

CORRECTIVE ACTION REPORT

Property:

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

October 2015 Apex Project No. 7250715029.001

Prepared for:

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

Prepared by:

Karolanne Toby Project Geologist

Liz Scaggs, P.G. Division Manager

Apex TITAN, Inc., a subsidiary of Apex Companies, LLC 505 N Big Spring St., Ste 301A, Midland, TX 79701 T 432.695.6016 F 432.695.6017 www.apexcos.com PG License No. 50296 PE License No.F14073



TABLE OF CONTENTS

1.0 1.1 1.2	INTRODUCTION Site Description & Background Project Objective	1 1
2.0	SITE RANKING	2
3.0 3.1 3.2	RESPONSE ACTIONS Soil Remediation Activities Soil Sampling Program	3 3
4.0 4.1	DATA EVALUATION	1 4
5.0	FINDINGS AND RECOMMENDATIONS	ò

LIST OF APPENDICES

Appendix A:	Figure 1 – Topographic Map Figure 2 – Site Vicinity Map Figure 3 – Site Map
Appendix B:	Photographic Documentation
Appendix C:	Analytical Tables
Appendix D:	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E:	NMOCD C-141
Appendix F:	Waste Disposal Manifests



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1.0 INTRODUCTION

1.1 Site Description & Background

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

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

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

1.2 **Project Objective**

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



2.0 SITE RANKING

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

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

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

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

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

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



3.0 **RESPONSE ACTIONS**

3.1 Soil Remediation Activities

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

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

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

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

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

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

3.2 Soil Sampling Program

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

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



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

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

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

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

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

4.0 DATA EVALUATION

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

4.1 Excavation Confirmation Samples

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

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



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

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

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

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

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

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

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



5.0 FINDINGS AND RECOMMENDATIONS

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

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

- The primary objective of the corrective actions was to reduce the concentration of COCs in the on-Site soils to below the New Mexico EMNRD OCD *RALs* using the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.
- On-Site remediation included excavation of the affected area impacted by the release of natural gas pipeline liquids starting from the release point. The excavated area measures approximately nineteen (19) feet long by fifteen (15) feet wide with an approximate depth of nineteen (19) feet at the release point. Impacted soil was removed and collected into two (2) stockpiles on Site.
- The two (2) stockpiles on Site were transported to a state approved disposal facility, Lea Landfill, in Eunice, NM. The excavation was backfilled with non-impacted clean fill material and returned to approximate original grade.
- A total of five (5) initial confirmation soil samples were collected from the initial excavation for laboratory analyses. Based on analytical results, additional excavation was necessary. Four (4) additional confirmation soil samples were collected from the excavation. Subsequent to additional over-excavation based on laboratory analysis, three (3) additional confirmation soil samples were collected. Additional excavation was necessary in the vicinity of the release point based on laboratory analysis, and an additional confirmation soil sample was collected at the point of release.
- The final confirmation soil sample results indicate total benzene, BTEX, TPH GRO/DRO and chloride concentrations are below the applicable OCD RRALs of 10 mg/Kg, 50 mg/Kg, 1,000 mg/Kg and 500 mg/Kg, respectively, for the Site Total Ranking Score of 10.

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





APPENDIX A

Figures



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



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



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



APPENDIX B

Photographic Documentation



View of initial excavation, facing south.



View of excavation subsequent to additional excavation, facing northeast.



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





APPENDIX C

Analytical Tables



	TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS 1002 Line Release - 2										
								TPH	TPH	TPH	
Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	Total BTEX	GRO	DRO	GRO/DRO	Chloride (mg/Kg)
								(mg/Kg)	(mg/Kg)	(mg/Kg)	
New Mexico Oil Cor	nservation Division (N	MOCD) Recome	nded Remediatior	Action Levels	(RRALs) (Total Ra	nking Score: 10))		-		
New Mexico Ene Department, Oil C	ergy, Mineral & Natura Conservation Division Action Level	al Resources , Remediation	10	NE	NE	NE	50	NE	NE	1,000	500
			E	BACKGROUND	SAMPLE ANALYT	ICAL RESULTS		•	•		
BKG 1	3/23/2015	2	NS	NS	NS	NS	NS	NS	NS	NS	376
BKG 2	3/23/2015	3	NS	NS	NS	NS	NS	NS	NS	NS	563
				EXCAVATION S	AMPLE ANALYTI	CAL RESULTS					
N-Wall	3/23/2015	2.5	<0.0200	< 0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<50.0	2,200
N Wall RE	4/23/2015	3	NS	NS	NS	NS	NS	NS	NS	NS	1,080
N Wall	6/26/2015	3.2	NS	NS	NS	NS	NS	NS	NS	NS	<20.0
E-Wall	3/23/2015	2.5	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<50.0	3,250
E Wall RE	4/23/2015	3	NS	NS	NS	NS	NS	NS	NS	NS	<20.0
S-Wall	3/23/2015	2.5	0.158	3.67	4.98	21.9	30.71	1,400	757	2,157	6,030
S Wall RE	4/23/2015	3	NS	NS	NS	NS	NS	<4.00	<50.0	<50.0	<20.0
W-Wall	3/23/2015	2.5	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	4.17	<50.0	4.17	766
W Wall	6/26/2015	3.2	NS	NS	NS	NS	NS	NS	NS	NS	94.0
RP	3/23/2015	3	0.179	4.35	11.6	31.8	47.93	1,720	2,730	4,450	478
RP RE	4/23/2015	6	NS	NS	NS	NS	NS	8,440	2,940	11,380	NS
RP	6/26/2015	13.5	NS	NS	NS	NS	NS	1,480	1,650	3,130	NS
CS-1	8/27/2015	19	0.0274	0.0762	0.0125	0.184	0.300	15.6	<15.0	15.6	186
		-		STOCKPILE SA	AMPLE ANALYTIC	AL RESULTS	-	-	<u>.</u>		
SP	3/23/2015	NA	0.155	1.86	0.300	9.20	11.52	960	1,800	2,760	288
STP 1	6/26/2015	NA	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<50.0	<20.0
STP 2	6/26/2015	NA	1.57	10.8	2.34	25.2	39.91	482	767	1,249	377
STP-2-RE	8/27/2015	NA	0.0153	0.141	0.0401	0.586	0.782	276	1,050	1,330	267

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

-indicates overexcavated area

NE - Not Established

NS - Not Sampled

NA - Not Applicable

mg/Kg- milligrams per Kilogram



APPENDIX D

Laboratory Analytical Reports & Chain-of-Custody Documentation



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100

 P
 Lubbock, Texas 79424
 800-378-1296
 806

 El Paso, Texas 79922
 915

 Midland, Texas 79703
 432

 Suite 100
 Carroliton, Texas 75006
 972

 E-Mail: lab@traceanalysis.com
 WEB; www.traceanalysis.com
 WEB; www.traceanalysis.com

915-585-3443 FAX 915-585-4944 432-689-6301 FAX 432-689-6313 972-242-7750 s.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: April 8, 2015

Work Order: 15032410

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

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

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

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

This report consists of a total of 10 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Blain faft

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

Report Contents

Case Narrative	3
Analytical Report Sample 389403 (BKG 1) Sample 389404 (BKG 2)	4 4
Method Blanks	5
QC Batch 120549 - Method Blank (1)	5
Laboratory Control Spikes	6
QC Batch 120549 - LCS (1)	6
Matrix Spikes	7
QC Batch 120549 - MS (1)	7
Calibration Standards QC Batch 120549 - ICV (1) QC Batch 120549 - CCV (1)	8 8 8
Appendix	9
Report Definitions	9
Laboratory Certifications	9 9 9

Case Narrative

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

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

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

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

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

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

Analytical Report

Sample: 389403 - BKG 1

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 120549 102010	Ana Dat Sam	lytical Method: e Analyzed: ple Preparation:	SM 4500-Cl B 2015-04-06 2015-04-06	Prep Method: Analyzed By: Prepared By:	${ m N/A}$ EM EM
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			376	mg/Kg	5	4.00

Sample: 389404 - BKG 2

Laboratory: Midland Analysis: Chloride (Titration) QC Batch: 120549 Prep Batch: 102010		Ana Dat Sam	lytical Method: e Analyzed: ple Preparation:	SM 4500-Cl B 2015-04-06 2015-04-06	Prep Method: Analyzed By: Prepared By:	${ m N/A}$ EM EM
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			563	mg/Kg	5	4.00

Method Blanks

Method Blank (1)		QC Batch: 120549				
QC Batch: 120549 Prep Batch: 102010			Date Analyzed: QC Preparation:	2015-04-06 2015-04-06	Analyzed By: Prepared By:	${ m EM}$
				MDL		
Parameter		Flag	Cert	Result	Units	RL
Chloride				<3.85	m mg/Kg	4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 120549 Date Analyzed: 2015-04-06 A										alyzed By	: EM
Prep Batch: 102010	rep Batch: 102010 QC Preparation: 2015-04-06							Pre	pared By	: EM	
				LCS			Spike	Ma	atrix		Rec.
Param		\mathbf{F}	C I	Result	Units	Dil.	Amount	Re	esult	Rec.	Limit
Chloride				2630	$\mathrm{mg/Kg}$	5	2500	<	19.2	105 8	85 - 115
Percent recovery is b	ased on the spike	resu	lt. RPD	is based o	on the sp	pike and sp	ike duplica	ate resu	ılt.		
			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2720	mg/Kg	5	2500	$<\!19.2$	109	85 - 115	i 4	20

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

Matrix Spikes

Matrix Spike (MS-1) Spik	ed Sa	mple	: 390357								
QC Batch: 120549 Prep Batch: 102010			Date QC	e Analyze Preparati	ed: 20 ion: 20	15-04-06 15-04-06			Ana Prep	yzed By ared By:	EM EM
				MS			Spike	Ma	atrix		Rec.
Param		F	C I	Result	Units	Dil.	Amount	Re	esult Re	c. 1	Limit
Chloride				13300	mg/Kg	5	2500	10)600 10	8 78.	9 - 121
Percent recovery is based on the	e spike	resu	ılt. RPD	is based	on the s	pike and s	pike dupli	cate re	sult.		
			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			13600	mg/Kg	5	2500	10600	120	78.9 - 121	2	20

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

Calibration Standards

Standard (ICV-1)

QC Batch:	120549			Date A	Analyzed:	2015-04-06		Analy	Analyzed By: EM		
					ICVs	ICVs	ICVs	Percent			
					True	Found	Percent	Recovery	Date		
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Chloride				mg/Kg	100	100	100	85 - 115	2015-04-06		

Standard (CCV-1)

QC Batch:	120549			Date A	Analyzed:	2015-04-06		Analy	Analyzed By: EM		
					CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date		
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Chloride				mg/Kg	100	100	100	85 - 115	2015-04-06		

Work Order: 15032410 1002 Line Release-2 Page Number: 9 of 10

Appendix

Report Definitions

NameDefinitionMDLMethod Detection LimitMQLMinimum Quantitation LimitSDLSample Detection Limit

Laboratory Certifications

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

Standard Flags

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

Attachments

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.



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6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100

Lubbock, Texas 79424 Texas 79922 El Paso, Texas 79703 Midland, Carroliton. Texas 75006 E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

915-585-3443 FAX 915 • 585 • 4944 432-689-6301 FAX 432 • 689 • 6313 972-242 -7750

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: March 30, 2015

Work Or	der:	15032408

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

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

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

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

This report consists of a total of 30 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Blain Lepturch

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

Report Contents

Case Narrative	5
Analytical Report Sample 389397 (N-Wall) Sample 389398 (E-Wall) Sample 389399 (S-Wall) Sample 389400 (W-Wall) Sample 389401 (RP) Sample 389402 (SP)	6 7 8 10 11 13
Method Blanks Image: Constraint of the system of the s	15 15 15 15 16 16
Laboratory Control Spikes Image: Contro	 18 18 18 19 19 20
Matrix Spikes 2 QC Batch 120238 - MS (1)	 22 22 22 22 23 23 24
Calibration Standards 2 QC Batch 120238 - ICV (1)	 26 26 26 26 26 27 27 27 28 28
QC Batch 120368 - CCV (2)	20 28

Page 3 of 30

QC Batch 120368 - CCV (3)	28
Appendix	29
Report Definitions	29
Laboratory Certifications	29
Standard Flags	29
Attachments	29

Case Narrative

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

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

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

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

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

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

Analytical Report

Sample: 389397 - N-Wall

Laboratory:	Midland											
Analysis:	is: BTEX			Analytical	l Method	: S 80	21B			Prep Method	: S	5035
QC Batch:	120317			Date Anal	lyzed:	2015	6-03-27	7		Analyzed By:	A	ΑK
Prep Batch:	101767			Sample Pi	reparation	n: 2015	5-03-26	3		Prepared By:	A	AK
				-		RL						
Parameter		Flag		Cert		Result		Units		Dilution		RL
Benzene		U		1	<	< 0.0200		mg/Kg		1	0	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
									Spile	Porcont	Por	ovorv
Surrogate			Flag	Cort	Result	Unit	c I	Dilution	Amount	Becovery	Li	mite
Trifluorotolu	ene (TFT)		riag	OCIU	1.86	mg/K	5 1 7 0	1	2.00		70	<u>- 130</u>
4-Bromofluor	obenzene (4-BFB)				2.08	mg/K	-5 ζσ	1	$\frac{2.00}{2.00}$	104	70	- 130
Sample: 38 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	9397 - N-Wall Midland Chloride (Titratio 120238 101731	n) Flag		Anal Date Samj Cert	ytical Me Analyze ple Prepa	ethod: d: ration: RL Result	SM 4 2015- 2015-	1500-Cl B -03-24 -03-24 Units	5	Prep Metho Analyzed B Prepared B Dilution	od: y: y:	N/A EM EM RL
Chloride						2200		mg/Kg	S	5		4.00
Sample: 38 Laboratory: Analysis: QC Batch: Prep Batch:	9397 - N-Wall Midland TPH DRO - NEW 120250 101727	7		Ana Dat San	ulytical M e Analyze uple Prep	lethod: ed: aration:	S 80 2015 2015)15 D 5-03-25 5-03-24		Prep Metho Analyzed B Prepared B	od: y:	N/A SC SC
i top Baton.	101121			San	ipic i icp		2010	00-24		i tepated D	<i>y</i> ·	50

