015-03-03

Standard (CCV-2)

QC Batch: 119724 Date Analyzed: 2015-03-03 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	218	87	80 - 120	2015-03-03

Standard (ICV-1)

QC Batch: 119733 Date Analyzed: 2015-03-03 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	2015-03-03

Standard (CCV-1)

QC Batch: 119733 Date Analyzed: 2015-03-03 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	2015-03-03

Standard (ICV-1)

QC Batch: 119741 Date Analyzed: 2015-03-03 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	2015-03-03

Standard (CCV-1)

QC Batch: 119741 Date Analyzed: 2015-03-03 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	2015-03-03

Standard (CCV-1)

QC Batch: 119761 Date Analyzed: 2015-03-04 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	0.103	103	80 - 120	2015-03-04
Toluene		1	mg/kg	0.100	0.0995	100	80 - 120	2015-03-04
Ethylbenzene		1	mg/kg	0.100	0.101	101	80 - 120	2015-03-04
Xylene		1	mg/kg	0.300	0.304	101	80 - 120	2015-03-04

Standard (CCV-2)

QC Batch: 119761 Date Analyzed: 2015-03-04 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	0.0987	99	80 - 120	2015-03-04
Toluene		1	mg/kg	0.100	0.0978	98	80 - 120	2015-03-04
Ethylbenzene		1	mg/kg	0.100	0.0987	99	80 - 120	2015-03-04
Xylene		1	mg/kg	0.300	0.297	99	80 - 120	2015-03-04

Standard (CCV-3)

QC Batch: 119761 Date Analyzed: 2015-03-04 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	0.102	102	80 - 120	2015-03-04
Toluene		1	mg/kg	0.100	0.0984	98	80 - 120	2015-03-04
Ethylbenzene		1	mg/kg	0.100	0.101	101	80 - 120	2015-03-04
Xylene		1	mg/kg	0.300	0.302	101	80 - 120	2015-03-04

Standard (CCV-1)

QC Batch: 119764 Date Analyzed: 2015-03-04 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	2015-03-04

Standard (CCV-2)

QC Batch: 119764 Date Analyzed: 2015-03-04 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	1.09	109	80 - 120	2015-03-04

Standard (CCV-3)

QC Batch: 119764 Date Analyzed: 2015-03-04 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	0.967	97	80 - 120	2015-03-04

Standard (CCV-1)

QC Batch: 119791 Date Analyzed: 2015-03-05 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	2015-03-05

Standard (CCV-2)

QC Batch: 119791 Date Analyzed: 2015-03-05 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	1.01	101	80 - 120	2015-03-05

Standard (CCV-1)

QC Batch: 119849 Date Analyzed: 2015-03-09 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	1.05	105	80 - 120	2015-03-09

Standard (CCV-2)

QC Batch: 119849 Date Analyzed: 2015-03-09 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	0.979	98	80 - 120	2015-03-09

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.

VO# 150226 25

CHAIN OF CUSTODY RECORD

APEX

Office Location Midland, TX

Project Manager Kandlanne Toby

Laboratory: Trace Analysis

Address: 5002 Basin

Contact:

Phone:

PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 4.1

1	2	3	4	5

Page ____ of ____

Sampler's Name: Travis Turner

Sampler's Signature:

Proj. No.: 725071502 2.001

Project Name: 30137 #3

No/Type of Containers: 8

ANALYSIS REQUESTED: BTEX 8021B; TPH GRO/DRO; 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	2/25/15	1452		X	CS-1		2'				X		387688
		1454			CS-2								689
		1458			N-wall		8'						690
		1502			E-wall								691
		1504			W-wall								692
		1506			S-wall								693
		1508			RP		10'						694
		1515	X		SP								695

IT 2/26/15

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	2/26/15	1230	Dunlap Trace	2/26/15	1236
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: June 23, 2015

Work Order: 15061712

Project Name: 30137 #3
Project Number: 7250715022.001

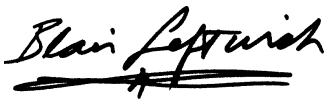
Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
395922	BKG-1	soil	2015-06-16	10:15	2015-06-17
395923	BKG-2	soil	2015-06-16	10:30	2015-06-17
395924	STP-2	soil	2015-06-16	10:30	2015-06-17

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.

This report consists of a total of 22 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



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

Report Contents

Case Narrative

Samples for project 30137 #3 were received by TraceAnalysis, Inc. on 2015-06-17 and assigned to work order 15061712. Samples for work order 15061712 were received intact at a temperature of 2.1 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	103647	2015-06-22 at 15:12	122539	2015-06-23 at 07:18
Chloride (Titration)	SM 4500-Cl B	103564	2015-06-18 at 08:35	122418	2015-06-18 at 09:30
TPH DRO - NEW	S 8015 D	103612	2015-06-19 at 15:26	122545	2015-06-23 at 09:48
TPH GRO	S 8015 D	103647	2015-06-22 at 15:12	122540	2015-06-23 at 07:21

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 15061712 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: 395922 - BKG-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122539	Date Analyzed:	2015-06-23	Analyzed By:	AK
Prep Batch:	103647	Sample Preparation:	2015-06-22	Prepared By:	AK

Parameter	Flag	Cert	Result	RL 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)			2.03	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	70 - 130

Sample: 395922 - BKG-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122418	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs		**98.0**	mg/Kg	5	4.00

Sample: 395922 - BKG-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qr,Qs,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		68.6	mg/Kg	1	50.0	137	70 - 130

Sample: 395922 - BKG-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122540	Date Analyzed:	2015-06-23	Analyzed By:	AK
Prep Batch:	103647	Sample Preparation:	2015-06-22	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.54	mg/Kg	1	2.00	127	70 - 130
4-Bromofluorobenzene (4-BFB)			2.18	mg/Kg	1	2.00	109	70 - 130

Sample: 395923 - BKG-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122539	Date Analyzed:	2015-06-23	Analyzed By:	AK
Prep Batch:	103647	Sample Preparation:	2015-06-22	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		1	**0.0517**	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)			1.95	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			2.05	mg/Kg	1	2.00	102	70 - 130

Sample: 395923 - BKG-2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122418	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

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

Sample: 395923 - BKG-2

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			54.6	mg/Kg	1	50.0	109	70 - 130

Sample: 395923 - BKG-2

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122540	Date Analyzed:	2015-06-23	Analyzed By:	AK
Prep Batch:	103647	Sample Preparation:	2015-06-22	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.47	mg/Kg	1	2.00	124	70 - 130
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	70 - 130

Sample: 395924 - STP-2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122539	Date Analyzed:	2015-06-23	Analyzed By:	AK
Prep Batch:	103647	Sample Preparation:	2015-06-22	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**4.22**	mg/Kg	1	0.0200
Toluene		1	**20.4**	mg/Kg	1	0.0200
Ethylbenzene		1	**7.34**	mg/Kg	1	0.0200
Xylene	Je	1	**34.0**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	6.49	mg/Kg	1	2.00	324	70 - 130

Sample: 395924 - STP-2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122418	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**98.0**	mg/Kg	5	4.00

Sample: 395924 - STP-2

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr,Qs	1	**575**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	81.9	mg/Kg	1	50.0	164	70 - 130

Sample: 395924 - STP-2

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122540	Date Analyzed:	2015-06-23	Analyzed By:	AK
Prep Batch:	103647	Sample Preparation:	2015-06-22	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Je,Qs	1	**1190**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			11.4	mg/Kg	1	10.0	114	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	25.6	mg/Kg	1	10.0	256	70 - 130

Method Blanks

Method Blank (1) QC Batch: 122418

QC Batch: 122418 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

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

Method Blank (1) QC Batch: 122539

QC Batch: 122539 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 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)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Method Blank (1) QC Batch: 122540

QC Batch: 122540 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 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)			2.33	mg/Kg	1	2.00	116	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Method Blank (1) QC Batch: 122545

QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	QC Preparation:	2015-06-19	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			57.1	mg/Kg	1	50.0	114	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 122418 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2350	mg/Kg	5	2500	<19.2	94	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			2350	mg/Kg	5	2500	<19.2	94	85 - 115	0	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: 122539 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.89	mg/Kg	1	2.00	<0.00533	94	70 - 130
Toluene		1	1.80	mg/Kg	1	2.00	<0.00645	90	70 - 130
Ethylbenzene		1	1.73	mg/Kg	1	2.00	<0.0116	86	70 - 130
Xylene		1	5.64	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		1	1.93	mg/Kg	1	2.00	<0.00533	96	70 - 130	2	20
Toluene		1	1.81	mg/Kg	1	2.00	<0.00645	90	70 - 130	1	20
Ethylbenzene		1	1.74	mg/Kg	1	2.00	<0.0116	87	70 - 130	1	20
Xylene		1	5.70	mg/Kg	1	6.00	<0.00874	95	70 - 130	1	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)	1.86	1.76	mg/Kg	1	2.00	93	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.83	1.75	mg/Kg	1	2.00	92	88	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 122540 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.5	mg/Kg	1	20.0	<2.32	78	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	15.3	mg/Kg	1	20.0	<2.32	76	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)	2.34	2.35	mg/Kg	1	2.00	117	118	70 - 130
4-Bromofluorobenzene (4-BFB)	2.09	2.12	mg/Kg	1	2.00	104	106	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC
Prep Batch: 103612 QC Preparation: 2015-06-19 Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	239	mg/Kg	1	250	<7.41	96	70 - 130

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
DRO		1	249	mg/Kg	1	250	<7.41	100	70 - 130	4	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	58.5	61.9	mg/Kg	1	50.0	117	124	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 396009

QC Batch: 122418 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Qs Qs		19700	mg/Kg	5	2500	16600	124	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	Qs Qs		19900	mg/Kg	5	2500	16600	132	78.9 - 121	1	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: 395922

QC Batch: 122539 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.78	mg/Kg	1	2.00	<0.00533	89	70 - 130
Toluene		1	1.72	mg/Kg	1	2.00	<0.00645	86	70 - 130
Ethylbenzene		1	1.70	mg/Kg	1	2.00	<0.0116	85	70 - 130
Xylene		1	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	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.66	mg/Kg	1	2.00	<0.00533	83	70 - 130	7	20
Toluene		1	1.59	mg/Kg	1	2.00	<0.00645	80	70 - 130	8	20
Ethylbenzene		1	1.59	mg/Kg	1	2.00	<0.0116	80	70 - 130	7	20
Xylene		1	5.25	mg/Kg	1	6.00	<0.00874	88	70 - 130	7	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)	1.84	1.89	mg/Kg	1	2	92	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.92	1.96	mg/Kg	1	2	96	98	70 - 130

Matrix Spike (MS-1) Spiked Sample: 395922

QC Batch: 122540 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.8	mg/Kg	1	20.0	<2.32	74	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	Qs Qs	1	13.8	mg/Kg	1	20.0	<2.32	69	70 - 130	7	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)	2.49	2.48	mg/Kg	1	2	124	124	70 - 130
4-Bromofluorobenzene (4-BFB)	2.20	2.21	mg/Kg	1	2	110	110	70 - 130

Matrix Spike (MS-1) Spiked Sample: 395908

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC
Prep Batch: 103612 QC Preparation: 2015-06-19 Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	213	mg/Kg	1	250	<7.41	85	70 - 130

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
DRO	Qr,Qs	Qr,Qs	1 163	mg/Kg	1	250	<7.41	65	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	57.2	59.8	mg/Kg	1	50	114	120	70 - 130

Calibration Standards

Standard (ICV-1)

QC Batch: 122418 Date Analyzed: 2015-06-18 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	2015-06-18

Standard (CCV-1)

QC Batch: 122418 Date Analyzed: 2015-06-18 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	2015-06-18

Standard (CCV-1)

QC Batch: 122539 Date Analyzed: 2015-06-23 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	0.0958	96	80 - 120	2015-06-23
Toluene		1	mg/kg	0.100	0.0891	89	80 - 120	2015-06-23
Ethylbenzene		1	mg/kg	0.100	0.0848	85	80 - 120	2015-06-23
Xylene		1	mg/kg	0.300	0.278	93	80 - 120	2015-06-23

Standard (CCV-2)

QC Batch: 122539 Date Analyzed: 2015-06-23 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	0.0950	95	80 - 120	2015-06-23
Toluene		1	mg/kg	0.100	0.0905	90	80 - 120	2015-06-23
Ethylbenzene		1	mg/kg	0.100	0.0861	86	80 - 120	2015-06-23
Xylene		1	mg/kg	0.300	0.283	94	80 - 120	2015-06-23

Standard (CCV-3)

QC Batch: 122539 Date Analyzed: 2015-06-23 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	0.0924	92	80 - 120	2015-06-23
Toluene		1	mg/kg	0.100	0.0894	89	80 - 120	2015-06-23
Ethylbenzene		1	mg/kg	0.100	0.0856	86	80 - 120	2015-06-23
Xylene		1	mg/kg	0.300	0.279	93	80 - 120	2015-06-23

Standard (CCV-1)

QC Batch: 122540 Date Analyzed: 2015-06-23 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	0.968	97	80 - 120	2015-06-23

Standard (CCV-2)

QC Batch: 122540 Date Analyzed: 2015-06-23 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	0.964	96	80 - 120	2015-06-23

Standard (CCV-2)

QC Batch: 122545 Date Analyzed: 2015-06-23 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	243	97	80 - 120	2015-06-23

Standard (CCV-3)

QC Batch: 122545 Date Analyzed: 2015-06-23 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	249	100	80 - 120	2015-06-23

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

Report Date: June 23, 2015	Work Order: 15061712	Page Number: 22 of 22
7250715022.001	30137 #3	

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

WO #: 1506171 2

CHAIN OF CUSTODY RECORD

APEX

Office Location: Midland TX

Project Manager: Farrianne Todd

Laboratory: Trace Analysis

Address:

Contact:

Phone:

PO/SO #:

Sampler's Name: Travis Turner

Sampler's Signature:

Proj. No.: 725071502.01

Project Name: WB0137#3

No/Type of Containers: 3/4oz

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

Lab use only
Due Date:

Temp. of coolers when received (C°): 2.1

1 | 2 | 3 | 4 | 5

Page ____ of ____

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	6/16/15	1015		X	Bkg-1		6'				X		395922
↓	↓	~~1030~~ 1130		X	Bkg-2		6'				↓		395923
↓	↓		X		STP-2		NA				↓		395924

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	6/17/15	941		6/17/15	9:41
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.

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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: June 23, 2015

Work Order: 15061711

Project Name: 30137 #4
Project Number: 7250715053

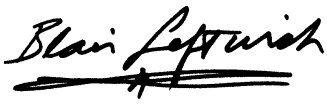
Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
395914	N-Wall	soil	2015-06-15	13:15	2015-06-17
395915	W-Wall	soil	2015-06-15	13:17	2015-06-17
395916	E-Wall	soil	2015-06-15	13:19	2015-06-17
395917	S-Wall	soil	2015-06-15	13:22	2015-06-17
395918	RP	soil	2015-06-15	13:25	2015-06-17
395919	STP	soil	2015-06-15	13:27	2015-06-17

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.

This report consists of a total of 28 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



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

Report Contents

Case Narrative

Samples for project 30137 #4 were received by TraceAnalysis, Inc. on 2015-06-17 and assigned to work order 15061711. Samples for work order 15061711 were received intact at a temperature of 2.1 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	103596	2015-06-19 at 08:14	122488	2015-06-20 at 12:17
Chloride (Titration)	SM 4500-Cl B	103564	2015-06-18 at 08:35	122418	2015-06-18 at 09:30
Chloride (Titration)	SM 4500-Cl B	103564	2015-06-18 at 08:35	122419	2015-06-18 at 09:55
Chloride (Titration)	SM 4500-Cl B	103564	2015-06-18 at 08:35	122475	2015-06-19 at 12:51
TPH DRO - NEW	S 8015 D	103612	2015-06-19 at 15:26	122545	2015-06-23 at 09:48
TPH GRO	S 8015 D	103596	2015-06-19 at 08:14	122489	2015-06-20 at 12:28

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 15061711 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.

Report Date: June 23, 2015 Work Order: 15061711 Page Number: 6 of 28
7250715053 30137 #4

Analytical Report

Sample: 395914 - N-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qs,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)			1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	1	2.00	98	70 - 130

Sample: 395914 - N-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122419	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

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

Sample: 395914 - N-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

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			61.2	mg/Kg	1	50.0	122	70 - 130

Sample: 395914 - N-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.31	mg/Kg	1	2.00	116	70 - 130
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	70 - 130

Sample: 395915 - W-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene		5	**0.0221**	mg/Kg	1	0.0200
Ethylbenzene	Qs	5	**0.0389**	mg/Kg	1	0.0200
Xylene		5	**0.0681**	mg/Kg	1	0.0200

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)			1.95	mg/Kg	1	2.00	98	70 - 130

Sample: 395915 - W-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122419	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

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

Sample: 395915 - W-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

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			53.9	mg/Kg	1	50.0	108	70 - 130

Sample: 395915 - W-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Qs	5	**9.34**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.30	mg/Kg	1	2.00	115	70 - 130
4-Bromofluorobenzene (4-BFB)			2.12	mg/Kg	1	2.00	106	70 - 130

Report Date: June 23, 2015 Work Order: 15061711 Page Number: 9 of 28
7250715053 30137 #4

Sample: 395916 - E-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene		5	**0.0231**	mg/Kg	1	0.0200
Ethylbenzene	Qs	5	**0.0528**	mg/Kg	1	0.0200
Xylene		5	**0.0585**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.87	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	1	2.00	98	70 - 130

Sample: 395916 - E-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122419	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

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

Sample: 395916 - E-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

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			64.6	mg/Kg	1	50.0	129	70 - 130

Sample: 395916 - E-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Qs	5	**8.14**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.33	mg/Kg	1	2.00	116	70 - 130
4-Bromofluorobenzene (4-BFB)			2.13	mg/Kg	1	2.00	106	70 - 130

Sample: 395917 - S-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qs,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)			2.01	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			2.03	mg/Kg	1	2.00	102	70 - 130

Sample: 395917 - S-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122475	Date Analyzed:	2015-06-19	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

continued . . .

sample 395917 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

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

Sample: 395917 - S-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

Parameter	Flag	Cert	RL Result	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			56.2	mg/Kg	1	50.0	112	70 - 130

Sample: 395917 - S-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.47	mg/Kg	1	2.00	124	70 - 130
4-Bromofluorobenzene (4-BFB)			2.13	mg/Kg	1	2.00	106	70 - 130

Sample: 395918 - RP

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qs,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)			2.03	mg/Kg	1	2.00	102	70 - 130

Sample: 395918 - RP

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122475	Date Analyzed:	2015-06-19	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

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

Sample: 395918 - RP

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

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			58.0	mg/Kg	1	50.0	116	70 - 130

Sample: 395918 - RP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.42	mg/Kg	1	2.00	121	70 - 130
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	70 - 130

Sample: 395919 - STP

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		5	**0.0248**	mg/Kg	1	0.0200
Toluene		5	**0.777**	mg/Kg	1	0.0200
Ethylbenzene	Qs	5	**1.13**	mg/Kg	1	0.0200
Xylene		5	**1.22**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.35	mg/Kg	1	2.00	168	70 - 130

Sample: 395919 - STP

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122418	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

continued . . .

sample 395919 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**588**	mg/Kg	5	4.00

Sample: 395919 - STP

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			60.6	mg/Kg	1	50.0	121	70 - 130

Sample: 395919 - STP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	5	**314**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	7.56	mg/Kg	1	2.00	378	70 - 130

Method Blanks

Method Blank (1) QC Batch: 122418

QC Batch:	122418	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	QC Preparation:	2015-06-18	Prepared By:	AK

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

Method Blank (1) QC Batch: 122419

QC Batch:	122419	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	QC Preparation:	2015-06-18	Prepared By:	AK

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

Method Blank (1) QC Batch: 122475

QC Batch:	122475	Date Analyzed:	2015-06-19	Analyzed By:	AK
Prep Batch:	103564	QC Preparation:	2015-06-18	Prepared By:	AK

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

Method Blank (1) QC Batch: 122488

QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	QC Preparation:	2015-06-19	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)			2.00	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	70 - 130

Method Blank (1) QC Batch: 122489

QC Batch: 122489 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 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)			2.41	mg/Kg	1	2.00	120	70 - 130
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	1	2.00	103	70 - 130

Method Blank (1) QC Batch: 122545

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC
Prep Batch: 103612 QC Preparation: 2015-06-19 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			57.1	mg/Kg	1	50.0	114	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 122418 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2350	mg/Kg	5	2500	<19.2	94	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			2350	mg/Kg	5	2500	<19.2	94	85 - 115	0	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: 122419 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2520	mg/Kg	5	2500	<19.2	101	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			2430	mg/Kg	5	2500	<19.2	97	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: 122475 Date Analyzed: 2015-06-19 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2560	mg/Kg	5	2500	<19.2	102	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			2370	mg/Kg	5	2500	<19.2	95	85 - 115	8	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: 122488 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		5	1.99	mg/Kg	1	2.00	<0.00533	100	70 - 130
Toluene		5	1.88	mg/Kg	1	2.00	<0.00645	94	70 - 130
Ethylbenzene		5	1.76	mg/Kg	1	2.00	<0.0116	88	70 - 130
Xylene		5	5.80	mg/Kg	1	6.00	<0.00874	97	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	1.97	mg/Kg	1	2.00	<0.00533	98	70 - 130	1	20
Toluene		5	1.91	mg/Kg	1	2.00	<0.00645	96	70 - 130	2	20
Ethylbenzene		5	1.78	mg/Kg	1	2.00	<0.0116	89	70 - 130	1	20
Xylene		5	5.83	mg/Kg	1	6.00	<0.00874	97	70 - 130	0	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)	1.90	1.84	mg/Kg	1	2.00	95	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.93	1.87	mg/Kg	1	2.00	96	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 122489 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		5	14.6	mg/Kg	1	20.0	<2.32	73	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	15.7	mg/Kg	1	20.0	<2.32	78	70 - 130	7	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)	2.43	2.40	mg/Kg	1	2.00	122	120	70 - 130
4-Bromofluorobenzene (4-BFB)	2.16	2.13	mg/Kg	1	2.00	108	106	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC
Prep Batch: 103612 QC Preparation: 2015-06-19 Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		5	239	mg/Kg	1	250	<7.41	96	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	249	mg/Kg	1	250	<7.41	100	70 - 130	4	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	58.5	61.9	mg/Kg	1	50.0	117	124	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 396009