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

Report Date: March 30, 2015 7250715029.001					Work Order: 15032408 1002 Line Release-2						Page Number: 7 of 30		
Surrogate		Flag	Ce	rt	Result	Units	Dilı	ution	Sp Am	ike	Percent Becovery	Recovery Limits	
n-Tricosane	Qsr	Qsr	00		131	mg/Kg	5	1	10	00	131	70 - 130	
Sample: 389	9397 - N-	Wall											
Laboratory: Midland Analysis: TPH GRO QC Batch: 120318 Prep Batch: 101767				Analytical Method:S 8015 DDate Analyzed:2015-03-27Sample Preparation:2015-03-26					Prep Metho Analyzed B Prepared B	od: S 5035 y: AK y: AK			
							RL						
Parameter			Flag		Cert	I	Result		Units		Dilution	RL	
GRO			U		1		<4.00		mg/Kg		1	4.00	
Surrogate				Flag	Cert	Result	Unite	Dilu	tion	Spike Amount	Percent	Recovery Limits	
Trifluorotolue	ne (TFT)			riag	OCIU	1.92	mg/Kg	1		2.00	96	70 - 130	
4-Bromofluor	obenzene (4-BFB)				2.01	mg/Kg	1	L	2.00	100	70 - 130	

Sample: 389398 - E-Wall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 120317 101767		Analytica Date Ana Sample P	l Method: lyzed: reparation	S 8021F 2015-03 : 2015-03	3 -27 -26		Prep Method Analyzed By: Prepared By:	: S 5035 AK AK
					RL				
Parameter		Flag	Cert		Result	Units		Dilution	RL
Benzene		U	1	<	0.0200	mg/Kg		1	0.0200
Toluene		U	1	<	0.0200	m mg/Kg		1	0.0200
Ethylbenzene		U	1	<	0.0200	$\mathrm{mg/Kg}$		1	0.0200
Xylene		U	1	<	0.0200	mg/Kg		1	0.0200
Surrogate		Fl	ag Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolue	ene (TFT)		-	1.83	mg/Kg	1	2.00	92	70 - 130
4-Bromofluor	obenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	70 - 130
Report Date: March 30, 2015 7250715029.001	Work Order: 15032408 1002 Line Release-2	Page Number: 8 of 30							
---	---	----------------------							
Sample: 389398 - E-Wall									

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 120238 101731	Analyt Date A Sample	tical Method: Analyzed: e Preparation:	SM 4500-Cl B 2015-03-24 2015-03-24	Prep Method: Analyzed By: Prepared By:	${ m N/A} { m EM} { m EM}$
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			3250	m mg/Kg	5	4.00

Sample: 389398 - E-Wall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DR 120250 101727	RO - NE'	W	Ana Date Sam	lytical Metho e Analyzed: ple Preparati	d: S 8015 2015-0 on: 2015-0	D 3-25 3-24	Prep Met Analyzed Prepared	hod: N/A By: SC By: SC
					F	RL			
Parameter			Flag	Cert	Resu	ılt	Units	Dilution	RL
DRO			U	1	<50).0	m mg/Kg	1	50.0
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		131	mg/Kg	1	100	131	70 - 130

Sample: 389398 - E-Wall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 120318 101767			Analytic Date An Sample l	al Methoo alyzed: Preparatio	l: S 8015 2015-0 on: 2015-0	5 D)3-27)3-26		Prep Methoo Analyzed By Prepared By	l: S 5035 : AK : AK
						RL				
Parameter		Flag		Cert		Result	Uni	ts	Dilution	RL
GRO		U		1		<4.00	mg/K	g	1	4.00
Surrogate			Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolue	ene (TFT)		- 0		1.95	mg/Kg	1	2.00	98	70 - 130
4-Bromofluor	obenzene (4-BFB)				1.98	mg/Kg	1	2.00	99	70 - 130

Report Date: March 30, 2015	Work Order: 15032408	Page Number: 9 of 30
7250715029.001	1002 Line Release-2	

Sample: 389399 - S-Wall

4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		16.2	mg/Kg	2	4.00	405	70 - 130
Trifluorotoluene (TFT)				3.14	mg/Kg	2	4.00	78	70 - 130
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
							Spike	Percent	Recovery
Xylene			1		21.9	$\mathrm{mg/Kg}$		2	0.0200
Ethylbenzene			1		4.98	$\mathrm{mg/Kg}$		2	0.0200
Toluene			1		3.67	mg/Kg		2	0.0200
Benzene			1	(0.158	mg/Kg		2	0.0200
Parameter	Flag		Cert	F	Result	Units		Dilution	RL
					RL				
Prep Batch: 101767		Sa	mple Pr	eparation:	2015-03-	-26		Prepared By:	AK
QC Batch: 120317		Da	ate Anal	yzed:	2015-03-	-27		Analyzed By	: AK
Analysis: BTEX		Ar	nalytical	Method:	S $8021B$			Prep Method	: S 5035
Laboratory: Midland									

Sample: 389399 - S-Wall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titrati 120238 101731	on)	Ar Da Sa	nalytical Method: ate Analyzed: mple Preparation	SM 4500-Cl 1 2015-03-24 : 2015-03-24	3 Prep M Analyz Prepar	Method: N/A zed By: EM zed By: EM
				RI	1		
Parameter		Flag	Cer	t Resul	t Un	its Dilution	RL
Chloride				6030) mg/	Kg 5	4.00

Sample: 389399 - S-Wall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DF 120250 101727	RO - NEV	W	Anal Date Samj	ytical Metho Analyzed: ple Preparati	d: S 8015 2015-0 on: 2015-0	D 3-25 3-24	Prep Met Analyzed Prepared	bod: N/A By: SC By: SC
					I	RL			
Parameter			Flag	Cert	Rest	ılt	Units	Dilution	RL
DRO				1	7	57	m mg/Kg	1	50.0
Commo and a			Cont	Darrelt	TT:+-	D:1	Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	Qsr	Qsr		147	m mg/Kg	1	100	147	70 - 130

Report Date: March 30, 2015 7250715029.001			W	Vork Orde 1002 Line	r: 15032408 Release-2	8		Page Numb	er: 10 of 30
Sample: 389399 - S-Wall									
Laboratory: Midland Analysis: TPH GRO QC Batch: 120318 Prep Batch: 101767		A L S	Analytica Date Ana Cample P	l Method lyzed: reparation	: S 8015 2015-03 n: 2015-03	D 3-27 3-26		Prep Metho Analyzed B Prepared B	d: S 5035 y: AK y: AK
					RL				
Parameter	Flag		Cert	F	Result	Unit	s	Dilution	RL
GRO			1		1400	$\mathrm{mg/K}_{\mathrm{s}}$	r S	20	4.00
							Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)				36.4	mg/Kg	20	40.0	91	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		72.0	$\mathrm{mg/Kg}$	20	40.0	180	70 - 130

Sample: 389400 - W-Wall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 120317 101767		Analytical Date Anal Sample Pr	l Method: lyzed: reparation:	S 8021E 2015-03 2015-03	3 -27 -26		Prep Method: Analyzed By: Prepared By:	S 5035 AK AK
					RL				
Parameter		Flag	Cert		Result	Unit	3	Dilution	RL
Benzene		U	1	<	0.0200	mg/Kg	r S	1	0.0200
Toluene		U	1	<	0.0200	mg/K_{2}	r S	1	0.0200
Ethylbenzene		U	1	<	0.0200	mg/K_{2}	r S	1	0.0200
Xylene		U	1	<	0.0200	$\mathrm{mg/Kg}$	r S	1	0.0200
Surrogate		Fla	g Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolue	ene (TFT)		5	1.75	mg/Kg	1	2.00	88	70 - 130
4-Bromofluor	obenzene (4-BFB)			2.03	mg/Kg	1	2.00	102	70 - 130

Sample: 389400 - W-Wall

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

 $continued \dots$

Report Date: 7250715029.0	March 30, 2015 01			V	Vork Order 1002 Line	: 15032 Release	408 -2			Page Numb	per: 11 of 30
sample 38940	$0 \ continued \ldots$										
						RL					
Parameter		Flag		Cert	R	esult		Unit	S	Dilution	RL
						RL					
Parameter		Flag		Cert	R	esult		Unit	S	Dilution	RL
Chloride						766		mg/K	g	5	4.00
Sample: 389	9400 - W-Wall										
Laboratory:	Midland										
Analysis:	TPH DRO - NE	W		Ana	lytical Met	hod:	S 8015	D		Prep Met	hod: N/A
QC Batch:	120250			Dat	e Analyzed	:	2015-0	3-25		Analyzed	By: SC
Prep Batch:	101727			San	ple Prepar	ation:	2015-03	3-24		Prepared	By: SC
						RL					
Parameter		Flag		Cert	R	esult		Unit	S	Dilution	RL
DRO		U		1	<	< 50.0		mg/K	g	1	50.0
								S	pike	Percent	Recovery
Surrogate	Flag	Cert	F	Result	Units	Dil	ution	Ar	nount	Recovery	Limits
n-Tricosane				121	m mg/Kg		1		100	121	70 - 130
Sample: 389	9400 - W-Wall										
Laboratory:	Midland					G					
Analysis:	TPH GRO			Analytic	al Method:	S 80	15 D			Prep Metho	od: S 5035
QC Batch:	120318			Date An	alyzed:	2015	-03-27			Analyzed E	by: AK
Prep Batch:	101767			Sample I	reparation	: 2015	-03-26			Prepared B	y: AK
_				~	_	RL					
Parameter		Flag		Cert	R	esult		Unit	S	Dilution	<u> </u>
GRO				1		4.17		mg/K	g	1	4.00
									Spike	Percent	Recovery
Surrogate			Flag	Cert	Result	Units	Dil	ution	Amount	Recovery	Limits
Trifluorotolue	ne (TFT)				1.83	mg/Kg		1	2.00	92	$\overline{70 - 130}$

1.92

mg/Kg

1

2.00

96

70 - 130

4-Bromofluorobenzene (4-BFB)

Report Date: March 30, 2015 7250715029.001			W	/ork Orden 1002 Line		Page Number	:: 12 of 30		
Sample: 389401 - RP									
Laboratory: Midland Analysis: BTEX QC Batch: 120317 Prep Batch: 101767		Aı Da Sa	nalytical ate Analy umple Pre	Method: yzed: eparation:	S 8021B 2015-03- 2015-03-	27 26		Prep Method Analyzed By: Prepared By:	: S 5035 AK AK
					RL				
Parameter	Flag		Cert	F	lesult	Units		Dilution	RL
Benzene			1	().179	mg/Kg		5	0.0200
Toluene			1		4.35	m mg/Kg		5	0.0200
Ethylbenzene			1		11.6	$\mathrm{mg/Kg}$		5	0.0200
Xylene			1		31.8	mg/Kg		5	0.0200
a.							Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)				9.06	m mg/Kg	5	10.0	91	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		24.6	m mg/Kg	5	10.0	246	70 - 130

Sample: 389401 - RP

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titrati 120238 101731	on)	Anal Date Samp	vtical Method: Analyzed: le Preparation:	SM 4500-Cl B 2015-03-24 2015-03-24	Prep Method: Analyzed By: Prepared By:	${ m N/A} { m EM} { m EM}$
				RL			
Parameter		Flag	Cert	Result	Units	Dilution	RL
Chloride				478	mg/Kg	5	4.00

Sample: 389401 - RP

Laboratory: Analysis: QC Batch: Prep Batch:	 Midland TPH DRO - NEW 120250 101727 			Anal Date Samj	ytical Metho Analyzed: ple Preparat	od: S 8015 2015-0 ion: 2015-0	D 3-25 3-24	Prep Meth Analyzed I Prepared I	od: N/A By: SC By: SC
]	RL			
Parameter			Flag	Cert	Res	ult	Units	Dilution	RL
DRO				1	27	30	mg/Kg	1	50.0
Surrogato		Flag	Cort	Rosult	Unite	Dilution	Spike	Percent	Recovery
Surrogate		гıag	Cert	Result	Units	Dilution	Amount	necovery	Linnts
n-Tricosane	Qsr	Qsr		201	m mg/Kg	1	100	201	70 - 130

Report Date: March 30, 2015 7250715029.001		Work Order: 15032408 1002 Line Release-2						Page Numbe	r: 13 of 30
Sample: 389401 - RP									
Laboratory: Midland		٨	nolytics	Mathad	. C 9015	D		Prop Mathad	. S 5025
Analysis. 1711 GRO		л Г	narytica	alwzed.	2015_0	D 3_97		Analyzed By	· AK
Prep Batch: 101767		S	ample F	Prepared By	AK				
					RL				
Parameter	Flag		Cert	I	Result	Units	5	Dilution	RL
GRO			1		1720	mg/Kg	5	20	4.00
							Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)				37.5	mg/Kg	20	40.0	94	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		80.5	mg/Kg	20	40.0	201	70 - 130

Sample: 389402 - SP

Laboratory:	Midland									
Analysis:	BTEX		Aı	nalytical	Method:	S 8021B			Prep Method	S 5035
QC Batch:	120368		Da	ate Anal	yzed:	2015-03-	-30		Analyzed By:	AK
Prep Batch:	101813		Sample Preparation:			2015-03-	-27		Prepared By:	AK
						RL				
Parameter		Flag		Cert	F	Result	Units		Dilution	RL
Benzene				1	(0.155	mg/Kg		5	0.0200
Toluene				1		1.86	$\mathrm{mg/Kg}$		5	0.0200
Ethylbenzene				1	(0.300	$\mathrm{mg/Kg}$		5	0.0200
Xylene				1		9.20	$\mathrm{mg/Kg}$		5	0.0200
								Spike	Percent	Recovery
Surrogate			Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)				8.52	mg/Kg	5	10.0	85	70 - 130
4-Bromofluor	obenzene (4-BFB)	Qsr	Qsr		14.0	$\mathrm{mg/Kg}$	5	10.0	140	70 - 130

Sample: 389402 - SP

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B $$	Prep Method:	N/A
QC Batch:	120302	Date Analyzed:	2015-03-26	Analyzed By:	EM
Prep Batch:	101782	Sample Preparation:	2015-03-26	Prepared By:	$\mathbf{E}\mathbf{M}$
-				 1	

continued ...