QC Batch: 122418 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Qs	Qs	19700	mg/Kg	5	2500	16600	124	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	Qs	Qs	19900	mg/Kg	5	2500	16600	132	78.9 - 121	1	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: 396011

QC Batch: 122419 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			14800	mg/Kg	5	2500	12233	103	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			15000	mg/Kg	5	2500	12233	112	78.9 - 121	1	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: 395918

QC Batch: 122475 Date Analyzed: 2015-06-19 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2370	mg/Kg	5	2500	<19.2	95	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			2370	mg/Kg	5	2500	<19.2	95	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: 395908

QC Batch: 122488 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[5]	1.51	mg/Kg	1	2.00	<0.00533	76	70 - 130
Toluene		[5]	1.53	mg/Kg	1	2.00	0.0628	73	70 - 130
Ethylbenzene	Qs	Qs [5]	1.42	mg/Kg	1	2.00	0.0413	69	70 - 130
Xylene		[5]	4.64	mg/Kg	1	6.00	0.0429	77	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]	1.74	mg/Kg	1	2.00	<0.00533	87	70 - 130	14	20
Toluene		[5]	1.67	mg/Kg	1	2.00	0.0628	80	70 - 130	9	20
Ethylbenzene		[5]	1.63	mg/Kg	1	2.00	0.0413	79	70 - 130	14	20
Xylene		[5]	5.35	mg/Kg	1	6.00	0.0429	88	70 - 130	14	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)	1.81	1.92	mg/Kg	1	2	90	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.92	1.97	mg/Kg	1	2	96	98	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 395908

QC Batch: 122489 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	5	11.8	mg/Kg	1	20.0	11.6	1	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	Qs	Qs	5	13.2	mg/Kg	1	20.0	11.6	8	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)	2.26	2.45	mg/Kg	1	2	113	122	70 - 130
4-Bromofluorobenzene (4-BFB)	2.03	2.15	mg/Kg	1	2	102	108	70 - 130

Matrix Spike (MS-1) Spiked Sample: 395908

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC
Prep Batch: 103612 QC Preparation: 2015-06-19 Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		5	213	mg/Kg	1	250	<7.41	85	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	163	mg/Kg	1	250	<7.41	65	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	57.2	59.8	mg/Kg	1	50	114	120	70 - 130

Calibration Standards

Standard (ICV-1)

QC Batch: 122418 Date Analyzed: 2015-06-18 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	2015-06-18

Standard (CCV-1)

QC Batch: 122418 Date Analyzed: 2015-06-18 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	2015-06-18

Standard (ICV-1)

QC Batch: 122419 Date Analyzed: 2015-06-18 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	2015-06-18

Standard (CCV-1)

QC Batch: 122419 Date Analyzed: 2015-06-18 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	2015-06-18

Standard (ICV-1)

QC Batch: 122475 Date Analyzed: 2015-06-19 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	2015-06-19

Standard (CCV-1)

QC Batch: 122475 Date Analyzed: 2015-06-19 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	2015-06-19

Standard (CCV-2)

QC Batch: 122488 Date Analyzed: 2015-06-20 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	0.0986	99	80 - 120	2015-06-20
Toluene		5	mg/kg	0.100	0.0920	92	80 - 120	2015-06-20
Ethylbenzene		5	mg/kg	0.100	0.0857	86	80 - 120	2015-06-20
Xylene		5	mg/kg	0.300	0.282	94	80 - 120	2015-06-20

Standard (CCV-3)

QC Batch: 122488 Date Analyzed: 2015-06-20 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	0.0978	98	80 - 120	2015-06-20
Toluene		5	mg/kg	0.100	0.0933	93	80 - 120	2015-06-20
Ethylbenzene		5	mg/kg	0.100	0.0887	89	80 - 120	2015-06-20
Xylene		5	mg/kg	0.300	0.289	96	80 - 120	2015-06-20

Standard (CCV-2)

QC Batch: 122489 Date Analyzed: 2015-06-20 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	0.940	94	80 - 120	2015-06-20

Standard (CCV-3)

QC Batch: 122489 Date Analyzed: 2015-06-20 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	0.900	90	80 - 120	2015-06-20

Standard (CCV-1)

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	275	110	80 - 120	2015-06-23

Standard (CCV-2)

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	243	97	80 - 120	2015-06-23

Standard (CCV-3)

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC

Report Date: June 23, 2015 Work Order: 15061711 Page Number: 26 of 28
7250715053 30137 #4

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	249	100	80 - 120	2015-06-23

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#: 1506171l

CHAIN OF CUSTODY RECORD

APEX

Office Location: Midland, TX

Project Manager: Kardiam Tubb

Laboratory: Trace Analysis

Address:

Contact:

Phone:

PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 2.1

1	2	3	4	5

Page ____ of ____

Sampler's Name: Travis Turner

Sampler's Signature: [signature]

Proj. No.: 7250715053

Project Name: 30137 #4

No/Type of Containers: 6/4oz

ANALYSIS REQUESTED: BTEX 8021B; TPH 418.1/DRO; 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	BTEX 8021B	TPH 418.1/DRO	Chlorides	Lab Sample ID (Lab Use Only)
S	6/15/15	1315		X	N-Wall		6'				X		X	X	X	395914
↓	↓	1317		↓	W-Wall		↓				↓		↓	↓	↓	395915
↓	↓	1319		↓	E-Wall		↓				↓		↓	↓	↓	395916
↓	↓	1322		↓	S-Wall		↓				↓		↓	↓	↓	395917
↓	↓	1325		↓	RP		8'				↓		↓	↓	↓	395918
↓	↓	1327	X		STP		NA				↓		↓	↓	↓	395919

TT 6/16/15

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	6/17/15	9:41	[signature]	6/17/15	9:41

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 ______

Apex TITAN, Inc. • 505 N. Big Springs Drive, Suite 301A • Midland, Texas 79701 • Office: 432-695-6016

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: June 23, 2015

Work Order: 15061709

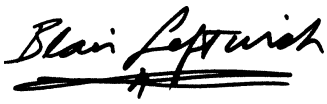
Project Name: 30137 #5
Project Number: 7250715061

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
395908	N-Wall	soil	2015-06-15	13:30	2015-06-17
395909	E-Wall	soil	2015-06-15	13:33	2015-06-17
395910	S-Wall	soil	2015-06-15	13:36	2015-06-17
395911	W-Wall	soil	2015-06-15	13:40	2015-06-17
395912	RP	soil	2015-06-15	13:45	2015-06-17
395913	STP	soil	2015-06-15	13:50	2015-06-17

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 30137 #5 were received by TraceAnalysis, Inc. on 2015-06-17 and assigned to work order 15061709. Samples for work order 15061709 were received intact at a temperature of 2.1 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	103596	2015-06-19 at 08:14	122488	2015-06-20 at 12:17
BTEX	S 8021B	103647	2015-06-22 at 15:12	122539	2015-06-23 at 07:18
Chloride (Titration)	SM 4500-Cl B	103564	2015-06-18 at 08:35	122419	2015-06-18 at 09:55
Chloride (Titration)	SM 4500-Cl B	103564	2015-06-18 at 08:35	122430	2015-06-18 at 11:20
TPH DRO - NEW	S 8015 D	103612	2015-06-19 at 15:26	122545	2015-06-23 at 09:48
TPH GRO	S 8015 D	103596	2015-06-19 at 08:14	122489	2015-06-20 at 12:28
TPH GRO	S 8015 D	103647	2015-06-22 at 15:12	122540	2015-06-23 at 07:21

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 15061709 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.

Report Date: June 23, 2015 Work Order: 15061709 Page Number: 6 of 32
7250715061 30137 #5

Analytical Report

Sample: 395908 - N-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122539	Date Analyzed:	2015-06-23	Analyzed By:	AK
Prep Batch:	103647	Sample Preparation:	2015-06-22	Prepared By:	AK

Parameter	Flag	Cert	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)			1.91	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Sample: 395908 - N-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122430	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			**193**	mg/Kg	5	4.00

Sample: 395908 - N-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

Parameter	Flag	Cert	Result	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	Qsr	Qsr		69.3	mg/Kg	1	50.0	139	70 - 130

Sample: 395908 - N-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122540	Date Analyzed:	2015-06-23	Analyzed By:	AK
Prep Batch:	103647	Sample Preparation:	2015-06-22	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.42	mg/Kg	1	2.00	121	70 - 130
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	70 - 130

Sample: 395909 - E-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	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	Qs,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)			2.08	mg/Kg	1	2.00	104	70 - 130
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	70 - 130

Sample: 395909 - E-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122419	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

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

Sample: 395909 - E-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

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			61.1	mg/Kg	1	50.0	122	70 - 130

Sample: 395909 - E-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.46	mg/Kg	1	2.00	123	70 - 130
4-Bromofluorobenzene (4-BFB)			2.13	mg/Kg	1	2.00	106	70 - 130

Sample: 395910 - S-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qs,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)			2.04	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)			2.09	mg/Kg	1	2.00	104	70 - 130

Sample: 395910 - S-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122419	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

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

Sample: 395910 - S-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

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 [1] Qsr	Qsr		135	mg/Kg	1	100	135	70 - 130

Sample: 395910 - S-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.42	mg/Kg	1	2.00	121	70 - 130
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	1	2.00	103	70 - 130

Sample: 395911 - W-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qs,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)			1.79	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	70 - 130

Sample: 395911 - W-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122419	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

continued . . .

sample 395911 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

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

Sample: 395911 - W-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

Parameter	Flag	Cert	RL Result	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			63.8	mg/Kg	1	50.0	128	70 - 130

Sample: 395911 - W-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.23	mg/Kg	1	2.00	112	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Sample: 395912 - RP

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qs,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)			1.90	mg/Kg	1	2.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)			2.01	mg/Kg	1	2.00	100	70 - 130

Sample: 395912 - RP

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122419	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**5630**	mg/Kg	5	4.00

Sample: 395912 - RP

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

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			50.3	mg/Kg	1	50.0	101	70 - 130

Sample: 395912 - RP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.36	mg/Kg	1	2.00	118	70 - 130
4-Bromofluorobenzene (4-BFB)			2.07	mg/Kg	1	2.00	104	70 - 130

Sample: 395913 - STP

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122488	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qs,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)			1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	1	2.00	98	70 - 130

Sample: 395913 - STP

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122419	Date Analyzed:	2015-06-18	Analyzed By:	AK
Prep Batch:	103564	Sample Preparation:	2015-06-18	Prepared By:	AK

continued ...

sample 395913 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

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

Sample: 395913 - STP

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	Sample Preparation:	2015-06-19	Prepared By:	SC

Parameter	Flag	Cert	RL Result	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			62.3	mg/Kg	1	50.0	125	70 - 130

Sample: 395913 - STP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	122489	Date Analyzed:	2015-06-20	Analyzed By:	AK
Prep Batch:	103596	Sample Preparation:	2015-06-19	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.32	mg/Kg	1	2.00	116	70 - 130
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	70 - 130

Method Blanks

Method Blank (1) QC Batch: 122419

QC Batch: 122419 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

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

Method Blank (1) QC Batch: 122430

QC Batch: 122430 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

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

Method Blank (1) QC Batch: 122488

QC Batch: 122488 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 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)			2.00	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	70 - 130

Method Blank (1) QC Batch: 122489

QC Batch: 122489 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 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)			2.41	mg/Kg	1	2.00	120	70 - 130
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	1	2.00	103	70 - 130

Method Blank (1) QC Batch: 122539

QC Batch: 122539 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 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)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Method Blank (1) QC Batch: 122540

QC Batch: 122540 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 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)			2.33	mg/Kg	1	2.00	116	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Method Blank (1) QC Batch: 122545

QC Batch:	122545	Date Analyzed:	2015-06-23	Analyzed By:	SC
Prep Batch:	103612	QC Preparation:	2015-06-19	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			57.1	mg/Kg	1	50.0	114	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 122419 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2520	mg/Kg	5	2500	<19.2	101	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			2430	mg/Kg	5	2500	<19.2	97	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: 122430 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2320	mg/Kg	5	2500	<19.2	93	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			2420	mg/Kg	5	2500	<19.2	97	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: 122488 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		5	1.99	mg/Kg	1	2.00	<0.00533	100	70 - 130
Toluene		5	1.88	mg/Kg	1	2.00	<0.00645	94	70 - 130
Ethylbenzene		5	1.76	mg/Kg	1	2.00	<0.0116	88	70 - 130
Xylene		5	5.80	mg/Kg	1	6.00	<0.00874	97	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	1.97	mg/Kg	1	2.00	<0.00533	98	70 - 130	1	20
Toluene		5	1.91	mg/Kg	1	2.00	<0.00645	96	70 - 130	2	20
Ethylbenzene		5	1.78	mg/Kg	1	2.00	<0.0116	89	70 - 130	1	20
Xylene		5	5.83	mg/Kg	1	6.00	<0.00874	97	70 - 130	0	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)	1.90	1.84	mg/Kg	1	2.00	95	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.93	1.87	mg/Kg	1	2.00	96	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 122489 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		5	14.6	mg/Kg	1	20.0	<2.32	73	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	15.7	mg/Kg	1	20.0	<2.32	78	70 - 130	7	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)	2.43	2.40	mg/Kg	1	2.00	122	120	70 - 130
4-Bromofluorobenzene (4-BFB)	2.16	2.13	mg/Kg	1	2.00	108	106	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 122539 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		5	1.89	mg/Kg	1	2.00	<0.00533	94	70 - 130
Toluene		5	1.80	mg/Kg	1	2.00	<0.00645	90	70 - 130
Ethylbenzene		5	1.73	mg/Kg	1	2.00	<0.0116	86	70 - 130
Xylene		5	5.64	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	1.93	mg/Kg	1	2.00	<0.00533	96	70 - 130	2	20
Toluene		5	1.81	mg/Kg	1	2.00	<0.00645	90	70 - 130	1	20
Ethylbenzene		5	1.74	mg/Kg	1	2.00	<0.0116	87	70 - 130	1	20
Xylene		5	5.70	mg/Kg	1	6.00	<0.00874	95	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)	1.86	1.76	mg/Kg	1	2.00	93	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.83	1.75	mg/Kg	1	2.00	92	88	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 122540 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		5	15.5	mg/Kg	1	20.0	<2.32	78	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	15.3	mg/Kg	1	20.0	<2.32	76	70 - 130	1	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)	2.34	2.35	mg/Kg	1	2.00	117	118	70 - 130
4-Bromofluorobenzene (4-BFB)	2.09	2.12	mg/Kg	1	2.00	104	106	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC
Prep Batch: 103612 QC Preparation: 2015-06-19 Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		5	239	mg/Kg	1	250	<7.41	96	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	249	mg/Kg	1	250	<7.41	100	70 - 130	4	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	58.5	61.9	mg/Kg	1	50.0	117	124	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 396011

QC Batch: 122419 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			14800	mg/Kg	5	2500	12233	103	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			15000	mg/Kg	5	2500	12233	112	78.9 - 121	1	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: 395750

QC Batch: 122430 Date Analyzed: 2015-06-18 Analyzed By: AK
Prep Batch: 103564 QC Preparation: 2015-06-18 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10100	mg/Kg	1	2500	7440	106	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			9760	mg/Kg	1	2500	7440	93	78.9 - 121	3	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: 395908

QC Batch: 122488 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 Prepared By: AK

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene			5	1.51	mg/Kg	1	2.00	<0.00533	76	70 - 130
Toluene			5	1.53	mg/Kg	1	2.00	0.0628	73	70 - 130
Ethylbenzene	Qs	Qs	5	1.42	mg/Kg	1	2.00	0.0413	69	70 - 130
Xylene			5	4.64	mg/Kg	1	6.00	0.0429	77	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	1.74	mg/Kg	1	2.00	<0.00533	87	70 - 130	14	20
Toluene		5	1.67	mg/Kg	1	2.00	0.0628	80	70 - 130	9	20
Ethylbenzene		5	1.63	mg/Kg	1	2.00	0.0413	79	70 - 130	14	20
Xylene		5	5.35	mg/Kg	1	6.00	0.0429	88	70 - 130	14	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)	1.81	1.92	mg/Kg	1	2	90	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.92	1.97	mg/Kg	1	2	96	98	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 395908

QC Batch: 122489 Date Analyzed: 2015-06-20 Analyzed By: AK
Prep Batch: 103596 QC Preparation: 2015-06-19 Prepared By: AK

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	5	11.8	mg/Kg	1	20.0	11.6	1	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	Qs Qs	5	13.2	mg/Kg	1	20.0	11.6	8	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)	2.26	2.45	mg/Kg	1	2	113	122	70 - 130
4-Bromofluorobenzene (4-BFB)	2.03	2.15	mg/Kg	1	2	102	108	70 - 130

Matrix Spike (MS-1) Spiked Sample: 395922

QC Batch: 122539 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		5	1.78	mg/Kg	1	2.00	<0.00533	89	70 - 130
Toluene		5	1.72	mg/Kg	1	2.00	<0.00645	86	70 - 130
Ethylbenzene		5	1.70	mg/Kg	1	2.00	<0.0116	85	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	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		5	1.66	mg/Kg	1	2.00	<0.00533	83	70 - 130	7	20
Toluene		5	1.59	mg/Kg	1	2.00	<0.00645	80	70 - 130	8	20
Ethylbenzene		5	1.59	mg/Kg	1	2.00	<0.0116	80	70 - 130	7	20
Xylene		5	5.25	mg/Kg	1	6.00	<0.00874	88	70 - 130	7	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)	1.84	1.89	mg/Kg	1	2	92	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.92	1.96	mg/Kg	1	2	96	98	70 - 130

Matrix Spike (MS-1) Spiked Sample: 395922

QC Batch: 122540 Date Analyzed: 2015-06-23 Analyzed By: AK
Prep Batch: 103647 QC Preparation: 2015-06-22 Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		5	14.8	mg/Kg	1	20.0	<2.32	74	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	Qs Qs	5	13.8	mg/Kg	1	20.0	<2.32	69	70 - 130	7	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)	2.49	2.48	mg/Kg	1	2	124	124	70 - 130
4-Bromofluorobenzene (4-BFB)	2.20	2.21	mg/Kg	1	2	110	110	70 - 130

Matrix Spike (MS-1) Spiked Sample: 395908

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC
Prep Batch: 103612 QC Preparation: 2015-06-19 Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		5	213	mg/Kg	1	250	<7.41	85	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	163	mg/Kg	1	250	<7.41	65	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	57.2	59.8	mg/Kg	1	50	114	120	70 - 130

Calibration Standards

Standard (ICV-1)

QC Batch: 122419 Date Analyzed: 2015-06-18 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	2015-06-18

Standard (CCV-1)

QC Batch: 122419 Date Analyzed: 2015-06-18 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	2015-06-18

Standard (ICV-1)

QC Batch: 122430 Date Analyzed: 2015-06-18 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	2015-06-18

Standard (CCV-1)

QC Batch: 122430 Date Analyzed: 2015-06-18 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	2015-06-18

Standard (CCV-1)

QC Batch: 122488 Date Analyzed: 2015-06-20 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	0.0984	98	80 - 120	2015-06-20
Toluene		5	mg/kg	0.100	0.0928	93	80 - 120	2015-06-20
Ethylbenzene		5	mg/kg	0.100	0.0874	87	80 - 120	2015-06-20
Xylene		5	mg/kg	0.300	0.287	96	80 - 120	2015-06-20

Standard (CCV-2)

QC Batch: 122488 Date Analyzed: 2015-06-20 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	0.0986	99	80 - 120	2015-06-20
Toluene		5	mg/kg	0.100	0.0920	92	80 - 120	2015-06-20
Ethylbenzene		5	mg/kg	0.100	0.0857	86	80 - 120	2015-06-20
Xylene		5	mg/kg	0.300	0.282	94	80 - 120	2015-06-20

Standard (CCV-3)

QC Batch: 122488 Date Analyzed: 2015-06-20 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	0.0978	98	80 - 120	2015-06-20
Toluene		5	mg/kg	0.100	0.0933	93	80 - 120	2015-06-20
Ethylbenzene		5	mg/kg	0.100	0.0887	89	80 - 120	2015-06-20
Xylene		5	mg/kg	0.300	0.289	96	80 - 120	2015-06-20

Standard (CCV-1)

QC Batch: 122489 Date Analyzed: 2015-06-20 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	0.881	88	80 - 120	2015-06-20

Standard (CCV-2)

QC Batch: 122489 Date Analyzed: 2015-06-20 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	0.940	94	80 - 120	2015-06-20

Standard (CCV-3)

QC Batch: 122489 Date Analyzed: 2015-06-20 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	0.900	90	80 - 120	2015-06-20

Standard (CCV-1)

QC Batch: 122539 Date Analyzed: 2015-06-23 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	0.0958	96	80 - 120	2015-06-23
Toluene		5	mg/kg	0.100	0.0891	89	80 - 120	2015-06-23
Ethylbenzene		5	mg/kg	0.100	0.0848	85	80 - 120	2015-06-23
Xylene		5	mg/kg	0.300	0.278	93	80 - 120	2015-06-23

Standard (CCV-2)

QC Batch: 122539 Date Analyzed: 2015-06-23 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	0.0950	95	80 - 120	2015-06-23
Toluene		5	mg/kg	0.100	0.0905	90	80 - 120	2015-06-23
Ethylbenzene		5	mg/kg	0.100	0.0861	86	80 - 120	2015-06-23
Xylene		5	mg/kg	0.300	0.283	94	80 - 120	2015-06-23

Standard (CCV-1)

QC Batch: 122540 Date Analyzed: 2015-06-23 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	0.968	97	80 - 120	2015-06-23

Standard (CCV-2)

QC Batch: 122540 Date Analyzed: 2015-06-23 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	0.964	96	80 - 120	2015-06-23

Standard (CCV-1)

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	275	110	80 - 120	2015-06-23

Standard (CCV-2)

QC Batch: 122545 Date Analyzed: 2015-06-23 Analyzed By: SC

Report Date: June 23, 2015 Work Order: 15061709 Page Number: 30 of 32
7250715061 30137 #5

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	243	97	80 - 120	2015-06-23

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

Result Comments

1 Analyst double spiked surrogate.

Attachments

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

WO # 15061709

CHAIN OF CUSTODY RECORD

APEX

Office Location: Midland, TX

Project Manager: Karolanne Toby

Laboratory: Trace Analysis

Address:

Contact:

Phone:

PO/SO #:

Sampler's Name: Travis Turner

Sampler's Signature: [signature]

Proj. No.: 7250715061

Project Name: 30137 #5

No/Type of Containers: 6/4oz

Lab use only

Due Date:

Temp. of coolers when received (C°): 2.1

1	2	3	4	5

Page ____ of ____

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	BTEX 8021B	TPH GRO/DRO	Chlorides	Lab Sample ID (Lab Use Only)
S	6/15/15	1330		X	N-Wall						X		X	X	X	395908
↓	↓	1333		↓	E-Wall						↓		↓	↓	↓	395909
↓	↓	1336		↓	S-Wall						↓		↓	↓	↓	395910
↓	↓	1340		↓	W-Wall						↓		↓	↓	↓	395911
↓	↓	1345		↓	RP						↓		↓	↓	↓	395912
↓	↓	1350	X		STP		NA				↓		↓	↓	↓	395913

TT 6/17/15

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

Relinquished by (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	6/17/15	941	[signature]	6/17/15	9:41

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 ____

Apex TITAN, Inc. • 505 N. Big Springs Drive, Suite 301A • Midland, Texas 79701 • Office: 432-695-6016

Analytical Report 522956

for

APEX/Titan

Project Manager: Karolanne Toby

30137 Pipeline Release

725010112096

28-JAN-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534-15-1)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
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)

28-JAN-16

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

Reference: XENCO Report No(s): **522956**
30137 Pipeline Release
Project Address: NM

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) 522956. 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. 522956 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 522956

APEX/Titan, Midland, TX

30137 Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
CS-1	S	01-14-16 11:06	- 6 ft	522956-001
CS-2	S	01-14-16 11:12	- 6 ft	522956-002
CS-3	S	01-14-16 11:18	- 10 ft	522956-003
CS-4	S	01-14-16 11:24	- 6 ft	522956-004
CS-5	S	01-14-16 11:30	- 6 ft	522956-005
CS-6	S	01-14-16 11:36	- 6 ft	522956-006
CS-7	S	01-14-16 11:42	- 6 ft	522956-007
CS-8	S	01-14-16 11:48	- 6 ft	522956-008
CS-9	S	01-14-16 11:59	- 10 ft	522956-009
CS-10	S	01-14-16 12:00	- 6 ft	522956-010
CS-11	S	01-14-16 12:03	- 6 ft	522956-011
CS-12	S	01-14-16 12:06	- 10 ft	522956-012
CS-13	S	01-14-16 12:12	- 6 ft	522956-013
CS-14	S	01-14-16 12:18	- 6 ft	522956-014
SP-1	S	01-14-16 12:40		522956-015
SP-2	S	01-14-16 12:50		522956-016
SP-3	S	01-14-16 12:59		522956-017

CASE NARRATIVE

Client Name: APEX/Titan

Project Name: 30137 Pipeline Release

Project ID: *725010112096*
Work Order Number(s): *522956*

Report Date: *28-JAN-16*
Date Received: *01/15/2016*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 522956

APEX/Titan, Midland, TX

Project Name: 30137 Pipeline Release

Project Id: 725010112096
Contact: Karolanne Toby
Project Location: NM

Date Received in Lab: Fri Jan-15-16 08:40 am
Report Date: 28-JAN-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	522956-001		522956-002		522956-003		522956-004		522956-005		522956-006	
	Field Id:	CS-1		CS-2		CS-3		CS-4		CS-5		CS-6	
	Depth:	6 ft		6 ft		10 ft		6 ft		6 ft		6 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-14-16 11:06		Jan-14-16 11:12		Jan-14-16 11:18		Jan-14-16 11:24		Jan-14-16 11:30		Jan-14-16 11:36	
BTEX by EPA 8021B	***Extracted:***	Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00	
	Analyzed:	Jan-18-16 18:57		Jan-18-16 12:58		Jan-18-16 11:50		Jan-18-16 19:12		Jan-18-16 12:07		Jan-18-16 13:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		0.0142	0.00101	ND	0.000990	ND	0.000998	0.00150	0.000990	ND	0.000990	ND	0.00101
Toluene		0.0637	0.00202	ND	0.00198	ND	0.00200	ND	0.00198	ND	0.00198	ND	0.00202
Ethylbenzene		0.0147	0.00101	ND	0.000990	ND	0.000998	ND	0.000990	ND	0.000990	ND	0.00101
m,p-Xylenes		0.122	0.00202	ND	0.00198	ND	0.00200	0.312	0.00198	ND	0.00198	ND	0.00202
o-Xylene		0.0198	0.00101	ND	0.000990	ND	0.000998	0.193	0.000990	ND	0.000990	ND	0.00101
Total Xylenes		0.142	0.00101	ND	0.000990	ND	0.000998	0.505	0.000990	ND	0.000990	ND	0.00101
Total BTEX		0.234	0.00101	ND	0.000990	ND	0.000998	0.507	0.000990	ND	0.000990	ND	0.00101
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00	
	Analyzed:	Jan-26-16 20:02		Jan-26-16 20:28		Jan-27-16 15:41		Jan-26-16 20:53		Jan-26-16 21:06		Jan-26-16 21:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		56.5	2.00	13.7	2.00	6.74	2.00	9.42	2.00	ND	2.00	ND	2.00
TPH by SW 8015B	***Extracted:***	Jan-19-16 11:30		Jan-19-16 11:30		Jan-19-16 11:30		Jan-19-16 11:30		Jan-19-16 11:30		Jan-19-16 11:30	
	Analyzed:	Jan-20-16 02:53		Jan-20-16 03:27		Jan-20-16 03:59		Jan-21-16 14:12		Jan-20-16 05:02		Jan-20-16 05:35	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		24.3	14.9	ND	15.0	ND	15.0	149	15.0	ND	15.0	ND	14.9
C10-C28 Diesel Range Organics		ND	14.9	40.7	15.0	ND	15.0	300	15.0	101	15.0	ND	14.9
Total TPH		24.3	14.9	40.7	15.0	ND	15.0	449	15.0	101	15.0	ND	14.9

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Kelsey Brooks
Project Manager

Final 1.000

Certificate of Analysis Summary 522956

APEX/Titan, Midland, TX

Project Name: 30137 Pipeline Release

Project Id: 725010112096
Contact: Karolanne Toby
Project Location: NM

Date Received in Lab: Fri Jan-15-16 08:40 am
Report Date: 28-JAN-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	522956-007		522956-008		522956-009		522956-010		522956-011		522956-012	
	Field Id:	CS-7		CS-8		CS-9		CS-10		CS-11		CS-12	
	Depth:	6 ft		6 ft		10 ft		6 ft		6 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-14-16 11:42		Jan-14-16 11:48		Jan-14-16 11:59		Jan-14-16 12:00		Jan-14-16 12:03		Jan-14-16 12:06	
BTEX by EPA 8021B	***Extracted:***	Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00	
	Analyzed:	Jan-18-16 15:24		Jan-18-16 15:41		Jan-18-16 15:57		Jan-18-16 16:14		Jan-18-16 16:30		Jan-18-16 16:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00100	ND	0.00100	ND	0.000996	ND	0.000994	ND	0.00100	ND	0.00101
Toluene		ND	0.00201	ND	0.00200	ND	0.00199	ND	0.00199	ND	0.00200	ND	0.00202
Ethylbenzene		ND	0.00100	ND	0.00100	ND	0.000996	ND	0.000994	ND	0.00100	ND	0.00101
m,p-Xylenes		ND	0.00201	ND	0.00200	ND	0.00199	ND	0.00199	ND	0.00200	ND	0.00202
o-Xylene		ND	0.00100	ND	0.00100	ND	0.000996	ND	0.000994	ND	0.00100	ND	0.00101
Total Xylenes		ND	0.00100	ND	0.00100	ND	0.000996	ND	0.000994	ND	0.00100	ND	0.00101
Total BTEX		ND	0.00100	ND	0.00100	ND	0.000996	ND	0.000994	ND	0.00100	ND	0.00101
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00	
	Analyzed:	Jan-27-16 16:18		Jan-26-16 22:10		Jan-26-16 16:23		Jan-26-16 22:22		Jan-26-16 17:55		Jan-26-16 18:59	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2.84	2.00	5.66	2.00	ND	2.00	2.63	2.00	ND	2.00	7.29	2.00
TPH by SW 8015B	***Extracted:***	Jan-19-16 11:30		Jan-20-16 09:00		Jan-20-16 09:00		Jan-20-16 09:00		Jan-20-16 09:00		Jan-20-16 09:00	
	Analyzed:	Jan-20-16 06:09		Jan-21-16 01:27		Jan-21-16 01:51		Jan-21-16 02:16		Jan-21-16 02:41		Jan-21-16 03:08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	14.9
C10-C28 Diesel Range Organics		ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	14.9
Total TPH		ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	14.9

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Kelsey Brooks
Project Manager

Certificate of Analysis Summary 522956

APEX/Titan, Midland, TX

Project Name: 30137 Pipeline Release

Project Id: 725010112096
Contact: Karolanne Toby
Project Location: NM

Date Received in Lab: Fri Jan-15-16 08:40 am
Report Date: 28-JAN-16
Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	522956-013		522956-014		522956-015		522956-016		522956-017	
		Field Id:	CS-13		CS-14		SP-1		SP-2		SP-3	
		Depth:	6 ft		6 ft							
		Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
		Sampled:	Jan-14-16 12:12		Jan-14-16 12:18		Jan-14-16 12:40		Jan-14-16 12:50		Jan-14-16 12:59	
BTEX by EPA 8021B		Extracted:	Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00		Jan-18-16 09:00	
		Analyzed:	Jan-19-16 09:47		Jan-18-16 17:20		Jan-18-16 17:35		Jan-18-16 17:51		Jan-18-16 18:41	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene			ND	0.00101	ND	0.000992	ND	0.000996	ND	0.000996	ND	0.00101
Toluene			ND	0.00202	ND	0.00198	ND	0.00199	ND	0.00199	ND	0.00201
Ethylbenzene			ND	0.00101	ND	0.000992	ND	0.000996	ND	0.000996	ND	0.00101
m,p-Xylenes			ND	0.00202	ND	0.00198	ND	0.00199	ND	0.00199	ND	0.00201
o-Xylene			ND	0.00101	ND	0.000992	ND	0.000996	ND	0.000996	ND	0.00101
Total Xylenes			ND	0.00101	ND	0.000992	ND	0.000996	ND	0.000996	ND	0.00101
Total BTEX			ND	0.00101	ND	0.000992	ND	0.000996	ND	0.000996	ND	0.00101
Inorganic Anions by EPA 300/300.1		Extracted:	Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00		Jan-22-16 10:00	
		Analyzed:	Jan-26-16 18:20		Jan-26-16 18:33		Jan-26-16 18:46		Jan-26-16 19:37		Jan-27-16 21:15	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride			2.47	2.00	5.75	2.00	364	100	141	40.0	37.0	10.0
TPH by SW 8015B		Extracted:	Jan-20-16 09:00		Jan-20-16 09:00		Jan-20-16 09:00		Jan-20-16 09:00		Jan-20-16 09:00	
		Analyzed:	Jan-21-16 03:37		Jan-21-16 03:34		Jan-21-16 13:42		Jan-21-16 04:47		Jan-21-16 05:21	
		Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons			ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	15.0
C10-C28 Diesel Range Organics			ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	15.0
Total TPH			ND	15.0	ND	15.0	ND	15.0	ND	15.0	ND	15.0