Report Date: March 30, 2015 V 7250715029.001			Work Order: 15032408 1002 Line Release-2					Page Number: 14 of 30				
sample 38940	02 continued	!										
Parameter			Flag		Cert]	RL Result		Uni	ts	Dilution	RL
Parameter			Flag		Cert]	RL Result		Uni	ts	Dilution	RL
Chloride							288		mg/K	g	5	4.00
Sample: 38	9402 - SP											
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRC 120250 101727) - NEV	V		Ana Dat San	alytical Me e Analyze aple Prepa	ethod: d: aration:	S 8015 2015-0 2015-0	D 3-25 3-24		Prep Me Analyzed Prepared	thod: N/A l By: SC l By: SC
Parameter			Flag		Cert	1	RL Result		Uni	ts	Dilution	BL
DRO			1 1008		1		1800		mg/K	g	1	50.0
Surrogate		Flag	Cer	·t	Result	Units	D	ilution	A	Spike mount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr			185	mg/Kg	в. 5	1		100	185	70 - 130
Sample: 38	9402 - SP											
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRC 120318 101767)			Analytic Date An Sample I	al Method alyzed: Preparatio	l: S 80 201 n: 201)15 D 5-03-27 5-03-26			Prep Meth Analyzed I Prepared I	od: S 5035 3y: AK 3y: AK
Parameter			Flag		Cert]	RL Result		Uni	ts	Dilution	RL
GRO					1		960		mg/K	g	20	4.00
Surrogate				Flag	Cert	Result	Units	Dil	ution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluor	ene (TFT) obenzene (4	-BFB)				$36.2 \\ 59.1$	mg/K mg/K	g g	20 20	$40.0 \\ 40.0$	90 148	70 - 130 70 - 130

Method Blanks

Method Blank (1)	QC Batch: 120238				
QC Batch: 120238 Prep Batch: 101731		Date Analyzed: QC Preparation:	2015-03-24 2015-03-24	Analyzed By Prepared By:	${ m EM}$
Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	m mg/Kg	4

Method Bla	ank (1)	QC Ba	atch: 120250								
QC Batch: Prep Batch:	$120250 \\ 101727$			Date A QC Pr	Analyzed: reparation:	2015-03-25 2015-03-24			Analy: Prepar	zed By: S red By: S	SC
_					~		MDL				
Parameter			Flag		Cert		Result		Units]	RL
DRO					1		<7.41		m mg/Kg		50
Surrogate		Flag	Cert	Result	Units	Dilutio	n A	Spike mount	Percent Recovery	Recove Limit	ery ts
n-Tricosane	Qsr	Qsr		132	mg/Kg	1		100	132	70 - 13	30

Method Bla	ank (1)	QC Batch: 120302					
QC Batch: Prep Batch:	$120302 \\ 101782$		Date Analyzed: QC Preparation:	2015-03-26 2015-03-26		Analyzed By: Prepared By:	EM EM
Parameter		Flag	Cert	M Res	DL sult	Units	RL
Chloride				<3	B.85 n	ng/Kg	4

Report Date: March 30 7250715029.001	Work Orde 1002 Line	er: 1503240 e Release-2)8		Page Numb	per: 16 of 30		
Method Blank (1)	QC Batch: 120317							
QC Batch: 120317		Date Analyzed:	2015-03-2	27	Analyzed By: Ak			
Prep Batch: 101767		QC Preparation:	2015-03-2	26		Prepared By:		
				MDL				
Parameter	Flag	Cert		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	
					Spike	Percent	Recovery	
Surrogate	Flag	Cert Result	Units	Dilution	Amount	Recovery	Limits	
Trifluorotoluene (TFT)		2.01	mg/Kg	1	2.00	100	70 - 130	
4-Bromofluorobenzene (4-BFB)		1.95	mg/Kg	1	2.00	98	70 - 130	

Method Blank (1) QC Batch: 120318

QC Batch: Prep Batch:	$\frac{120318}{101767}$		Date A QC Pr	nalyzed: eparation:	2015-03-2 2015-03-2	7 3		Analyzed Prepared	l By: AK l By: AK
						MDL			
Parameter		Flag		Cert		Result		Units	RL
GRO				1		$<\!2.32$		mg/Kg	4
							Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)			1.96	mg/Kg	1	2.00	98	70 - 130
4-Bromofluor	robenzene (4-BFB)			1.84	$\mathrm{mg/Kg}$	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 120368

QC Batch:	120368		Date Analyzed:	2015-03-30	Analyzed By:	AK
Prep Batch:	101813		QC Preparation:	2015-03-27	Prepared By:	AK
				MDL		
Parameter		Flag	Cert	Result	Units	RL
Benzene			1	< 0.00533	mg/Kg	0.02
Toluene			1	< 0.00645	m mg/Kg	0.02
Ethylbenzene	9		1	< 0.0116	mg/Kg	0.02
				1. 1		

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Report Date: March 30, 2015 7250715029.001		,	Work Orde 1002 Line		Page Numb	er: 17 of 30		
method blank continued								
					MDL			
Parameter	Flag		Cert		Result		Units	RL
Xylene			1		< 0.00874]	mg/Kg	0.02
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:	120238	Date Analyzed: 2015-03-24 Analy										
Prep Batch:	101731			QC	Preparati	Pre	pared By	y: EM				
					LCS			Spike	M	atrix		Rec.
Param			F	C I	Result	Units	Dil.	Amount	\mathbf{R}	esult	Rec.	Limit
Chloride					2490	mg/Kg	5	2500	<	19.2	100	85 - 115
Percent recov	very is based on the s	pike	resu	lt. RPD	is based	on the sp	oike and sp	ike duplic	ate resi	ult.		
				LCSD			Spike	Matrix		Rec.		RPD
Param		\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride				2680	mg/Kg	5	2500	<19.2	107	85 - 11	5 7	20

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

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:	120250 101727	00250Date Analyzed:2015-03-25Analyzed11727QC Preparation:2015-03-24Prepared											
					LCS			Spike	Mε	atrix		Rec.	
Param			F	C	Result	Units	Dil.	Amount	Re	sult	Rec.	Limit	
DRO				1	272	mg/Kg	1	250	<'	7.41	109	70 - 130	
Percent recov	very is based on the s	pike	resul	t. RPD	is based o	on the sp	oike and sp	ike duplica	ate resu	ılt.			
				LCSD			Spike	Matrix		Rec.		RPD	
Param		\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit	
DRO			1	289	mg/Kg	1	250	<7.41	116	70 - 13	0 6	20	
Percent recov	very is based on the s	pike	resul	t. RPD	is based of	on the sp	ike and sp	ike duplica	ate resu	ılt.			

Sumorata	LCS Begult	LCSD Pogult	Unita	Dil	Spike A mount	LCS Boo	LCSD	Rec.
n-Tricosane	123	122	mg/Kg	1 1	100 Amount	123	122	70 - 130

Report Date 7250715029.0			Work 1002	Order: 150 2 Line Relea		Page Number: 19 of 30					
Laboratory	Control Spike (LC	S-1)									
QC Batch: Prep Batch:	120302 101782		D Q	eate Analyz C Preparat	ed: 2015- tion: 2015-		Analyzed By: EM Prepared By: EM				
				LCS			Spike	Matrix		Rec.	
Param		\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	
Chloride				2500	mg/Kg	5	2500	<19.2	100	85 - 115	
Percent recov	very is based on the sp	ike resu	ılt. RI	PD is based	l on the spil	ke and sj	pike duplicat	e result.		DDD	

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

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

Laboratory Control Spike (LCS-1)

QC Batch:	120317	Date Analyzed:	2015-03-27	Analyzed By:	$\mathbf{A}\mathbf{K}$
Prep Batch:	101767	QC Preparation:	2015-03-26	Prepared By:	AK

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

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

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

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

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

Report Date: March 30, 2015 7250715029.001		Work Order: 15032408 1002 Line Release-2							Р	age Nı	umber:	20 of 30
Laboratory Control Spike (LC	S- 1)											
QC Batch: 120318		1	Date Ana	lyzed:	201	5-03-27				Anal	yzed By	y: AK
Prep Batch: 101767		(QC Prepa	aration:	201	.5-03-26				Prep	ared By	7: AK
			LCS				Spi	ke	Matrix			Rec.
Param	F	\mathbf{C}	Resul	t U	nits	Dil.	Amo	ount	Result	R	ec.	Limit
GRO		1	23.8	mg	g/Kg	1	20	.0	$<\!2.32$	1	19	70 - 130
Percent recovery is based on the sp	oike re	sult. R	PD is ba	sed on t	he sp	oike and	spike du	plicate	result.			
		LC	SD			Spike	Matr	ix	R	lec.		RPD
Param	F (C Res	sult U	nits I	Dil.	Amount	t Resu	lt Re	ec. Li	mit	RPD	Limit
GRO		1 21	.0 mg	g/Kg	1	20.0	<2.3	3 2 10	$05 70 \cdot 10^{-1}$	- 130	12	20
Percent recovery is based on the sp	oike re	sult. R	PD is ba	sed on t	he sp	oike and	spike du	plicate	result.			
			LCS	LCSD				Spiko	ICS	τc	תפי	Roc
Surrogate			Result	Result	1	Inits	Dil 4	Amount	Bec	R	ec	Limit
Trifluorotoluene (TFT)			1.93	1.92	m	or/Kø	1	$\frac{11100110}{2.00}$	96	(<u></u> 96	$\frac{11110}{70 - 130}$
4-Bromofluorobenzene (4-BFB)			1.90	1.82	m	e/Kg	1	2.00	95	Ģ)1	70 - 130
Laboratory Control Spike (LC	S-1)											
QC Batch: 120368		I	Date Ana	lvzed:	201	5-03-30				Anal	vzed B	v: AK
Prep Batch: 101813		(QC Prepa	aration:	201	5-03-27				Prep	ared By	7: AK
			LCS				Spike	e	Matrix			Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Un	its	Dil.	Amou	nt	Result	R	ec.	Limit
Benzene		1	1.79	mg/	/Kg	1	2.00	<	< 0.00533	. (90	70 - 130
Toluene		1	1.76	mg/	/Kg	1	2.00	<	< 0.00645	8	38	70 - 130
Ethylbenzene		1	1.73	mg/	/Kg	1	2.00	~	< 0.0116	8	36	70 - 130
Xylene		1	5.28	mg/	/Kg	1	6.00	<	< 0.00874	. 8	38	70 - 130
Percent recovery is based on the sp	oike re	sult. R	PD is ba	sed on t	he sp	oike and	spike du	plicate	result.			

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

1

6.00

mg/Kg

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

5.41

1

Xylene

 $continued \dots$

90

70 - 130

2

20

< 0.00874

Report Date: March 30, 2015 7250715029.001	Pag	Page Number: 21 of 30						
control spikes continued								
	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.66	1.70	mg/Kg	1	2.00	83	85	70 - 130
4-Bromofluorobenzene (4-BFB)	1.91	1.92	mg/Kg	1	2.00	96	96	70 - 130

Matrix Spikes

Matrix Spike (MS-1)	Spiked Sampl	le: 38938	8							
OC Batch: 120238		Da	te Analyz	ed· 201	5-03-24			Anal	vzed By	· EM
Prep Batch: 101731		Q	C Preparat	ion: 201	5-03-24			Prep	ared By	: EM
1		Ŭ	1					1	v	
			MS			Spiko	Ma	triv		Boc
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	Res	sult Red		Limit
Chloride			2680	mg/Kg	5	2500	<1	9.2 10'	7 78	.9 - 121
Percent recovery is based	on the spike res	sult. RP	D is based	on the s	pike and s	pike duplic	ate res	ult.		
		MSD			Spike	Matrix		Rec.		RPD
Param	F C	Resul	t Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		2780	mg/Kg	<u>5</u>	2500	<19.2	111	78.9 - 121	4	20
Percent recovery is based	on the spike res	sult. RP	D is based	on the s	pike and s	pike duplic	ate res	ult.		
Matrix Spike (xMS-1) QC Batch: 120250 Prep Batch: 101727	Spiked Sam	ple: 3893 Da Qe	884 ate Analyz C Prepara	ed: 20 tion: 20	15-03-25 15-03-24			Ana Prej	lyzed B pared B	y: SC y: SC
			MS			Spike	М	atrix		Rec.
Param	F	\mathbf{C}	Result	Units	Dil.	Amount	R	esult R	ec.	Limit
DRO		1	253	mg/Kg	1	250	<	7.41 1	01	70 - 130
Percent recovery is based	on the spike res	sult. RP	D is based	on the s	pike and s	pike duplic	ate res	ult.		
		MSE)		Spike	Matrix		Rec.		RPD
Param	F C	Resul	lt Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	1	238	mg/K	g 1	250	<7.41	95	70 - 130	6	20
Percent recovery is based	on the spike res	sult. RP	D is based	on the s	pike and s	pike duplic	ate res	ult.		
	MS	Ν	ISD			Spike	Ν	IS MS	D	Rec.
Surrogate	Result	t Re	esult	Units	Dil.	Amount	Re	ec. Re	с.	Limit
n-Tricosane	114	1	.05 1	ng/Kg	1	100	1	14 10	5	70 - 130

Report Date: March 30, 201 7250715029.001	5		Work (1002	Drder: 1 Line Re	5032408 elease-2	032408 Page Number: 23 c ease-2					
Matrix Spike (MS-1) S	piked Samp	le: 389402									
QC Batch: 120302		Dat	e Analyze	ed: 20	15-03-26			Anal	lyzed By	: EM	
Prep Batch: 101782		QC	Preparati	lon: 20	15-03-26			Prep	ared By	: EM	
			MS			Spike	Ma	ıtrix		Rec.	
Param	F	C I	Result	Units	Dil.	Amount	Re	sult Re	c	Limit	
Chloride			2600	mg/Kg	5	2500	<1	19.2 10	4 78	.9 - 121	
Percent recovery is based on	the spike re	sult. RPD	is based	on the s	spike and s	spike dupli	cate res	sult.			
		MSD			Spike	Matrix		Rec.		RPD	
Param	F C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit	
Chloride		2600	mg/Kg	5	2500	$<\!19.2$	104	78.9 - 121	0	20	
Percent recovery is based on	the spike re	sult. RPD) is based	on the s	spike and s	spike dupli	cate res	sult.			
Matrix Spike (MS-1) S	piked Samp	le: 389397									
QC Batch: 120317		Dat	e Analyze	ed: 20	15-03-27			Ana	lyzed By	: AK	