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Kelsey Brooks
Project Manager

Final 1.000

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to 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: 30137 Pipeline Release

Work Orders : 522956,

Project ID: 725010112096

Lab Batch #: 985838 **Sample:** 522956-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 11:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 985838 **Sample:** 522956-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 12:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 985838 **Sample:** 522956-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 12:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0352	0.0300	117	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 985838 **Sample:** 522956-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 13:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 985838 **Sample:** 522956-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 15:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	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: 30137 Pipeline Release

Work Orders : 522956,

Project ID: 725010112096

Lab Batch #: 985838 **Sample:** 522956-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 15:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 985838 **Sample:** 522956-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 15:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 985838 **Sample:** 522956-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 16:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 985838 **Sample:** 522956-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 16:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0355	0.0300	118	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 985838 **Sample:** 522956-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 16:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

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

Form 2 - Surrogate Recoveries

Project Name: 30137 Pipeline Release

Work Orders : 522956,

Project ID: 725010112096

Lab Batch #: 985838 **Sample:** 522956-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 17:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0359	0.0300	120	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 985838 **Sample:** 522956-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 17:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 985838 **Sample:** 522956-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 17:51

SURROGATE RECOVERY STUDY

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

Lab Batch #: 985838 **Sample:** 522956-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 18:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 985838 **Sample:** 522956-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 18:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	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: 30137 Pipeline Release

Work Orders : 522956,

Project ID: 725010112096

Lab Batch #: 985838 **Sample:** 522956-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 19:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

Lab Batch #: 985838 **Sample:** 522956-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/19/16 09:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 986082 **Sample:** 522956-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/20/16 02:53

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.5	99.6	88	70-135	
o-Terphenyl	46.6	49.8	94	70-135	

Lab Batch #: 986082 **Sample:** 522956-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/20/16 03:27

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.9	103	70-135	
o-Terphenyl	54.5	50.0	109	70-135	

Lab Batch #: 986082 **Sample:** 522956-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/20/16 03:59

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.7	106	70-135	
o-Terphenyl	57.1	49.9	114	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: 30137 Pipeline Release

Work Orders : 522956,

Project ID: 725010112096

Lab Batch #: 986082 **Sample:** 522956-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/20/16 05:02

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.8	99.8	89	70-135	
o-Terphenyl	47.1	49.9	94	70-135	

Lab Batch #: 986082 **Sample:** 522956-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/20/16 05:35

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.4	99.6	92	70-135	
o-Terphenyl	48.7	49.8	98	70-135	

Lab Batch #: 986082 **Sample:** 522956-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/20/16 06:09

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.1	99.8	93	70-135	
o-Terphenyl	49.9	49.9	100	70-135	

Lab Batch #: 986086 **Sample:** 522956-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 01:27

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.9	115	70-135	
o-Terphenyl	47.7	50.0	95	70-135	

Lab Batch #: 986086 **Sample:** 522956-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 01:51

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	47.2	50.0	94	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: 30137 Pipeline Release

Work Orders : 522956,

Project ID: 725010112096

Lab Batch #: 986086 **Sample:** 522956-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 02:16

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	44.0	49.9	88	70-135	

Lab Batch #: 986086 **Sample:** 522956-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 02:41

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	42.7	50.0	85	70-135	

Lab Batch #: 986086 **Sample:** 522956-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 03:08

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.6	104	70-135	
o-Terphenyl	44.1	49.8	89	70-135	

Lab Batch #: 986086 **Sample:** 522956-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 03:34

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	55.7	50.0	111	70-135	

Lab Batch #: 986086 **Sample:** 522956-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 03:37

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.9	105	70-135	
o-Terphenyl	44.0	50.0	88	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: 30137 Pipeline Release

Work Orders : 522956,

Project ID: 725010112096

Lab Batch #: 986086 **Sample:** 522956-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 04:47

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.4	99.9	84	70-135	
o-Terphenyl	44.6	50.0	89	70-135	

Lab Batch #: 986086 **Sample:** 522956-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 05:21

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.2	100	85	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 986086 **Sample:** 522956-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 13:42

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.8	99.9	94	70-135	
o-Terphenyl	49.5	50.0	99	70-135	

Lab Batch #: 986082 **Sample:** 522956-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 14:12

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	63.6	50.0	127	70-135	

Lab Batch #: 985838 **Sample:** 703579-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/18/16 09:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0337	0.0300	112	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

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

Form 2 - Surrogate Recoveries

Project Name: 30137 Pipeline Release

Work Orders : 522956,

Project ID: 725010112096

Lab Batch #: 986082 **Sample:** 703714-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/19/16 13:06

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.7	100	92	70-135	
o-Terphenyl	48.2	50.0	96	70-135	

Lab Batch #: 986086 **Sample:** 703716-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/20/16 09:11

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	45.9	50.0	92	70-135	

Lab Batch #: 985838 **Sample:** 703579-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/18/16 08:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0334	0.0300	111	80-120	
4-Bromofluorobenzene	0.0334	0.0300	111	80-120	

Lab Batch #: 986082 **Sample:** 703714-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/19/16 13:37

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.5	100	98	70-135	
o-Terphenyl	48.3	50.0	97	70-135	

Lab Batch #: 986086 **Sample:** 703716-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/20/16 09:38

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	49.6	50.0	99	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: 30137 Pipeline Release

Work Orders : 522956,

Project ID: 725010112096

Lab Batch #: 985838 **Sample:** 703579-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/18/16 08:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0338	0.0300	113	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 986082 **Sample:** 703714-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/19/16 14:04

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.6	100	94	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

Lab Batch #: 986086 **Sample:** 703716-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/20/16 10:06

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	135	100	135	70-135	
o-Terphenyl	57.3	50.0	115	70-135	

Lab Batch #: 985838 **Sample:** 522956-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 13:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 986082 **Sample:** 522956-007 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/20/16 06:41

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.1	99.7	98	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 30137 Pipeline Release

Work Orders : 522956,

Project ID: 725010112096

Lab Batch #: 986086 **Sample:** 522956-010 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 05:57

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.6	103	70-135	
o-Terphenyl	49.9	49.8	100	70-135	

Lab Batch #: 985838 **Sample:** 522956-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/18/16 13:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 986082 **Sample:** 522956-007 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/20/16 07:13

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	51.4	50.0	103	70-135	

Lab Batch #: 986086 **Sample:** 522956-010 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/21/16 08:14

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.7	103	70-135	
o-Terphenyl	50.8	49.9	102	70-135	

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

BS / BSD Recoveries

Project Name: 30137 Pipeline Release

Work Order #: 522956 **Project ID:** 725010112096

Analyst: SYG **Date Prepared:** 01/18/2016 **Date Analyzed:** 01/18/2016

Lab Batch ID: 985838 **Sample:** 703579-1-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	0.0805	81	0.100	0.0820	82	2	70-130	35	
Toluene	<0.00200	0.100	0.0810	81	0.100	0.0812	81	0	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0842	84	0.100	0.0839	84	0	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.172	86	0.200	0.171	86	1	70-135	35	
o-Xylene	<0.00100	0.100	0.0852	85	0.100	0.0849	85	0	71-133	35	

Analyst: MNR **Date Prepared:** 01/22/2016 **Date Analyzed:** 01/26/2016

Lab Batch ID: 986585 **Sample:** 703750-1-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	49.1	98	50.0	48.0	96	2	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: 30137 Pipeline Release

Work Order #: 522956 **Project ID:** 725010112096

Analyst: PJB **Date Prepared:** 01/19/2016 **Date Analyzed:** 01/19/2016

Lab Batch ID: 986082 **Sample:** 703714-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B 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	802	80	1000	840	84	5	70-135	35	
C10-C28 Diesel Range Organics	<15.0	1000	982	98	1000	973	97	1	70-135	35	

Analyst: PJB **Date Prepared:** 01/20/2016 **Date Analyzed:** 01/20/2016

Lab Batch ID: 986086 **Sample:** 703716-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B 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	801	80	1000	879	88	9	70-135	35	
C10-C28 Diesel Range Organics	<15.0	1000	1040	104	1000	1140	114	9	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: 30137 Pipeline Release

Work Order # : 522956 **Project ID:** 725010112096

Lab Batch ID: 985838 **QC- Sample ID:** 522956-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/18/2016 **Date Prepared:** 01/18/2016 **Analyst:** SYG

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000992	0.0992	0.0836	84	0.0992	0.0837	84	0	70-130	35	
Toluene	<0.00198	0.0992	0.0796	80	0.0992	0.0803	81	1	70-130	35	
Ethylbenzene	<0.000992	0.0992	0.0802	81	0.0992	0.0817	82	2	71-129	35	
m,p-Xylenes	<0.00198	0.198	0.163	82	0.198	0.166	84	2	70-135	35	
o-Xylene	<0.000992	0.0992	0.0795	80	0.0992	0.0800	81	1	71-133	35	

Lab Batch ID: 986082 **QC- Sample ID:** 522956-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/20/2016 **Date Prepared:** 01/19/2016 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B 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	<15.0	997	782	78	1000	724	72	8	70-135	35	
C10-C28 Diesel Range Organics	<15.0	997	918	92	1000	962	96	5	70-135	35	

Lab Batch ID: 986086 **QC- Sample ID:** 522956-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/21/2016 **Date Prepared:** 01/20/2016 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B 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	<14.9	996	845	85	997	794	80	6	70-135	35	
C10-C28 Diesel Range Organics	<14.9	996	942	95	997	968	97	3	70-135	35	

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

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

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

Contact:

Phone:

PO/SO #: 725010112096

Sampler's Name: Georgiana McSwane

Sampler's Signature:

Proj. No.: 725010112096

Project Name: 30137 Pipeline Release

No/Type of Containers: 17

ANALYSIS REQUESTED: Chloride; BTEX 8021B; TPH GRO/DRO

Lab use only
Due Date:

Temp. of coolers when received (C°): 2.9

1 | 2 | 3 | 4 | 5

Page 1 of 2

522956
Lab Sample ID (Lab Use Only)

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 L.	250 ml	Glass Jar	P/O
S	1/14/16	1106		X	CS-1		6'				X	
		1112			CS-2		6'					
		1118			CS-3		10'					
		1124			CS-4		6'					
		1130			CS-5		6'					
		1136			CS-6		6'					
		1142			CS-7		6'					
		1148			CS-8		6'					
		1154			CS-9		10'					
S	1/14/16	1200		X	CS-10		6'				X	

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	1/14/16	19:30		1/14/16	19:30
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
				1/14/16	8:40
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

* NM samples *

2.9°C

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

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CHAIN OF CUSTODY RECORD

APEX

Office Location Midland, TX

Project Manager Karolanne Toby

Laboratory: XENCO

Address: Midland, Tx

Contact:

Phone:

PO/SO #: 725010112096

Lab use only
Due Date:

Temp. of coolers when received (C°): 2.9

1 | 2 | 3 | 4 | 5

Page 2 of 2

Sampler's Name: Georgiana McSwane

Sampler's Signature:

Proj. No.