• V	
Prep Batch: 101767 QC Preparation: 2015-03-26 Pre	epared By: AK

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

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

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

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

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

Report Date: March 30, 2015 7250715029.001				Work 1002	Order: 2 2 Line Re	15032408 elease-2	Page Number: 24 of 30					
Matrix Spike (MS-1) Spike	ed Sai	nple	: 389397	7								
QC Batch: 120318 Prep Batch: 101767			Dat QC	te Analyz Prepara	zed: 20 tion: 20)15-03-27)15-03-26			Ana Prej	lyzed By bared By	v: AK v: AK	
D		Б	C	MS	T T •/	וית	Spike	e M	latrix		Rec.	
CBO		Г	0	16.8	Units mg/K	$\frac{1}{\sigma}$ Dil.	Amoui 20.0	nt R	$\frac{1}{2}$	$\frac{\text{tec.}}{84}$	$\frac{\text{Limit}}{70 - 130}$	
Persont recovery is based on the	anileo	20011	1 1+ DDT	ia hago	d on the	g 1	anilto dunl	icato ros	.2.02	04	10 - 150	
referent recovery is based on the	spike	resu	III. NFL	J IS Dased	1 on the	spike and	spike dupi	icate res	sunt.			
			MSD			Spike	Matrix		Rec.		RPD	
Param	F	С	Result	Unit	s Dil.	Amount	t Result	Rec.	Limit	RPD	Limit	
GRO		1	17.3	mg/K	kg l	20.0	<2.32	86	70 - 130	3	20	
Percent recovery is based on the	spike	resu	lt. RPI) is based	d on the	spike and	spike dupl	icate res	ult.			
			Ν	MS	MSD		C L	Spike	MS I	MSD	Rec.	
Surrogate			Re	esult I	Result	Units	Dil. A	mount	Rec.	Rec.	Limit	
Trifluorotoluene (TFT)			1	.82	1.84	mg/Kg	1	2	91	92	70 - 130	
4-Bromofluorobenzene (4-BFB)			1	.99	2.04	mg/Kg	1	2	100	102	70 - 130	
Matrix Spike (MS-1) Spike QC Batch: 120368 Prep Batch: 101813	ed Sai	nple	: 389422 Dat	e Analyz Prepara	zed: 20)15-03-30			Ana Prei	lyzed By	7: AK	
Tiep Daten. 101015			QU	перага		10 00 21			110	Jarea Dy		
Param		F	CI	MS Result	Units	Dil.	Spike Amount	Ma Re	atrix esult l	Rec.	Rec. Limit	
Benzene			1	1.67	mg/Kg	1	2.00	<0.	00533	84	70 - 130	
Toluene			1	1.69	mg/Kg	1	2.00	< 0.	00645	84	70 - 130	
Ethylbenzene			1	1.77	$\mathrm{mg/Kg}$	1	2.00	<0	.0116	88	70 - 130	
Xylene			1	5.37	mg/Kg	1	6.00	< 0.	00874	90	70 - 130	
Percent recovery is based on the	spike	resu	lt. RPI) is based	d on the	spike and	spike dupl	icate res	ult.			
			MSD			Spike	Matrix		Rec.		RPD	
Param	\mathbf{F}	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit	
Benzene		1	1.57	mg/Kg	g 1	2.00	< 0.0053	3 78	70 - 130	6	20	
Toluene		1	1.59	$\mathrm{mg/Kg}$	g 1	2.00	< 0.0064	5 80	70 - 130	6	20	
Ethylbenzene		1	1.67	mg/Kg	g 1	2.00	< 0.0116	84	70 - 130	6	20	
Xylene		1	5.06	mg/Kg	g 1	6.00	< 0.0087	4 84	70 - 130	6	20	
Percent recovery is based on the	spike	resu	lt. RPI) is based	d on the	spike and	spike dupl	icate res	ult.			
							(continue	d			

Report Date: March 30, 2015 7250715029.001		Page Number: 25 of 30						
matrix spikes continued								
	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
	${ m MS}$	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.69	1.64	mg/Kg	1	2	84	82	70 - 130
4-Bromofluorobenzene (4-BFB)	1.95	1.92	mg/Kg	1	2	98	96	70 - 130

Calibration Standards

Standard (ICV-1)

QC Batch:	120238			Date A	Analyzed:	2015-03-24		Analy	zed By: EM
					ICVs	ICVs	ICVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride				mg/Kg	100	99.0	99	85 - 115	2015-03-24

Standard (CCV-1)

Chloride				m mg/Kg	100	101	101	85 - 115	2015-03-24		
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
					True	Found	Percent	Percent Recovery	Date		
					COV-	COV-		Dement			
QC Batch:	120238	238Date Analyzed: 20				2015-03-24		Analy	Analyzed By: EM		

Standard (CCV-2)

QC Batch:	120250		Date	Analyzed:	2015-03-25		Analy	Analyzed By: SC		
				CCVs	CCVs Found	CCVs Bargant	Percent	Data		
				True	round	Percent	Recovery	Date		
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
DRO		1	m mg/Kg	250	287	115	80 - 120	2015-03-25		

Standard (CCV-3)

QC Batch:	120250		Date	Analyzed:	2015-03-25		Analy	Analyzed By: SC		
				CCVs True	CCVs Found	CCVs Percent	Percent Becovery	Date		
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
DRO		1	m mg/Kg	250	285	114	80 - 120	2015-03-25		

Report Date: Ma 7250715029.001	rch 30, 2015		Work Order: 15032408 1002 Line Release-2				Page Nu:	mber: 27 of 30	
Standard (ICV-	$\cdot 1)$								
QC Batch: 1203	02		Date A	nalyzed:	2015-03-26		Analyz	zed By: EM	
				ICVs	ICVs	ICVs	Percent		
				True	Found	Percent	Recovery	Date	
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-26	
Standard (CCV	7-1)								
QC Batch: 120302			Date Analyzed: 2015-03-26				Analyzed By: EM		
				CCVs	CCVs	CCVs	Percent		
				True	Found	Percent	Recovery	Date	
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-26	
Standard (CCV	7-1)								
QC Batch: 120317		Date Analyzed: 2015-03-27			Analyzed By: AK				
QC Batch: 1203	17		Date A	nalyzed:	2015-03-27		Analy	zeu Dy. mit	
QC Batch: 1203	17		Date A	nalyzed: CCVs	2015-03-27 CCVs	$\rm CCVs$	Analy Percent	zeu Dy. AR	
QC Batch: 1203	17		Date A	nalyzed: CCVs True	2015-03-27 CCVs Found	CCVs Percent	Analy Percent Recoverv	Date	
QC Batch: 1203 Param	17 Flag	Cert	Date A Units	nalyzed: CCVs True Conc.	2015-03-27 CCVs Found Conc.	CCVs Percent Recovery	Analy Percent Recovery Limits	Date Analyzed	
QC Batch: 1203 Param Benzene	17 Flag		Date A Units mg/kg	nalyzed: CCVs True Conc. 0.100	2015-03-27 CCVs Found Conc. 0.104	CCVs Percent Recovery 104	Analy Percent Recovery Limits 80 - 120	Date Analyzed 2015-03-27	
QC Batch: 1203 Param Benzene Toluene	17 Flag	Cert 1	Date A Units mg/kg mg/kg	nalyzed: CCVs True Conc. 0.100 0.100	2015-03-27 CCVs Found Conc. 0.104 0.101	CCVs Percent Recovery 104 101	Percent Recovery Limits 80 - 120 80 - 120	Date Analyzed 2015-03-27 2015-03-27	
QC Batch: 1203 Param Benzene Toluene Ethylbenzene	17 Flag	Cert 1 1	Date A Units mg/kg mg/kg mg/kg	nalyzed: CCVs True Conc. 0.100 0.100 0.100	2015-03-27 CCVs Found Conc. 0.104 0.101 0.102	CCVs Percent Recovery 104 101 102	Percent Recovery Limits 80 - 120 80 - 120 80 - 120	Date Analyzed 2015-03-27 2015-03-27 2015-03-27	

Standard (CCV-2)

QC Batch: 120317				Date An	alyzed: 20	Analyz	Analyzed By: AK		
					CCVs	CCVs	$\rm CCVs$	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene			1	mg/kg	0.100	0.100	100	80 - 120	2015-03-27
Toluene			1	m mg/kg	0.100	0.0969	97	80 - 120	2015-03-27
Ethylbenzene			1	m mg/kg	0.100	0.0941	94	80 - 120	2015-03-27
Xylene			1	m mg/kg	0.300	0.284	95	80 - 120	2015-03-27

Report Date: March 30, 2015 7250715029.001					Work Orde 1002 Line	Page Nu	mber: 28 of 30			
Standard	(CCV-1)									
QC Batch:	120318			Date A	analyzed:	2015-03-27		Analy	zed By: AK	
Param GRO	Flag	; C	ert 1	Units mg/Kg	CCVs True Conc. 1.00	CCVs Found Conc. 1.20	CCVs Percent Recovery 120	Percent Recovery Limits 80 - 120	Date Analyzed 2015-03-27	
Standard	(CCV-2)									
QC Batch:	120318			Date A	analyzed:	2015-03-27		Analyzed By: AK		
Param	Flag	; C	ert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
GRU			1	mg/ Kg	1.00	1.04	104	80 - 120	2013-03-27	
Standard	(CCV-2)									
QC Batch:	120368			Date A	analyzed:	2015-03-30		Analy	zed By: AK	
					CCVs True	CCVs Found	CCVs Percent	Percent Recoverv	Date	
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Benzene			1	mg/kg	0.100	0.0976	98	80 - 120	2015-03-30	
Toluene			1	m mg/kg	0.100	0.0936	94	80 - 120	2015-03-30	
Ethylbenzer	ne		1	m mg/kg	0.100	0.0897	90	80 - 120	2015-03-30	
Xylene			1	mg/kg	0.300	0.272	91	80 - 120	2015-03-30	

Standard (CCV-3)

QC Batch: 120368				Date An	alyzed: 20	Analyz	Analyzed By: AK		
					CCVs	CCVs	CCVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene			1	mg/kg	0.100	0.0985	98	80 - 120	2015-03-30
Toluene			1	m mg/kg	0.100	0.0941	94	80 - 120	2015-03-30
Ethylbenzer	ie		1	m mg/kg	0.100	0.0949	95	80 - 120	2015-03-30
Xylene			1	m mg/kg	0.300	0.278	93	80 - 120	2015-03-30

Work Order: 15032408 1002 Line Release-2 Page Number: 29 of 30

Appendix

Report Definitions

NameDefinitionMDLMethod Detection LimitMQLMinimum Quantitation LimitSDLSample Detection Limit

Laboratory Certifications

	Certifying	Certification	Laboratory
\mathbf{C}	Authority	Number	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

Work Order: 15032408 1002 Line Release-2 Page Number: 30 of 30 $\,$

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.



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



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100

Lubbock, Texas 79424 Texas 79922 El Paso, Texas 79703 Midland, Carroliton. Texas 75006

E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

915-585-3443 FAX 915 • 585 • 4944 432-689-6301 FAX 432 • 689 • 6313 972-242 -7750

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Oklahoma ISO 17025 Kansas

Analytical and Quality Control Report

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

Report Date: April 28, 2015

Work C	Order:	15042401

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

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

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

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

This report consists of a total of 16 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Blain Lepturch

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

Report Contents

Case Narrative	4
Analytical Report Sample 391653 (N Wall RE) Sample 391654 (E Wall RE) Sample 391655 (S Wall RE) Sample 391656 (RP RE)	5 5 5 6
Method Blanks QC Batch 121048 - Method Blank (1)	8 8 8
Laboratory Control Spikes QC Batch 121048 - LCS (1) QC Batch 121104 - LCS (1) QC Batch 121105 - LCS (1)	9 9 9 9
Matrix Spikes 1 QC Batch 121048 - MS (1) 1 QC Batch 121104 - MS (1) 1 QC Batch 121105 - xMS (1) 1	11 11 11
Calibration Standards 1 QC Batch 121048 - CCV (1)	l 3 13 13 13 13 13
Appendix 1 Report Definitions 1 Laboratory Certifications 1 Standard Flags 1 Attachments 1	15 15 15 15

Case Narrative

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

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

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

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

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

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

Analytical Report

Sample: 391653 - N Wall RE

Laboratory: Analysis: QC Batch: Prep Batch:	oratory: Midland alysis: Chloride (Titration) Batch: 121104 p Batch: 102472		nalytical Method: ate Analyzed: ample Preparation:	SM 4500-Cl B 2015-04-28 2015-04-28	Prep Method: Analyzed By: Prepared By:	m N/A EM EM
Parameter	Fla	ag Cer	RL t Result	Units	Dilution	RL
Chloride		0	1080	mg/Kg	5	4.00

Sample: 391654 - E Wall RE

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 121104 102472	A D Sa	nalytical Method: ate Analyzed: ample Preparation:	SM 4500-Cl B 2015-04-28 2015-04-28	Prep Method: Analyzed By: Prepared By:	N/A EM EM
			RL			
Parameter	\mathbf{F}	lag Ce	rt Result	Uni	ts Dilution	RL
Chloride		U	<20.0	mg/K	5	4.00

Sample: 391655 - S Wall RE

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titratio 121104 102472	n)	An Da Sai	alytical Method: te Analyzed: nple Preparation:	SM 4500-Cl B 2015-04-28 2015-04-28	Prep Method: Analyzed By: Prepared By:	${ m N/A}$ EM
				RL			
Parameter		Flag	Cert	Result	Units	Dilution	RL
Chloride		U		<20.0	mg/Kg	5	4.00

Report Date: April 28, 2015	Work Order: 15042401	Page Number: 6 of 16
7250715029.001	1002 Line Release-2	

Sample: 391655 - S Wall RE

Laboratory:	Midland							
Analysis:	TPH DRO - NH	EW	Ana	lytical Meth	od: S 8015	5 D	Prep Met	thod: N/A
QC Batch:	121105		Date	e Analyzed:	2015-0)4-28	Analyzed	By: SC
Prep Batch:	102427		Sam	ple Preparat	ion: 2015-0)4-24	Prepared	By: SC
					RL			
Parameter		Flag	Cert	Res	sult	Units	Dilution	RL
DRO		Qs,U	1	<5	0.0	m mg/Kg	1	50.0
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane			89.0	mg/Kg	1	100	89	70 - 130