Project Name: 30137 Pipeline Release

No/Type of Containers: 17

ANALYSIS REQUESTED: Chloride; BTEX 8021B; TPH GRO/DRO

Lab Sample ID (Lab Use Only): 522956

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	BTEX 8021B	TPH GRO/DRO
S	1/14/16	1203		X	CS - 11		6'				X		X	X	X
		1206			CS - 12		10'								
		1212			CS - 13		6'								
		1218		X	CS - 14		6'								
		1240	X		SP - 1		-								
		1250	X		SP - 2		-								
S	1/14/16	1259	X		SP - 3		-				X		X	X	X

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	1/14/16	19:30		1/14/16	19:30
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
				01/14/16	8:40
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: * 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: 01/15/2016 08:40:00 AM

Work Order #: 522956

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

Temperature Measuring device used : r8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.9
#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: Carley Owens Date: 01/15/2016
Carley Owens

Checklist reviewed by: Kelsey Brooks Date: 01/15/2016
Kelsey Brooks

Analytical Report 526802

for

APEX/Titan

Project Manager: Karolanne Toby

30137 #3, #4, #5

725010112096

16-MAR-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

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

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534-15-1)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
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)

16-MAR-16

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

Reference: XENCO Report No(s): **526802**
30137 #3, #4, #5
Project Address: NM

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) 526802. 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. 526802 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 526802

APEX/Titan, Midland, TX

30137 #3, #4, #5

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
CS-1 (2015) (RE)	S	03-14-16 10:49	- 10 ft	526802-001
S-Wall (RE)	S	03-14-16 11:35	- 8 ft	526802-002
CS-2 (2015) (RE)	S	03-14-16 11:52	- 14 ft	526802-003
R.P. (RE)	S	03-14-16 12:04	- 13 ft	526802-004
SP-4	S	03-14-16 14:00		526802-005
SP-5	S	03-14-16 12:40		526802-006
SP-6	S	03-14-16 12:45		526802-007

CASE NARRATIVE

Client Name: APEX/Titan

Project Name: 30137 #3, #4, #5

Project ID: *725010112096*
Work Order Number(s): *526802*

Report Date: *16-MAR-16*
Date Received: *03/15/2016*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 526802

APEX/Titan, Midland, TX

Project Name: 30137 #3, #4, #5

Project Id: 725010112096
Contact: Karolanne Toby
Project Location: NM

Date Received in Lab: Tue Mar-15-16 08:40 am
Report Date: 16-MAR-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	526802-001		526802-002		526802-003		526802-004		526802-005		526802-006	
	Field Id:	CS-1 (2015) (RE)		S-Wall (RE)		CS-2 (2015) (RE)		R.P. (RE)		SP-4		SP-5	
	Depth:	10 ft		8 ft		14 ft		13 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-14-16 10:49		Mar-14-16 11:35		Mar-14-16 11:52		Mar-14-16 12:04		Mar-14-16 14:00		Mar-14-16 12:40	
BTEX by EPA 8021B	***Extracted:***	Mar-15-16 14:00				Mar-15-16 14:00				Mar-15-16 14:00		Mar-15-16 14:00	
	Analyzed:	Mar-15-16 18:42				Mar-15-16 18:58				Mar-16-16 15:08		Mar-16-16 11:08	
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL	mg/kg	RL
Benzene		ND	0.00150			ND	0.00149			ND	0.0299	ND	0.00150
Toluene		ND	0.00200			ND	0.00199			1.95	0.0399	0.0137	0.00200
Ethylbenzene		ND	0.00200			ND	0.00199			2.77	0.0399	0.0174	0.00200
m,p-Xylenes		ND	0.00200			ND	0.00199			11.2	0.0399	0.126	0.00200
o-Xylene		ND	0.00299			ND	0.00298			3.30	0.0599	ND	0.00299
Total Xylenes		ND	0.00200			ND	0.00199			14.5	0.0399	0.126	0.00200
Total BTEX		ND	0.00150			ND	0.00149			19.2	0.0299	0.157	0.00150
Inorganic Anions by EPA 300/300.1	***Extracted:***			Mar-15-16 14:00		Mar-15-16 14:00		Mar-15-16 14:00		Mar-15-16 14:00		Mar-15-16 14:00	
	Analyzed:			Mar-15-16 14:43		Mar-15-16 14:24		Mar-15-16 14:44		Mar-15-16 15:04		Mar-15-16 15:24	
	Units/RL:			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride				254	20.0	343	100	403	100	107	100	344	100
TPH by SW 8015B	***Extracted:***	Mar-15-16 09:00				Mar-15-16 09:00				Mar-15-16 09:00		Mar-15-16 09:00	
	Analyzed:	Mar-15-16 18:02				Mar-15-16 18:29				Mar-15-16 19:21		Mar-15-16 19:49	
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		ND	25.0			ND	24.9			583	24.9	215	25.0
C10-C28 Diesel Range Hydrocarbons		34.3	25.0			135	24.9			122	24.9	561	25.0
Total TPH		34.3	25.0			135	24.9			705	24.9	829	25.0

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

Kelsey Brooks
Project Manager

Final 1.000

Certificate of Analysis Summary 526802

APEX/Titan, Midland, TX

Project Name: 30137 #3, #4, #5

Project Id: 725010112096
Contact: Karolanne Toby
Project Location: NM

Date Received in Lab: Tue Mar-15-16 08:40 am
Report Date: 16-MAR-16
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	526802-007						
	Field Id:	SP-6						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Mar-14-16 12:45						
BTEX by EPA 8021B	***Extracted:***	Mar-15-16 14:00						
	Analyzed:	Mar-16-16 14:52						
	Units/RL:	mg/kg	RL					
Benzene		ND	0.00150					
Toluene		0.0140	0.00200					
Ethylbenzene		0.0193	0.00200					
m,p-Xylenes		0.211	0.00200					
o-Xylene		0.0221	0.00300					
Total Xylenes		0.233	0.00200					
Total BTEX		0.266	0.00150					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Mar-15-16 14:00						
	Analyzed:	Mar-15-16 15:45						
	Units/RL:	mg/kg	RL					
Chloride		207	100					
TPH by SW 8015B	***Extracted:***	Mar-15-16 09:00						
	Analyzed:	Mar-15-16 20:14						
	Units/RL:	mg/kg	RL					
C6-C10 Gasoline Range Hydrocarbons		198	24.9					
C10-C28 Diesel Range Hydrocarbons		229	24.9					
Total TPH		455	24.9					

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: 30137 #3, #4, #5

Work Orders : 526802,

Project ID: 725010112096

Lab Batch #: 990381 **Sample:** 526802-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 18:02

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-130	
o-Terphenyl	56.7	50.0	113	70-130	

Lab Batch #: 990381 **Sample:** 526802-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 18:29

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.7	116	70-130	
o-Terphenyl	57.3	49.9	115	70-130	

Lab Batch #: 990323 **Sample:** 526802-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 18:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 990323 **Sample:** 526802-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 18:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 990381 **Sample:** 526802-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 19:21

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.7	123	70-130	
o-Terphenyl	57.1	49.9	114	70-130	

* 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: 30137 #3, #4, #5

Work Orders : 526802,

Project ID: 725010112096

Lab Batch #: 990381 **Sample:** 526802-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 19:49

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.8	116	70-130	
o-Terphenyl	56.4	49.9	113	70-130	

Lab Batch #: 990381 **Sample:** 526802-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 20:14

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.7	114	70-130	
o-Terphenyl	54.7	49.9	110	70-130	

Lab Batch #: 990323 **Sample:** 526802-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/16/16 11:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 990323 **Sample:** 526802-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/16/16 14:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 990323 **Sample:** 526802-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/16/16 15:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

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

Form 2 - Surrogate Recoveries

Project Name: 30137 #3, #4, #5

Work Orders : 526802,

Project ID: 725010112096

Lab Batch #: 990381 **Sample:** 706407-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/16 08:42

SURROGATE RECOVERY STUDY

TPH by SW 8015B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.7	100	93	70-130	
o-Terphenyl	45.7	50.0	91	70-130	

Lab Batch #: 990323 **Sample:** 706394-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/16 14:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 990381 **Sample:** 706407-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/16 09:14

SURROGATE RECOVERY STUDY

TPH by SW 8015B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-130	
o-Terphenyl	50.0	50.0	100	70-130	

Lab Batch #: 990323 **Sample:** 706394-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/16 13:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 990381 **Sample:** 706407-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/16 09:48

SURROGATE RECOVERY STUDY

TPH by SW 8015B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-130	
o-Terphenyl	50.9	50.0	102	70-130	

* 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: 30137 #3, #4, #5

Work Orders : 526802,

Project ID: 725010112096

Lab Batch #: 990323 **Sample:** 706394-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/15/16 13:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 990323 **Sample:** 526801-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 13:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 990381 **Sample:** 526801-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 13:58

SURROGATE RECOVERY STUDY

TPH by SW 8015B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.8	128	70-130	
o-Terphenyl	57.5	49.9	115	70-130	

Lab Batch #: 990323 **Sample:** 526801-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 13:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0336	0.0300	112	80-120	

Lab Batch #: 990381 **Sample:** 526801-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/15/16 14:25

SURROGATE RECOVERY STUDY

TPH by SW 8015B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-130	
o-Terphenyl	55.7	50.0	111	70-130	

* 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: 30137 #3, #4, #5

Work Order #: 526802 **Project ID:** 725010112096

Analyst: PJB **Date Prepared:** 03/15/2016 **Date Analyzed:** 03/15/2016

Lab Batch ID: 990323 **Sample:** 706394-1-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	<0.00150	0.100	0.0840	84	0.100	0.0827	83	2	70-130	35	
Toluene	<0.00200	0.100	0.0831	83	0.100	0.0829	83	0	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0877	88	0.100	0.0850	85	3	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.184	92	0.200	0.178	89	3	70-135	35	
o-Xylene	<0.00300	0.100	0.0854	85	0.100	0.0831	83	3	71-133	35	

Analyst: MNR **Date Prepared:** 03/15/2016 **Date Analyzed:** 03/15/2016

Lab Batch ID: 990333 **Sample:** 706395-1-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	48.1	96	50.0	48.0	96	0	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: 30137 #3, #4, #5

Work Order #: 526802 **Project ID:** 725010112096

Analyst: ARM **Date Prepared:** 03/15/2016 **Date Analyzed:** 03/15/2016

Lab Batch ID: 990381 **Sample:** 706407-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B 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	<25.0	1000	818	82	1000	875	88	7	75-125	35	
C10-C28 Diesel Range Hydrocarbons	<25.0	1000	851	85	1000	920	92	8	75-125	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: 30137 #3, #4, #5

Work Order #: 526802

Lab Batch #: 990333 **Project ID:** 725010112096

Date Analyzed: 03/15/2016 **Date Prepared:** 03/15/2016 **Analyst:** MNR

QC- Sample ID: 526801-005 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	65.5	500	547	96	80-120	

Lab Batch #: 990333

Date Analyzed: 03/15/2016 **Date Prepared:** 03/15/2016 **Analyst:** MNR

QC- Sample ID: 526802-002 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	254	500	747	99	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: 30137 #3, #4, #5