Sample: 391655 - S Wall RE

Laboratory: Midland Analysis: TPH GRO QC Batch: 121048 Prep Batch: 102424		Analytical Method:S 8015 DDate Analyzed:2015-04-27Sample Preparation:2015-04-24							d: S 5035 y: AK 7: AK
					RL				
Parameter	Flag		Cert		Result	Uni	$^{\mathrm{ts}}$	Dilution	RL
GRO	U		1		<4.00	mg/k	бg	1	4.00
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				1.78	mg/Kg	1	2.00	89	70 - 130
4-Bromofluorobenzene (4-BFB)	1			1.85	mg/Kg	1	2.00	92	70 - 130

Sample: 391656 - RP RE

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - NEV 121105 102427	V	Analyt Date A Sample	ical Method: nalyzed: e Preparation:	S 8015 D 2015-04-28 2015-04-24	Prep Method: Analyzed By: Prepared By:	N/A SC SC
				RL			
Parameter		Flag	Cert	Result	Units	Dilution	RL
DRO		$_{\rm Je,Qs}$	1	2940	mg/Kg	1	50.0

Report Date 7250715029.0	Report Date: April 28, 2015 250715029.001				Work Order: 15042401 1002 Line Release-2							
Surrogate]	Flag	Cer	t I	Result	Units	Dilu	tion A	Spike Amount	Percent Recovery	Recovery Limits	
n-Tricosane	Qsr	Qsr			164	mg/Kg	1		100	164	70 - 130	
Sample: 39	1656 - RP 1	RE										
Laboratory:	Midland											
Analysis:	TPH GRO			A	Analytica	al Method:	S 8015	D		Prep Metho	d: S 5035	
QC Batch:	121048			Ι	Date Ana	alyzed:	2015-04	4-27		Analyzed B	y: AK	
Prep Batch:	102424			S	Sample F	Preparation	: 2015-04	4-24		Prepared By	y: AK	
							RL					
Parameter			Flag		Cert	R	esult	Ur	nits	Dilution	RL	
GRO			Je		1	8	8440	mg/	Kg	50	4.00	
									Spike	Percent	Recovery	
Surrogate				Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits	
Trifluorotolue	ene (TFT)					84.3	mg/Kg	50	100	84	70 - 130	
4-Bromofluor	obenzene (4-	BFB)	Qsr	Qsr		180	$\mathrm{mg/Kg}$	50	100	180	70 - 130	

Method Blanks

Method Blank (1)	QC Batch: 121048							
QC Batch: 121048 Prep Batch: 102424		Date A QC Pre	nalyzed: eparation:	2015-04-27 2015-04-24	7 1		Analyzed Prepared	By: AK By: AK
					MDL			
Parameter	Flag		Cert		Result		Units	RL
GRO			1		<2.32]	mg/Kg	4
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-B	(FB)		1.83	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 121104

QC Batch: Prep Batch:	$\frac{121104}{102472}$		Date Analyzed: QC Preparation:	2015-04-28 2015-04-28	Analyzed By: Prepared By:	EM EM
				MDL		
Parameter		Flag	Cert	Result	Units	RL
Chloride				<3.85	mg/Kg	4

Method Blank (1) QC Batch: 121105

QC Batch: Prep Batch:	$\frac{121105}{102427}$			Date QC I	Analyzed: Preparation:	2015-04-28 2015-04-24			Analyz Prepar	ed By: ed By:	SC SC
	arameter RO						MDL				
Parameter			Fla	g	Cert		Result		Units		RL
DRO					1		<7.41		m mg/Kg		50
Surrogato		Flag	Cort	Rosult	Unite	Dilution		pike	Percent	Rec	overy
n-Tricosane		Flag	Cert	102	mg/Kg	1		100	102	70 -	· 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 121048		Date	e Analyzed	l: 201	15-04-27			Analyzed	By: AK
Prep Batch: 102424		QC	Preparatio	on: 201	15-04-24			Prepared	By: AK
			LCS			Spike	Matrix	ζ	Rec.
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO		1	15.1	mg/Kg	; 1	20.0	<2.32	76	70 - 130
Percent recovery is based on the spi	ke res	ult. RPD	is based of	on the s	pike and s	spike duplica	ate result.		
		LCSD			Spike	Matrix]	Rec.	RPD
Param	F C	Result	Units	Dil.	Amount	t Result	Rec. I	Limit RF	PD Limit
GRO	1	15.0	mg/Kg	1	20.0	$<\!2.32$	75 70	- 130 1	L 20
Percent recovery is based on the spi	ke res	ult. RPD	is based of	on the s	pike and s	spike duplica	ate result.		
		LC	CS LC	SD		Spi	ke LCS	S LCSD	Rec.
Surrogate		Res	ult Res	ult	Units	Dil. Amo	unt Rec	. Rec.	Limit
Trifluorotoluene (TFT)		1.8	85 1.8	83 n	ng/Kg	1 2.0	0 92	92	70 - 130
4-Bromofluorobenzene (4-BFB)		1.9	99 1.9	94 n	ng/Kg	1 2.0	0 100) 97	70 - 130
	1								
Laboratory Control Spike (LCS	-1)								
QC Batch: 121104		Date	e Analvzec	l: 201	15-04-28			Analvzed	Bv: EM
Prep Batch: 102472		QC	Preparatio	on: 201	5-04-28			Prepared	By: EM
1		Ŭ	1					1	0
			LCS			Spike	Matrix	x	Rec.
Param	\mathbf{F}	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			2260	mg/Kg	5	2500	<19.2	90	85 - 115
Percent recovery is based on the spi	ke res	ult. RPD	is based of	on the s	pike and s	spike duplica	ate result.		
		LCSD			Spike	Matrix	1	Rec	RPD
Param	FC	Result	Units	Dil	Amount	Result	Rec. I	imit RF	PD Limit
Chloride		2060	mg/Kg	5	2500	<19.2	82 85	- 115 () 20

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

Report Date: April 28, 2015 7250715029.001		Work Order: 15042401 1002 Line Release-2							Page Nu	mber: 1	0 of 16
Laboratory Control Spike (L	CS-1])									
QC Batch: 121105			Date	Analyze	ed: 201	15-04-28			Analy	zed By	: SC
Prep Batch: 102427	QC Preparation: 2015-04-24								Prepa	red By	: SC
				LCS			Spike	Mati	rix		Rec.
Param		F	C F	Result	Units	Dil.	Amount	Resu	ilt Red		Limit
DRO			1	209	mg/Kg	1	250	<7.4	41 84	7	0 - 130
Percent recovery is based on the	spike	resu	lt. RPD	is based	on the sp	oike and sp	oike duplica	ate result			
			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	206	mg/Kg	1	250	<7.41	82 7	70 - 130	1	20
Percent recovery is based on the	spike	resu	lt. RPD	is based	on the sp	oike and sp	oike duplica	ate result	•		
	LC	\mathbf{s}	LCSI)			Spike	LCS	LCSD)	Rec.
Surrogate	Res	ult	Resul	lt U	Inits	Dil.	Amount	Rec.	Rec.		Limit
n-Tricosane	10	1	100	m	g/Kg	1	100	101	100	7	0 - 130

Matrix Spikes

QC Batch:121048Date Analyzed:2015-04-27Analyzed ByPrep Batch:102424QC Preparation:2015-04-24Prepared By	7: AK 7: AK											
MS Spike Matrix	Rec.											
Param F C Result Units Dil. Amount Result Rec.	Limit											
$\frac{\text{GRO}}{1 13.5 \text{mg/Kg} 1 20.0 <2.32 68$	70 - 130											
Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.												
MSD Spike Matrix Rec.	RPD											
Param F C Result Units Dil. Amount Result Rec. Limit RPD	Limit											
GRO 1 14.2 mg/Kg 1 20.0 <2.32 71 70 - 130 5	20											
Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.												
MS MSD Spike MS MSD	Rec.											
Surrogate Result Result Units Dil. Amount Rec. Rec.	Limit											
Trifluorotoluene (TFT) 1.83 1.79 mg/Kg 1 2 92 90	70 - 130											
4-Bromofluorobenzene (4-BFB) 1.98 1.98 mg/Kg 1 2 99 99	70 - 130											
Matrix Spike (MS-1) Spiked Sample: 391859												
QC Batch: 121104 Date Analyzed: 2015-04-28 Analyzed By	r: EM											
rep Batch: 102472 QC Preparation: 2015-04-28 Prepared By: EM												
MS Spike Matrix	Rec.											
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\frac{\text{LIIIII}}{0}$											
Cmortae 2550 mg/Kg 5 2500 <19.2 94 78	.9 - 121											
Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.												
MSD Spike Matrix Rec.	RPD											
Param F C Result Units Dil. Amount Result Rec. Limit RPD	Limit											
Chloride 2350 mg/Kg 5 2500 <19.2 94 78.9 - 121 0	20											

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

Report Date: April 28, 2015 7250715029.001	Work Order: 15042401 1002 Line Release-2						Page Number: 12 of 16				
Matrix Spike (xMS-1) Spike	ed Samp	le: 391676									
QC Batch: 121105	Date Analyzed: 2015-04-28							Analyzed By: SC			
Prep Batch: 102427		QC P	reparation	n: 201	5-04-24			Prep	ared B	y: SC	
]	MS			Spike	Ma	atrix		Rec.	
Param	\mathbf{F}	C R	esult	Units	Dil.	Amount	Re	esult Re	ec.	Limit	
DRO		1 .	198 r	ng/Kg	1	250	8	.64 7	6	70 - 130	
Percent recovery is based on the s	pike res	ult. RPD is	s based or	n the sp	oike and sp	oike duplica	ate resi	ılt.			
		MSD			Spike	Matrix		Rec.		RPD	
Param	F C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit	
DRO Qs	Qs 1	169	mg/Kg	1	250	8.64	64	70 - 130	16	20	
Percent recovery is based on the s	pike res	ult. RPD is	s based or	n the sp	oike and sp	ike duplica	ate resi	ılt.			
	MS	MSD)			Spike	М	S MS	D	Rec.	
Surrogate	Result	Resul	t Ur	nits	Dil.	Amount	Re	c. Rec		Limit	
n-Tricosane	69.7	73.7	mg,	/Kg	1	100	7() 74		70 - 130	
Calibration Standards

Standard (CCV-1)

QC Batch:	121048		Date	Analyzed:	2015-04-27		Analy	zed By: AK
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	0.945	94	80 - 120	2015-04-27

Standard (CCV-2)

QC Batch:	121048		Date	Analyzed:	2015-04-27		Analy	zed By: AK
				CCVs True	CCVs Found	CCVs Percent	Percent	Date
_		~		iiuc	round		Theorem	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	m mg/Kg	1.00	0.875	88	80 - 120	2015-04-27

Standard (ICV-1)

QC Batch:	121104			Date A	Analyzed:	2015-04-28		Analy	zed By: EM
					ICVs	ICVs	ICVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride				m mg/Kg	100	101	101	85 - 115	2015-04-28

Standard (CCV-1)

QC Batch:	121104			Date A	Analyzed:	2015-04-28		Analy	zed By: EM
					CCVs	CCVs	CCVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride				mg/Kg	100	99.0	99	85 - 115	2015-04-28

Report Date: April 28, 2015 7250715029.001				Work Order: 15042401 1002 Line Release-2			Page Number: 14 of 16		
Standard (CC	CV-1)								
QC Batch: 12	21105		Date	Analyzed:	2015-04-28		Analy	yzed By: SC	
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date	
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
DRO		1	m mg/Kg	250	220	88	80 - 120	2015-04-28	

Standard (CCV-2)

QC Batch:	121105		Date	Analyzed:	2015-04-28		Analy	vzed By: SC
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	m mg/Kg	250	211	84	80 - 120	2015-04-28

Work Order: 15042401 1002 Line Release-2 Page Number: 15 of 16

Appendix

Report Definitions

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

Laboratory Certifications

	Certifying	Certification	Laboratory
\mathbf{C}	Authority	Number	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

Work Order: 15042401 1002 Line Release-2 Page Number: 16 of 16

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.



Apex TITAN, Inc. • 2351 W. Northwest Hwy., Suite 3321 • Dallas, Texas 75220 • Office: 214-350-5469 • Fax 214-350-2914



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100

Lubbock, Texas 79424 El Paso, Texas 79922 Texas 79703 Midland. Texas 75006 Carroliton. E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

915-585-3443 FAX 915 • 585 • 4944 432-689-6301 FAX 432 • 689 • 6313 972-242 -7750

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Oklahoma ISO 17025 Kansas

Analytical and Quality Control Report

(Corrected Report)

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

Report Date: July 24, 2015

Work Order:	15062636

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

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

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

Report Corrections (Work Order 15062636)

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

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

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

This report consists of a total of 23 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Blain Lepturch

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

Report Contents

Case Narrative	4
Analytical Report Sample 396939 (N Wall) Sample 396940 (W Wall) Sample 396941 (RP) Sample 396942 (STP 1) Sample 396943 (STP 2)	5 5 5 5 6 8
Method Blanks	1
QC Batch 122774 - Method Blank (1) 1 QC Batch 122781 - Method Blank (1) 1 QC Batch 122821 - Method Blank (1) 1 QC Batch 123264 - Method Blank (1) 1 QC Batch 123383 - Method Blank (1) 1	11 11 12 12
Laboratory Control Spikes	13
QC Batch 122774 - LCS (1) 1 QC Batch 122781 - LCS (1) 1 QC Batch 122821 - LCS (1) 1 QC Batch 123264 - LCS (1) 1 QC Batch 123383 - LCS (1) 1	13 14 14 15
Matrix Spikes 1	16
QC Batch 122774 - MS (1) 1 QC Batch 122781 - MS (1) 1 QC Batch 122821 - xMS (1) 1 QC Batch 123264 - MS (1) 1 QC Batch 123383 - xMS (1) 1	16 16 17 17
Calibration Standards	19
QC Batch 122774 - CCV (1) 1 QC Batch 122774 - CCV (2) 1 QC Batch 122781 - ICV (1) 1 QC Batch 122781 - CCV (1) 1 QC Batch 122821 - CCV (1) 1 QC Batch 122821 - CCV (2) 1 QC Batch 123264 - CCV (2) 1 QC Batch 123264 - CCV (3) 1 QC Batch 12383 - CCV (1) 1 QC Batch 123383 - CCV (2) 1 QC Batch 123383 - CCV (2) 1	19 19 19 20 20 20 20 21 21
Appendix 2	22
Report Definitions 2 Laboratory Certifications 2 Standard Flags 2 Attachments 2	22 22 22 23

Case Narrative

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

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

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

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

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

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

Analytical Report

Sample: 396939 - N Wall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 122781 103853	Ar Da Sa	nalytical Method: ate Analyzed: ample Preparation:	SM 4500-Cl B 2015-07-01 2015-07-01	Prep Method: Analyzed By: Prepared By:	N/A AK AK
		C	RL	TT •/	D.1 +.	ы
Parameter	F1	ag Cer	t Result	Units	Dilution	RL
Chloride	Ţ	J	<20.0	mg/Kg	5	4.00

Sample: 396940 - W Wall

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 122781 103853	Anal Date Samp	ytical Method: Analyzed: ble Preparation:	SM 4500-Cl B 2015-07-01 2015-07-01	Prep Method: Analyzed By: Prepared By:	N/A AK AK
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			94.0	mg/Kg	5	4.00

Sample: 396941 - RP

Laboratory: Analysis: QC Batch: Prep Batch:	Laboratory:MidlandAnalysis:TPH - Extended RangesQC Batch:122821Prep Batch:103862		lytical Method: e Analyzed: ple Preparation:	TX1005 2015-07-02	Prep Method: Analyzed By: Prepared By:	${ m N/A} m SC m SC$
			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
C6-C12	Qs		1530	mg/Kg	1	50.0
>C12-C28	$_{ m Qr,Qs}$		1580	mg/Kg	1	50.0
>C28-C35			148	mg/Kg	1	50.0
Total TPH	Qs		3260	m mg/Kg	1	50.0

7250715029	• ·								
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	Qsr	Qsr		104	mg/Kg	1	50.0	208	70 - 130
n-Octane	Qsr	Qsr		108	mg/Kg	1	50.0	216	70 - 130
n-Tricosane	Qsr	Qsr		121	mg/Kg	1	50.0	242	70 - 130
Sample: 396	941 - RP								
Laboratory:	Midland)		Applytics	al Mathady	S 8015 D		Drop Moth	N/Λ
OC Batch	193383)		Dato An	alwzod:	2015 07 02		Analyzed	$\begin{array}{ccc} \operatorname{Rule} & \operatorname{Rule}$
Prep Batch:	104334			Sample F	Preparation:	2015-06-29		Prepared 1	By: AK By: AK
]	RL			
Parameter]	Flag	Cert	Res	ult	Units	Dilution	RL
DRO			Qr,Qs	5	16	50	m mg/Kg	1	50.0
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		108	mg/Kg	1	50.0	216	70 - 130
Sample: 396	941 - RP								
Laboratory:	Midland	`		A 1 . • •	1.1.1.1	C 0015 D			1 0 5005
Analysis:	1999CA	J		Analytical	I Method:	5 8015 D		Prep Metho	1: S 5035
QC Batch: Prep Batch:	$123264 \\ 104236$			Sample Pi	reparation:	2015-07-21 2015-07-20		Analyzed By Prepared By	r: AK r: AK
					1	RL			
Parameter]	Flag	Cert	Res	ult	Units	Dilution	RL
GRO			0	5	14	80	mg/Kg	20	4.00

Work Order: 15062636

Page Number: 6 of 23 $\,$

Sumorata		Flag	Cont	Docult	Unita	Dilution	Spike	Percent	Recovery
Surrogate		гıag	Cert	nesun	Units	Dilution	Amount	necovery	Limits
Trifluorotoluene (TFT)				37.0	mg/Kg	20	40.0	92	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		59.7	m mg/Kg	20	40.0	149	70 - 130

Sample: 396942 - STP 1

Report Date: July 24, 2015

Laboratory:	Midland	A 1 (* 157 (1 1	0.0001D		C FORF
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122774	Date Analyzed:	2015-07-01	Analyzed By:	AK
Prep Batch:	103816	Sample Preparation:	2015-06-29	Prepared By:	AK

Report Date 7250715029	:: July 24, 2015		V	Vork Orde $1002 \ \#2$ (Page Num	ber: 7 of 23			
					BL				
Parameter		Flag	Cert		Result	Units	5	Dilution	RL
Benzene		U	5	<	< 0.0200	mg/Kg		1	0.0200
Toluene		U	5	5 <0.0200		mg/Kg	, ,	1	0.0200
Ethylbenzene	e	U	5	< 0.0200		mg/Kg		1	0.0200
Xylene		U	5	<	< 0.0200	mg/Kg		1	0.0200
G			a .		TT 1 .		Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Triffuorotolu	ene (TFT))		1.94	mg/Kg	1	2.00	97 100	70 - 130 70 - 120
4-Bromonuoi	obenzene (4-dr d)		2.00	mg/ Kg	1	2.00	100	70 - 130
Sample: 39	6942 - STP 1								
Laboratory:	Midland								
Analysis:	Chloride (Titrat	ion)	Anal	lytical Me	thod: SN	A 4500-Cl B		Prep Met	hod: N/A
QC Batch:	122781	,	Date	Analyzed	d: 20	15-07-01		Analyzed	By: AK
Prep Batch:	103853		Sam	ple Prepa	ration: 20	15-07-01		Prepared	By: AK
					RL				
Parameter		Flag	Cert		Result	Units	5	Dilution	RL
Chloride		U			<20.0	mg/Kg	5	5	4.00
Sample: 39	6942 - STP 1								
Laboratory:	Midland								
Analysis:	TPH - Extended	l Ranges	1	Analytical	Method:	TX1005		Prep Met	hod: N/A
QC Batch:	122821]	Date Anal	yzed:	2015-07-02		Analyzed	By: SC
Prep Batch:	103862		C k	Sample Pr	reparation:			Prepared	By: SC
					RL				
Parameter		Flag	Cert		Result	Unit	s	Dilution	RL
C6-C12		$_{\rm Qs,U}$			<50.0	mg/K	g	1	50.0
>C12-C28		$_{\rm Qr,Qs,U}$			$<\!50.0$	$\mathrm{mg/K}$	g	1	50.0
>C28-C35		U			$<\!50.0$	mg/K	g	1	50.0
Total TPH		$_{\rm Qs}$			<50.0	mg/K	g	1	50.0
~		~				S	pike	Percent	Recovery
Surrogate	Flag	Cert	Result	Unit	s Dilu	ition An	nount	Recovery	Limits
n-Triacontan	e		45.6	mg/K	g	1 5	0.0	91	70 - 130
n-Octane			49.8	mg/K	g	1 5 1 -	0.0	100	70 - 130 70 - 120
n-1ricosane			47.9	mg/K	g	1 5	0.0	90	70 - 130

Report Date: July 24, 2015 7250715029	Work Order: 15062636 1002 #2 (Enterprise)	Page Number: 8 of 23

Sample: 396942 - STP 1

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO 123383 104334		Analytica Date Ana Sample I	al Method: alyzed: Preparation:	S 8015 D 2015-07-02 2015-06-29		Prep Metho Analyzed E Prepared E	od: N/A By: AK By: AK
					RL			
Parameter		Flag	Cert	Re	sult	Units	Dilution	RL
DRO		$_{\rm Qr,Qs,U}$	5	<:	50.0	mg/Kg	1	50.0
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	1 1005	0010	47.9	mg/Kg	1	50.0	96	70 - 130

Sample: 396942 - STP 1

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 123264 104236			Analytic Date An Sample l	al Methoc alyzed: Preparatic	l: S 8013 2015-0 on: 2015-0	5 D 07-21 07-20		Prep Method Analyzed By Prepared By	l: S 5035 :: AK : AK
						RL				
Parameter		Flag		Cert		Result	Un	its	Dilution	RL
GRO		U		5		<4.00	mg/l	Кg	1	4.00
Surrogate			Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolue	ene (TFT)				1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluor	obenzene (4-BFB)				1.90	mg/Kg	1	2.00	95	70 - 130

Sample: 396943 - STP 2

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 122774 103816		Analytical Me Date Analyzed Sample Prepa	thod: S 8021B l: 2015-07-0 ration: 2015-06-2)1 29	Prep Method: Analyzed By: Prepared By:	S 5035 AK AK
				RL			
Parameter		Flag	Cert	Result	Units	Dilution	RL
Benzene			5	1.57	mg/Kg	1	0.0200
Toluene		Je	5	10.8	m mg/Kg	1	0.0200
Ethylbenzene	2		5	2.34	m mg/Kg	1	0.0200
Xylene		Je	5	25.2	m mg/Kg	1	0.0200

Report Date: July 24, 2015 7250715029		Page Num	Page Number: 9 of 23					
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.49	mg/Kg	1	2.00	74	70 - 130
4-Bromofluorobenzene (4-BFB)			2.39	mg/Kg	1	2.00	120	70 - 130

Sample: 396943 - STP 2

Chloride					377	mg	$/\mathrm{Kg}$		5	4.00
Parameter		Flag	Cer	rt	RL Result	U	nits	Dilu	tion	RL
Prep Batch:	103853		Sa	ample	Preparation:	2015-07-01		Р	repared By:	AK
QC Batch:	122781		D	ate A	.nalyzed:	2015-07-01		А	nalyzed By:	$\mathbf{A}\mathbf{K}$
Analysis:	Chloride (Titratio	on)	А	nalyti	ical Method:	SM 4500-Cl	В	Р	rep Method:	N/A
Laboratory:	Midland									

Sample: 396943 - STP 2

Laboratory:	Midland								
Analysis:	TPH - Ex	tended Ra	inges	Ar	nalytical Meth	Prep Met	hod: N/A		
QC Batch:	122821			Dε	ate Analyzed:	201	5-07-02	Analyzed	By: SC
Prep Batch:	103862	Sample Preparation:						Prepared	By: SC
					RL	I			
Parameter		I	Flag	Cert	Result	,	Units	Dilution	RL
C6-C12			Qs		904		mg/Kg	1	50.0
>C12-C28		c	Qr,Qs		692	}	m mg/Kg	1	50.0
>C28-C35					55.6	i	m mg/Kg	1	50.0
Total TPH			Qs		1650		mg/Kg	1	50.0
							Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane	e Qsr	Qsr		70.8	m mg/Kg	1	50.0	142	70 - 130
n-Octane	Qsr	Qsr		89.3	m mg/Kg	1	50.0	179	70 - 130
n-Tricosane	Qsr	Qsr		77.7	m mg/Kg	1	25.0	311	70 - 130

Sample: 396943 - STP 2

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

Report Date 7250715029	e: July 24,	2015		W 10	fork Order: 1 $002 \ \#2$ (Ent		Page Number: 10 of 23		
						RL			
Parameter			Flag	Cert	Res	sult	Units	Dilution	RL
DRO			$_{ m Qr,Qs}$	5	7	767	m mg/Kg	1	50.0
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		73.2	m mg/Kg	1	50.0	146	70 - 130
Sample: 39	6943 - S	ГР 2							
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GF 123264 104236	RO		Analytica Date Ana Sample F	al Method: alyzed: Preparation:	S 8015 D 2015-07-21 2015-07-20		Prep Meth Analyzed I Prepared I	юd: S 5035 Ву: АК Зу: АК
						DI			

					RL				
Parameter	Flag		Cert		Result	Uni	ts	Dilution	RL
GRO			5		$\boldsymbol{482}$	mg/K	g	20	4.00
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				39.3	mg/Kg	20	40.0	98	70 - 130
4-Bromofluorobenzene (4-BFB)				48.1	$\mathrm{mg/Kg}$	20	40.0	120	70 - 130

Method Blanks

Method Blank (1)	QC Batch: 122774								
QC Batch: 122774		Date A	nalyzed:	2015-07-0	01		Analyzed By		
Prep Batch: 103816		QC Pre	eparation:	2015-06-2	29		Prepared By		
					MDL				
Parameter	Flag		Cert		Result		Units	RL	
Benzene			5		< 0.00533]	m mg/Kg	0.02	
Toluene			5		$<\!0.00645$	1	m mg/Kg	0.02	
Ethylbenzene			5		< 0.0116	1	m mg/Kg	0.02	
Xylene			5		< 0.00874]	m mg/Kg	0.02	
						o	D	D	
						Spike	Percent	Recovery	
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits	
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130	
4-Bromofluorobenzene (4-I	BFB)		1.82	$\mathrm{mg/Kg}$	1	2.00	91	70 - 130	

Method Blank (1) QC Batch: 122781

QC Batch: Prep Batch:	$\frac{122781}{103853}$		Date Analyzed: QC Preparation:	2015-07-01 2015-07-01	Analyzed By: Prepared By:	AK AK
				MDL		
Parameter		Flag	Cert	Result	\mathbf{Units}	RL
Chloride				<3.85	mg/Kg	4

Method Blank (1) QC Batch: 122821

QC Batch:	122821		Date Analyzed:	2015-07-02	Analyzed By:	\mathbf{SC}
Prep Batch:	103862		QC Preparation:	2015-06-29	Prepared By:	\mathbf{SC}
				MDL		
Parameter		Flag	Cert	Result	Units	RL
C6-C12				<5.66	mg/Kg	50
>C12-C28				<7.50	mg/Kg	50
>C28-C35				<7.50	mg/Kg	50
Total TPH				$<\!5.66$	m mg/Kg	50