Work Order # : 526802 **Project ID:** 725010112096

Lab Batch ID: 990323 **QC- Sample ID:** 526801-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/15/2016 **Date Prepared:** 03/15/2016 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00144	0.0962	0.0939	98	0.0962	0.0616	64	42	70-130	35	XF
Toluene	0.00209	0.0962	0.0978	99	0.0962	0.0651	65	40	70-130	35	XF
Ethylbenzene	<0.00192	0.0962	0.108	112	0.0962	0.0719	75	40	71-129	35	F
m,p-Xylenes	0.00228	0.192	0.227	117	0.192	0.153	79	39	70-135	35	F
o-Xylene	<0.00288	0.0962	0.108	112	0.0962	0.0717	75	40	71-133	35	F

Lab Batch ID: 990381 **QC- Sample ID:** 526801-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/15/2016 **Date Prepared:** 03/15/2016 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B 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	<25.0	998	921	92	1000	926	93	1	75-125	35	
C10-C28 Diesel Range Hydrocarbons	<25.0	998	1070	107	1000	1040	104	3	75-125	35	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

CHAIN OF CUSTODY RECORD

APEX

Office Location Midland

Project Manager Karolanne Toby

Laboratory: XENCO

Address: Midland, TX

Contact:

Phone:

PO/SO #: 725010112096

Sampler's Name: Georgiana McSwane

Sampler's Signature

Proj. No.: 725010112096

Project Name: 30137 #3, #4 & #5

No/Type of Containers: 7

ANALYSIS REQUESTED: BTEX 8021B; TPH GRO/DRO; Chloride

Lab use only
Due Date:
Temp. of coolers when received (C°): 2.9
1 | 2 | 3 | 4 | 5
Page 1 of 1

526802
~~526801~~ CO 3/15
Lab Sample ID (Lab Use Only)

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	TPH	Chl
S	3/14/16	1049		X	CS-1 (2015) (RE)		10'				X		X	X	
		1135			S-Wall (RE)		8'								X
		1152			CS-2 (2015) (RE)		14'						X	X	X
		1204		X	R.P. (RE)		13'								X
		1400	X		SP-4	—							X	X	X
		1240	X		SP-5	—							X	X	X
S	3/14/16	1245	X		SP-6	—					X		X	X	X

N.F.G. 3/15/16

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3/15/16	0840	Julian M	3-15-16	8:40
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: 03/15/2016 08:40:00 AM

Work Order #: 526802

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

Temperature Measuring device used : r8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.9
#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: Carley Owens — Date: 03/15/2016

Checklist reviewed by: Kelsey Brooks — Date: 03/15/2016

APPENDIX E

Initial C-141 Documentation

NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 24 2015
RECEIVED

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.

fAB1432841543
nAB1506228797

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, 30137 Gathering Lateral*	Facility Type: *Gas Gathering Pipeline*

Surface Owner *State of New Mexico*	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
O	*13*	*19S*	*28E*	*97*	*South*	*562*	*West*	*Eddy*

Latitude: *N 32.6540* **Longitude:** *W -104.1286*

NATURE OF RELEASE

Type of Release *Natural Gas, Pipeline Liquids*	Volume of Release: *1581 MCF, 3 BBL Liquids*	Volume Recovered: *N/A*
Source of Release *Pipeline Leak.*	Date and Hour of Occurrence *02/15/2015 @ 09:10 MST*	Date and Hour of Discovery *02/15/2015 @ 09:10 MST*
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? *NMOCD Reporting Hotline*	
By Whom? *Dina Babinski*	Date and Hour *02/15/2015 @ 12:43 MST*	
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 pipeline technician. Pipeline segment was clamped 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:

Printed Name: **Ivan W. Zirbes**

Title: Sr. **Director, Field Environmental**

E-mail Address: **snolan@eprod.com**

Date: *2-24-2015* Phone: **713-381-6595**

OIL CONSERVATION DIVISION

Approved by District Supervisor: Signed By

Approval Date: 3/3/15 Expiration Date: N/A

Conditions of Approval: Attached ☐

Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 4/3/15

2RP-2846

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
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1000 Rio Brazos Road, Aztec, NM 87410
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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.

fAB1432841543

nMLB1521930490

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, 30137 Gathering Lateral*	Facility Type: *Gas Gathering Pipeline*

Surface Owner *State of New Mexico*	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
O	*13*	*19S*	*28E*	*97*	*South*	*562*	*West*	*Eddy*

Latitude: *N 32.65386* **Longitude:** *W -104.12857*

NATURE OF RELEASE

Type of Release *Natural Gas, Pipeline Liquids*	Volume of Release: *1,257 MCF, 2 BBL Liquids*	Volume Recovered: *N/A*
Source of Release *Pipeline Leak.*	Date and Hour of Occurrence *04/29/2015 @ 10:05 MDT*	Date and Hour of Discovery *04/29/2015 @ 10:05 MDT*
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? *Mike Bratcher – NMOCD District 2*	
By Whom? *Osman De Leon*	Date and Hour *04/29/2015 @ 12:43 MDT*	
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 pumper passing by. Pipeline segment was clamped and blown down, and leaking portion was repaired following standard One-Call.

Describe Area Affected and Cleanup Action Taken.*

Liquid spill occurred within pipeline ROW. Clean-up activities will be carried out in accordance with Enterprise's General release Notification, Response and Remediation Plan according to housekeeping standards. Enterprise will maintain records of sampling results and disposal documentation, and will make available to NMOCD upon request.

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: Accepted as Initial Report only
Title: *Director, Field Environmental*	Approval Date: 8/7/15 / Expiration Date:
E-mail Address: *jefields@eprod.com*	Conditions of Approval: Remediation per OCD Rules and Guidelines / Attached ☐
Date: 3-15-2015 Phone: *713-381-6684*	

* Attach Additional Sheets If Necessary

2RP-3191

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.

fAB1432841543

nMLB1521930490

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, 30137 Gathering Lateral*	Facility Type: *Gas Gathering Pipeline*

Surface Owner	Mineral Owner	Lease No.
State of New Mexico	*NA - Pipeline*	*NA*

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	*13*	*19S*	*28E*	*97*	*South*	*562*	*West*	*Eddy*

Latitude: *N 32.65386* **Longitude:** *W -104.12857*

NATURE OF RELEASE

Type of Release *Natural Gas, Pipeline Liquids*	Volume of Release: *1,257 MCF, 8.5 BBL Liquids (updated)*	Volume Recovered: *N/A*
Source of Release *Pipeline Leak.*	Date and Hour of Occurrence *04/29/2015 @ 10:05 MDT*	Date and Hour of Discovery *04/29/2015 @ 10:05 MDT*
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? *Mike Bratcher – NMOCD District 2*	
By Whom? *Osman De Leon*	Date and Hour *04/29/2015 @ 12:43 MDT*	
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 pumper passing by. Pipeline segment was clamped and blown down, and leaking portion was repaired following standard One-Call.

Describe Area Affected and Cleanup Action Taken.*

Liquid spill occurred within pipeline ROW. Clean-up activities will be carried out in accordance with Enterprise's General release Notification, Response and Remediation Plan (dated March 9, 2015). Operations personnel originally estimated approximately 2 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 8.5 bbl pipeline liquids. NMOCD Reference 2RP-3191.

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: 8/21/15 Expiration Date:
E-mail Address: *jefields@eprod.com*	Conditions of Approval: Remediation per NMOCD Rules & Guidelines Attached ☐
Date: 8-12-2015 Phone: *713-381-6684*	

* Attach Additional Sheets If Necessary

2RP-3191

NM OIL CONSERVATION
ARTESIA DISTRICT
JUN 10 2015
RECEIVED

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.

fAB1432841543
nAB1516226673

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, 30137 Gathering Lateral*	Facility Type: *Gas Gathering Pipeline*

Surface Owner *State of New Mexico*	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
O	*13*	*19S*	*28E*	*70*	*South*	*388*	*West*	*Eddy*

Latitude: *N 32.653899* **Longitude:** *W -104.129186*

NATURE OF RELEASE

Type of Release *Natural Gas, Pipeline Liquids*	Volume of Release: *1,574 MCF, 3 BBL Liquids*	Volume Recovered: *N/A*
Source of Release *Pipeline Leak.*	Date and Hour of Occurrence *06/08/2015 @ 8:50 MDT*	Date and Hour of Discovery *06/08/2015 @ 9:38 MDT*
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? *Mike Bratcher – NMOCD District 2*	
By Whom? *Osman De Leon*	Date and Hour *06/08/2015 @ 9:38 MDT*	
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 Inspector. Pipeline segment was clamped and blown down, and leaking portion will be repaired following standard One-Call.

Describe Area Affected and Cleanup Action Taken.*

Liquid spill occurred within pipeline ROW. Clean-up activities will be carried out in accordance with Enterprise's General release Notification, Response and Remediation Plan according as defined in the housekeeping standards. Enterprise will maintain records of sampling results and disposal documentation, and will make available to NMOCD upon request.

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*	Signed By Mike Bratcher Approved by District Supervisor:
Title: *Director, Field Environmental*	Approval Date: 6/11/15 Expiration Date: N/A
E-mail Address: *jefields@eprod.com*	Conditions of Approval: FINAL Attached ☐
Date: 6-8-2015 Phone: *713-381-6684*	

* Attach Additional Sheets If Necessary

2RP-3044

NM OIL CONSERVATION
ARTESIA DISTRICT

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

JUL 07 2015

RECEIVED

Form C-141
Revised August 8, 2011

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

fAB1432841543
nAB1519449044

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, 30137 Gathering Lateral*	Facility Type: *Gas Gathering Pipeline*

Surface Owner *State of New Mexico*	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
O	*13*	*19S*	*28E*	*70*	*South*	*388*	*West*	*Eddy*

Latitude: *N 32.653899* **Longitude:** *W -104.129186*

NATURE OF RELEASE

Type of Release *Natural Gas, Pipeline Liquids*	Volume of Release: *1,532 MCF, 3 BBL Liquids*	Volume Recovered: *N/A*
Source of Release *Pipeline Leak.*	Date and Hour of Occurrence *07/02/2015 @ 8:50 MDT*	Date and Hour of Discovery *07/02/2015 @ 8:50 MDT*
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? *Mike Bratcher – NMOCD District 2* (Per e-mail)	
By Whom? *Osman De Leon*	Date and Hour *07/02/2015 @ 13:16 MDT* * 7/8/15 434pm	
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 Inspector. Pipeline segment was clamped and blown down, and leaking portion was repaired following standard One-Call.

Describe Area Affected and Cleanup Action Taken.*

Liquid spill occurred within pipeline ROW. Clean-up activities will be carried out in accordance with Enterprise's General release Notification, Response and Remediation Plan (dated March 9, 2015) as defined in the housekeeping standards. Enterprise will maintain records of sampling results and disposal documentation, and will make available to NMOCD upon request.

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 Signed By Mike Bratcher
Printed Name: *Jon E. Fields*	Approved by District Supervisor:
Title: *Director, Field Environmental*	Approval Date: 7/13/15 Expiration Date: N/A
E-mail Address: *jefields@eprod.com*	Conditions of Approval: FINAL Attached ☐
Date: 7/7/2015 Phone: *713-381-6684*	

* Attach Additional Sheets If Necessary

2RP-3100

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 206767

CONDITIONS

Operator: ENTERPRISE PRODUCTS OPERATING, LLC P.O. BOX 4324 HOUSTON, TX 77210	OGRID: 374092
	Action Number: 206767
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	4/18/2023