SurrogateFlagCertResultUnitsDilutionSpikePercentRecoveryLimitsn-Triacontane59.8mg/Kg150.012070 - 130n-Octane58.3mg/Kg150.011770 - 130n-Tricosane60.2mg/Kg150.012070 - 130Method Blank (1)QC Batch:1232642015-07-21Analyzed2015-07-21Analyzed By:AKPrep Batch:104236Date Analyzed:2015-07-20Prepared By:AKParameterFlagCertResultUnitsRLGRO \circ <2.32mg/Kg4SurrogateFlagCertResultUnitsRecoverySurrogateFlagCertResultUnitsPercentRecoverySurrogateFlagCertResultUnitsDilutionAmalyzed By:AKPrep Batch:104334Date Analyzed:2015-07-02Analyzed By:AKBromofluoroblenzene (4-BFB)1.62mg/Kg12.008170 - 130ParameterFlagCertResultUnitsPrepared By:SCParameterFlagCertResultUnitsRLDROs<<5050SurrogateFlagCertResultUnitsRLDROs50.012070 - 130NDLss50.0	Report Date: July 24, 7250715029	2015		V	Vork Order: $1002 \ \#2$ (E)	15062636 nterprise)			Page Num	ber: 12 of 23
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Surrogate	Flag	Cert	Result	Units	Diluti	ion	Spike Amount	Percent Recovery	Recovery Limits
n-Octane58.3mg/Kg150.011770 - 130n-Tricosane 60.2 mg/Kg 1 50.0 120 $70 - 130$ Method Blank (1)QC Batch: 123264 Date Analyzed: $2015-07-21$ Analyzed By:AKPrep Batch: 104236 QC Preparation: $2015-07-20$ Prepared By:AKParameterFlagCertResultUnitsRLGRO s <2.32	n-Triacontane			59.8	mg/Kg	; 1		50.0	120	70 - 130
Method Blank (1) QC Batch: 123264 Date Analyzed: 2015-07-21 Analyzed By: AK Prep Batch: 104236 QC Preparation: 2015-07-20 Prepared By: AK Parameter Flag Cert Result Units RL GRO s <2.32	n-Octane			58.3	mg/Kg	; l		50.0	117	70 - 130
Method Blank (1)QC Batch: 123264 QC Preparation:Date Analyzed: 2015-07-202015-07-21 Prepared By:Analyzed By: AK Prepared By:AK Prepared By:AK AKParameterFlagCertResultUnitsRL ResultGROs<2.32mg/Kg4SurrogateFlagCertResultUnitsDilutionAmountRecovery LimitsTrifluorotoluene (TFT)1.85mg/Kg12.009270 - 1304-Bromofluorobenzene (4-BFB)1.62mg/Kg12.008170 - 130Method Blank (1)QC Batch:123383QC Batch:123383Date Analyzed: QC Preparation:2015-07-02Analyzed By: AK Prepared By:KK SCPrep Batch:104334Date Analyzed: QC Preparation:2015-07-02Analyzed By: AK 	n- iricosane			00.2	mg/Kg	<u>, 1</u>		50.0	120	70 - 130
QC Batch:123264 QC Preparation:Date Analyzed: 2015-07-202015-07-21 Prepared By:Analyzed By: AKAK Prepared By:AK Prepared By:AK AKParameterFlagCertResultUnitsInitsRL MDLGROs<2.32	Method Blank (1)	QC Ba	atch: 123264	1						
QC Datch120504 QC Preparation:Date finallyzed:2015 01 21 Prepared By:finallyzed:Dy.fit Prepared By:AKParameterFlagCertResultUnitsRLGRO \circ <2.32 mg/Kg4SurrogateFlagCertResultUnitsDilutionTrifluorotoluene (TFT)1.85mg/Kg12.009270 - 1304-Bromofluorobenzene (4-BFB)1.62mg/Kg12.008170 - 130Muthod Blank (1)QC Batch:123383QC Preparation:2015-07-02Analyzed By:AKPrep Batch:104334QC Preparation:2015-07-02Analyzed By:SCParameterFlagCertResultUnitsRLDRO \circ <7.41	OC Batch: 123264			Date A	nalvzed	2015-07-21			Analyze	d Bv· AK
Inspire Letter Inspire Lyn InnParameterFlagCertResultUnitsInspire Lyn InnGRO \circ <2.32 mg/Kg4SurrogateFlagCertResultUnitsDilutionAmountRecoverySurrogateFlagCertResultUnitsDilutionAmountRecoveryLimitsTrifluorotoluene (TFT)1.85mg/Kg12.009270 - 1304-Bromofluorobenzene (4-BFB)1.62mg/Kg12.008170 - 130Method Blank (1)QC Batch: 12383QC Batch:12383Date Analyzed:2015-07-02Analyzed By:AKPrep Batch:104334QC Preparation:2015-06-29Prepared By:SCMDLParameterFlagCertResultUnitsRLDRO \circ <	Prep Batch: 104236			OC Preparation: $2015-07-21$				Prepare	d By: AK	
ParameterFlagCertResultUnitsRLGROs<2.32	110p 200000 101200			Q 0 1 1	oparation	-010 01 -0			11000010	a 29 1111
ParameterFlagCertResultUnitsRLGRO 5 <2.32							MDL			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Parameter		Flag		Cert		Result		Units	RL
SurrogateFlagCertResultUnitsDilutionSpikePercentRecoveryLimitsTrifluorotoluene (TFT) 1.85 mg/Kg 1 2.00 92 $70 - 130$ 4-Bromofluorobenzene (4-BFB) 1.62 mg/Kg 1 2.00 81 $70 - 130$ Method Blank (1)QC Batch: 123383QC Batch: 123383 Date Analyzed: $2015-07-02$ Analyzed By:AKPrep Batch: 104334 QC Preparation: $2015-06-29$ Prepared By:SCMDLParameterFlagCertResultUnitsRLDRO 5 <7.41 mg/Kg 50 SurrogateFlagCertResultUnitsRLDRO 60.2 mg/Kg 1 50.0 120 $70 - 130$	GRO				5		<2.32		mg/Kg	4
SurrogateFlagCertResultUnitsDilutionAmountRecoveryLimitsTrifluorotoluene (TFT)1.85mg/Kg12.009270 - 1304-Bromofluorobenzene (4-BFB)1.62mg/Kg12.008170 - 130Method Blank (1)QC Batch: 123383QC Batch: 123383Date Analyzed: 2015-07-02Analyzed By: AKPrep Batch: 104334QC Preparation: 2015-06-29Prepared By: SCParameterFlagCertResultUnitsRLDRO s <7.41								a .1	D i	D
SurrogateFlagCertResultUnitsDilutionAmountRecoveryLimitsTrifluorotoluene (TFT) 1.85 mg/Kg 1 2.00 92 $70 - 130$ 4-Bromofluorobenzene (4-BFB) 1.62 mg/Kg 1 2.00 81 $70 - 130$ Method Blank (1)QC Batch: 123383QC Batch: 123383 Date Analyzed: $2015-07-02$ Analyzed By:AKPrep Batch: 104334 QC Preparation: $2015-06-29$ Prepared By:SCMDLParameterFlagCertResultUnitsRLDRO s <7.41 mg/Kg 50 SurrogateFlagCertResultUnitsRecoveryLimits s <7.41 mg/Kg 50 50 SurrogateFlagCertResultUnitsDilutionAmountRecoveryLimitsn-Tricosane 60.2 mg/Kg 1 50.0 120 $70 - 130$	0			C I		TT •/	D'1 /	Spike	Percent	Recovery
Influorototuene (1F1)1.85mg/Kg12.009270 - 1304-Bromofluorobenzene (4-BFB)1.62mg/Kg12.008170 - 130Method Blank (1)QC Batch: 123383QC Batch:123383Date Analyzed:2015-07-02Analyzed By:AKPrep Batch:104334QC Preparation:2015-06-29Prepared By:SCMDLParameterFlagCertResultUnitsRLDRO s <7.41	Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
4-Bromonuorobenzene (4-BFB) 1.62 mg/Kg 1 2.00 81 $70 - 130$ Method Blank (1)QC Batch: 123383Date Analyzed: 2015-07-02Analyzed By: AKQC Batch: 123383Date Analyzed: 2015-06-29Prepared By: SCPrep Batch: 104334QC Preparation: 2015-06-29MDLParameterFlagCertResultUnitsRLDRO 5 <7.41 mg/Kg 50 SurrogateFlagCertResultUnitsRecoverySurrogateFlagCertResultUnitsDilutionAmountRecoverySurrogateFlagCertResultUnitsDilutionAmountRecoveryLimitsn-Tricosane60.2mg/Kg1 50.0 120 $70 - 130$	Triffuorotoluene (TFT)				1.85	mg/Kg	1	2.00	92	70 - 130
Method Blank (1)QC Batch: 123383QC Batch:123383Prep Batch:104334Date Analyzed:2015-07-02Prep Batch:104334QC Preparation:2015-06-29MDLParameterFlagCertResultDRO 5 $<$ 7.41mg/KgSurrogateFlagCertResultUnitsDilutionAmountRecoveryLimitsn-Tricosane 60.2 mg/Kg150.012070 - 130	4-Bromonuorobenzene	(4-DFD)			1.02	mg/Kg	1	2.00		70 - 150
Prep Batch:104334QC Preparation:2015-06-29Prepared By:SCMDL ParameterFlagCertResultUnitsRLDRO5<7.41	Method Blank (1) QC Batch: 123383	QC Ba	atch: 123383	B Date A	Analyzed:	2015-07-02			Analyze	d By: AK
ParameterFlagCertMDL ResultUnitsRL DRODRO5<7.41	Prep Batch: 104334			QC Pr	eparation:	2015-06-29	1		Prepare	d By: SC
$\begin{array}{c c c c c c c c } & & & & & & & & & & & & & & & & & & &$	-			·	-				-	Ū
ParameterFlagCertResultUnitsRLDRO5<7.41							MDL			
DRO5<7.41mg/Kg50SurrogateFlagCertResultUnitsDilutionAmountRecoveryLimitsn-Tricosane60.2mg/Kg150.012070 - 130	Parameter		Flag		Cert		Result		Units	RL
SurrogateFlagCertResultUnitsDilutionAmountRecoveryLimitsn-Tricosane60.2mg/Kg150.012070 - 130	DRO				5		<7.41		m mg/Kg	50
SurrogateFlagCertResultUnitsDilutionAmountRecoveryLimitsn-Tricosane60.2mg/Kg150.012070 - 130								Spike	Percent	Recovery
n-Tricosane 60.2 mg/Kg 1 50.0 120 70 - 130	Surrogate	Flag	Cert	Result	Units	Dilutio	on .	Amount	Recovery	Limits
	n-Tricosane			60.2	mg/Kg	1		50.0	120	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

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

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		5	1.80	mg/Kg	1	2.00	< 0.00533	90	70 - 130
Toluene		5	1.81	$\mathrm{mg/Kg}$	1	2.00	$<\!0.00645$	90	70 - 130
Ethylbenzene		5	1.86	$\mathrm{mg/Kg}$	1	2.00	< 0.0116	93	70 - 130
Xylene		5	5.63	$\mathrm{mg/Kg}$	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.

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

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

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

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:	$122781 \\ 103853$	781Date Analyzed:2015-07-01Analyzed By:853QC Preparation:2015-07-01Prepared By:									By: AK By: AK	
Param				F	С	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride						2450	mg/Kg	5	2500	<19.2	98	85 - 115
	• 1	1	. 1	•1	1. D		1 (1)1	1	•1 1 1• •	1.		

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

Report Date: July 24, 2015 7250715029				Work Ord 1002 #2	ler: 15 (Enter	062636 prise)			Page Nu	umber:	14 of 23
control spikes continued											
			LCSD			Spike	Matrix		Rec.		RPD
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
			LCSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			2550	mg/Kg	5	2500	<19.2	102	85 - 115	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:	Batch:122821Date Analyzed:2015-07-02p Batch:103862QC Preparation:2015-06-29								Analyzed Prepared	l By: SC By: SC
_				LCS		_	Spike	Matrix	_	Rec.
Param		F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
C6-C12				216	$\mathrm{mg/Kg}$	1	250	$<\!5.66$	86	75 - 125
>C12-C28				252	$\mathrm{mg/Kg}$	1	250	$<\!7.50$	101	75 - 125
Total TPH				471	$\mathrm{mg/Kg}$	1	500	$<\!8.31$	94	75 - 125

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

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

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

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

Laboratory Control Spike (LCS-1)

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

continued ...

Report Date: July 24, 2015 7250715029	Work Order: 15062636 1002 #2 (Enterprise)									Pa	ge Nu	mber:	15 of 23	
control spikes continued														
				LCS					Spike	Μ	atrix			Rec.
Param		F	C	Result	U	nits	Dil.	1	Amount	R	esult	Re	ec.	Limit
				LCS					Spike	М	atrix			Rec.
Param		F	С	Result	U	nits	Dil.	1	Amount	R	esult	Re	ec.	Limit
GRO			5	14.2	mg	g/Kg	1		20.0	<	2.32	7	1	70 - 130
Percent recovery is based on the sp	oike	resu	lt. RPD	is base	d on t	he spil	ke and	spike	e duplica	ate res	ult.			
			LCSD				Spike	Ν	Aatrix		Re	c.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Unit	ts I	Dil.	Amoun	t I	Result	Rec.	Lin	nit	RPD	Limit
GRO		5	14.1	mg/I	Kg	1	20.0		<2.32	70	70 -	130	1	20
Percent recovery is based on the sp	oike	resu	lt. RPD	is base	d on t	he spil	ke and	spike	e duplica	ate res	ult.			
			LC	CS I	LCSD				Spi	ke	LCS	LC	$^{\mathrm{SD}}$	Rec.
Surrogate			Res	ult I	Result	Ur	nits	Dil.	Amo	unt	Rec.	Re	ec.	Limit
Trifluorotoluene (TFT)			1.9	92	1.87	mg	/Kg	1	2.0	0	96	9	4	70 - 130
4-Bromofluorobenzene (4-BFB)			1.9	93	1.85	mg	$/\mathrm{Kg}$	1	2.0	0	96	9	2	70 - 130
Laboratory Control Spike (LC	S- 1	.)												
QC Batch: 123383			Date	e Analy	zed:	2015-	-07-02					Analy	zed B	y: AK
Prep Batch: 104334			QC	Prepara	ation:	2015	-06-29				-	Prepa	red B	y: SC

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

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

Param	F	С	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		5	224	mg/Kg	1	250	<7.41	90	70 - 130	6	20
Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.											
	LC	CS	LCSE)			Spike	LCS	S LCS	D	Rec.
Surrogate	Res	ult	Resul	t Ui	nits	Dil.	Amount	Rec	e. Rec		Limit
n-Tricosane	62	.8	61.6	mg	/Kg	1	50.0	126	5 123		70 - 130

Matrix Spikes

Matrix Spike	(MS-1)) Spiked Sample: 3	96942
	`	/ / /	

QC Batch:	122774	Date Analyzed:	2015-07-01	Analyzed By:	$\mathbf{A}\mathbf{K}$
Prep Batch:	103816	QC Preparation:	2015-06-29	Prepared By:	AK

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		5	1.60	mg/Kg	1	2.00	< 0.00533	80	70 - 130
Toluene		5	1.69	m mg/Kg	1	2.00	$<\!0.00645$	84	70 - 130
Ethylbenzene		5	1.81	m mg/Kg	1	2.00	< 0.0116	90	70 - 130
Xylene		5	5.45	$\mathrm{mg/Kg}$	1	6.00	< 0.00874	91	70 - 130

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

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

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

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

Matrix Spike (MS-1) Spiked Sample: 396943

QC Batch: Prep Batch:	122781 103853		1 (Date Analy QC Prepara	zed: 2015 ation: 2015	5-07-01 5-07-01			Analyze Prepare	d By: AK d By: AK
Param		F	С	MS Besult	Units	Dil	Spike Amount	Matrix Result	Rec	Rec. Limit
Chloride		1	0	3020	mg/Kg	5	2500	377	106	78.9 - 121
Chloride	• • • • •	1 •1	14	$\frac{3020}{000 \pm 1}$	mg/Kg		2500	377	106	78.9 - 12

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

Report Date: July 24, 2015 7250715029				Wo 10	rk Order $02 \ \#2$ (E	: 1506 Interp	52636 rise)			Page 1	Number	r: 17 of 2:
matrix spikes continued			MS	D			Snike	Matrix		Rec		RPD
Param	F	C	Resi	ılt U	nits D	il. A	Amount	Result	Rec.	Limit	RP	D Limit
							a .1			D		DDD
Daram	F	C	MS. Rosi	D 1+ II-	nite D	;1 /	Spike .	Matrix Rosult	Roc	Rec. Limit	BD.	RPD D Limit
Chloride	Г	U	274	$\frac{11}{0}$ mg	$\frac{11105}{V/K\sigma}$	<u>п. г.</u> 5	2500	377	$\frac{1000}{94}$	$\frac{111111}{78.9 - 12^{12}}$	$\frac{101}{1}$	$\frac{D}{20}$
Percent recovery is based on t	he spil	ke resu	ılt. R	PD is ba	ased on t	he spi	ike and spi	ke duplic	ate resi	ılt.		
Matrix Spike (xMS-1)	Spiked	Samp	le: 39'	7055								
QC Batch: 122821			I	Date An	alvzed:	201	5-07-02			An	alvzed	Bv: SC
Prep Batch: 103862			(QC Prep	paration:	2015	5-06-29			Pre	epared	By: SC
-											-	v
				MS				Spike	M	atrix		Rec
Param		\mathbf{F}	\mathbf{C}	Resu	lt Ui	nits	Dil.	Amount	Re	sult	Rec.	Limit
C6-C12				286	mg	/Kg	1	250	<	5.66	114	75 - 125
>C12-C28				1250) mg	/Kg	1	250	1	010	96	75 - 125
Total TPH				1740) mg	/Kg	1	500	12	280	92	75 - 125
Percent recovery is based on t	he spil	ke resu	ılt. R	PD is ba	ased on t	he spi	ike and spi	ke duplic	ate resi	ılt.		
				MSD			Snike	Matrix	-	Rec		RÞD
Param		\mathbf{F}	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	RP	D Limit
<u>C6-C12</u>	Os	05	0	319	mg/Kg	1	250	<5.66	128	75 - 12	25 11	$\frac{2}{20}$
>C12-C28	Or.Os	Or.Os		1680	mg/Kg	1	$\frac{-00}{250}$	1010	268	75 - 12	25 29	$\frac{-0}{20}$
Total TPH	Qs	Qs		2240	mg/Kg	1	500	1280	192	75 - 12	25 25	5
Percent recovery is based on t	he spil	ke resu	lt.R	PD is ba	ased on t	he spi	ike and spi	ke duplic	ate resi	ılt.		
	~P		~			~P-		~				Ð
G , ,		M	S	MSD) , TT	•,	וית	Spike		AS N	1SD	$\operatorname{Rec.}$
Surrogate		Res	ult	Resul	t Ui	nits	Dıl.	Amoun	t R	$\frac{\text{ec.}}{50}$	tec.	Limit
n-Iriacontane _{Qsr} _{Qsr}		75	.2	110	mg	/Kg	1	50	1	50 1 04	220	70 - 130
n-Octane		52	.0	(1.)	mg	/Kg	1	50	1	04 . 02 .	143	70 - 130
II-IIICOSANE Qsr Qsr		95	.ð	138	mg	/ng	1	50	1	92 2	270	70 - 130
Matrix Spike (MS-1) Sp	iked S	ample	: 3989	016								
OC Batch: 123264			т)ata An	alvzad	2015	5-07-91			Δn	alvzad	Bw ∆K
Prep Batch: 104236			í.	C Pren	aration:	2015	5-07-20			Pre	pared 1	By: AK

continued ...

Report Date: July 24, 2015 7250715029	ort Date: July 24, 2015 0715029									Pag	e Numbe	er: 18 of 23
matrix spikes continued												-
D.		_	a	MS	TT 1	DU		spike	M	atrix	Б	Rec.
Param	-	Ľ'	C F	lesult	Units	Dil.	Aı	mount	R	esult	Rec.	Limit
				MS			S	Spike	М	atrix		Rec.
Param	-	F	C F	Result	Units	Dil.	Aı	mount	R	esult	Rec.	Limit
GRO			5	17.6	mg/K	g 1		20.0	<	2.32	88	70 - 130
Percent recovery is based on the spi	ke	resu	lt. RPD	is based	on the	spike and	spike o	duplica	te res	ult.		
			MSD			Spike	Ma	atrix		Rec		RPD
Param	P	С	Result	Units	Dil.	Amour	nt Re	esult	Rec.	Lim	it RP	D Limit
GRO		5	15.8	mg/K	g 1	20.0	<	2.32	79	70 - 1	30 11	20
Percent recovery is based on the spi	ke	resu	lt. RPD	is based	on the	spike and	spike o	duplica	te res	ult.		
			M	S N	ASD			Sp	ike	MS	MSD	Rec.
Surrogate			Res	ult R	esult	Units	Dil.	Amo	ount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)			1.9	5 1	1.85	mg/Kg	1	2	2	98	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.8	5	1.94	m mg/Kg	1	2	2	92	97	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 397055

QC Batch: Prep Batch:	123383 104334		D Ç	ate Analyz C Prepara	ed: 2015- tion: 2015-	07-02 06-29		1	Analyzed Prepared	By: AK By: SC
				MS			Spike	Matrix		Rec.
Param		\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO			5	1090	mg/Kg	1	250	844	98	70 - 130
Percent recor	very is based on th	o sniko rosi	ilt BI	D is based	on the spil	is bre as	nike duplicat	o rosult		

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

				MSD			Spike	Matrix		Rec.		RPD
Param		F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	$_{ m Qr,Qs}$	$_{\rm Qr,Qs}$	5	1430	mg/Kg	1	250	844	234	70 - 130	27	20
D	 											

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

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

Calibration Standards

Standard (CCV-1)

QC Batch:	122774			Date An	alyzed: 20	15-07-01		Analyzed By: AK			
					CCVs	CCVs	CCVs	Percent			
					True	Found	Percent	Recovery	Date		
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Benzene			5	mg/kg	0.100	0.0860	86	80 - 120	2015-07-01		
Toluene			5	m mg/kg	0.100	0.0877	88	80 - 120	2015-07-01		
Ethylbenzer	ie		5	m mg/kg	0.100	0.0904	90	80 - 120	2015-07-01		
Xylene			5	m mg/kg	0.300	0.272	91	80 - 120	2015-07-01		

Standard (CCV-2)

QC Batch: 12	2774			Date An	alyzed: 20		Analyzed By: AK			
					CCVs	CCVs	CCVs	Percent		
					True	Found	Percent	Recovery	Date	
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Benzene			5	mg/kg	0.100	0.0878	88	80 - 120	2015-07-01	
Toluene			5	m mg/kg	0.100	0.0899	90	80 - 120	2015-07-01	
Ethylbenzene			5	m mg/kg	0.100	0.0940	94	80 - 120	2015-07-01	
Xylene			5	mg/kg	0.300	0.276	92	80 - 120	2015-07-01	

Standard (ICV-1)

QC Batch:	122781			Date A	Analyzed:	2015-07-01		Analy	yzed By: AK
					ICVs	ICVs	ICVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride				mg/Kg	100	100	100	85 - 115	2015-07-01

Standard (CCV-1)

QC Batch: 122781

Date Analyzed: 2015-07-01

Analyzed By: AK

Report Date: July 24, 2015 7250715029			V 1	Vork Order: $1002 \ #2$ (Er	Page Number: 20 of 23			
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			m mg/Kg	100	100	100	85 - 115	2015-07-01
Standard (C	CV-1)							
QC Batch: 12	22821		Date A	Analyzed: 2	2015-07-02		Analy	zed By: SC
				CCVs	$\rm CCVs$	CCVs	Percent	
Param	Flag	Cert	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date Analyzed
C6-C12 >C12-C28			m mg/Kg $ m mg/Kg$	250 250	220 227	88 91	75 - 125 75 - 125	2015-07-02 2015-07-02
Standard (C	CV-2)							
QC Batch: 12	22821		Date A	Analyzed: 2	2015-07-02		Analy	zed By: SC
D		C i	T T 1	CCVs True	$\begin{array}{c} \mathrm{CCVs} \\ \mathrm{Found} \end{array}$	CCVs Percent	Percent Recovery	Date
Param C6 C12	Flag	Cert	Units mg/Kg	<u> </u>	210	Recovery 84	Limits 75 125	Analyzed
>C12-C28			mg/Kg	$250 \\ 250$	210 210	84 84	75 - 125	2015-07-02

Standard (CCV-2)

>C28-C35

QC Batch:	123264	.23264		Analyzed:	2015-07-21		Analy	Analyzed By: AK		
				CCVs	CCVs	CCVs	Percent			
				True	Found	Percent	Recovery	Date		
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
GRO		5	m mg/Kg	1.00	0.977	98	80 - 120	2015-07-21		

0.00

mg/Kg

4.28

75 - 125

Standard (CCV-3)

QC Batch: 123264

Date Analyzed: 2015-07-21

Analyzed By: AK

2015-07-02

Report Date: July 24, 2015 7250715029				Work Orde 1002 #2 (Page Number: 21 of 23			
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		5	mg/Kg	1.00	0.875	88	80 - 120	2015-07-21
Standard ((CCV-1)							
QC Batch:	123383		Date	Analyzed:	2015-07-02		Analy	zed By: AK
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		5	mg/Kg	250	228	91	80 - 120	2015-07-02
Standard ((CCV-2)							
QC Batch:	123383		Date	Analyzed:	2015-07-02		Analy	zed By: AK
				CCVs	CCVs	CCVs	Percent	
Ð		<i>a</i> .	TT T	True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		5	mg/Kg	250	213	85	80 - 120	2015-07-02

Work Order: 15062636 1002 #2 (Enterprise) Page Number: 22 of 23

Appendix

Report Definitions

NameDefinitionMDLMethod Detection LimitMQLMinimum Quantitation LimitSDLSample Detection Limit

Laboratory Certifications

	Certifying	Certification	Laboratory
\mathbf{C}	Authority	Number	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.

Report Date: July 24, 2015 7250715029

Work Order: 15062636 1002 #2 (Enterprise) Page Number: 23 of 23

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.



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

Analytical Report 514404

for APEX/Titan

Project Manager: Karolanne Toby

1002 Line Release

7250715029

31-AUG-15

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

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

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

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



31-AUG-15

SALP ACCREDIES

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

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

Karolanne Toby:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 514404. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 514404 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully

 Julian Martinez

 Project Manager

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Sample Cross Reference 514404



APEX/Titan, Midland, TX

1002 Line Release

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





Client Name: APEX/Titan Project Name: 1002 Line Release

 Project ID:
 7250715029

 Work Order Number(s):
 514404

Report Date: *31-AUG-15* Date Received: *08/27/2015*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-975723 BTEX by EPA 8021B

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



Project Location:

Project Id: 7250715029

Contact: Karolanne Toby

Certificate of Analysis Summary 514404

APEX/Titan, Midland, TX

Project Name: 1002 Line Release



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

						110jeet Munugert	Reisey Brooks	
	Lab Id:	514404-0	01	514404-0	002			
Analysis Paguastad	Field Id:	CS-1		STP-2-I	RE			
Analysis Kequeslea	Depth:	19 ft						
	Matrix:	SOIL		SOIL				
	Sampled:	Aug-27-15 1	13:25	Aug-27-15	13:45			
BTEX by EPA 8021B	Extracted:	Aug-27-15	18:00	Aug-27-15	18:00			
	Analyzed:	Aug-28-15 (03:50	Aug-28-15	04:07			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Benzene		0.0274	0.00100	0.0153	0.00100			
Toluene		0.0762	0.00200	0.141	0.00200			
Ethylbenzene		0.0125	0.00100	0.0401	0.00100			
m_p-Xylenes		0.146	0.00200	0.468	0.00200			
o-Xylene		0.0380	0.00100	0.118	0.00100			
Total Xylenes		0.184	0.00100	0.586	0.00100			
Total BTEX		0.300	0.00100	0.782	0.00100			
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-27-15	16:50	Aug-27-15	16:50			
	Analyzed:	Aug-27-15 2	23:51	Aug-28-15	00:14			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Chloride		186	100	267	100			
TPH By SW8015B Mod Extracted:		Aug-27-15 2	20:00	Aug-27-15 20:00				
Analyzed:		Aug-28-15 2	23:03	Aug-29-15	10:14			
	Units/RL:	mg/kg	RL	mg/kg	RL			
C6-C10 Gasoline Range Hydrocarbons		15.6	15.0	276	15.0			
C10-C28 Diesel Range Hydrocarbons		ND	15.0	1050	15.0			
Total TPH		15.6	15.0	1330	15.0			

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





Julian Martinez Project Manager

Page 5 of 15



Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to 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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(602) 437-0330	

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(281) 240-4200

Fax (281) 240-4280



Form 2 - Surrogate Recoveries

Project Name: 1002 Line Release

Work Or	rders : 51440	04, 514404	Project ID: 7250715029						
Lab Batch	#: 975723	Sample: 514404-001 / SMP	Batch: 1 Matrix: Soil						
Units:	mg/kg	Date Analyzed: 08/28/15 03:50	SURROGATE RECOVERY STUDY						
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1,4-Difluor	obenzene		0.0256	0.0300	85	80-120			
4-Bromoflu	orobenzene		0.0242	0.0300	81	80-120			
Lab Batch	#: 975723	Sample: 514404-002 / SMP	Batch	: 1 Matrix	: Soil				
Units:	mg/kg	Date Analyzed: 08/28/15 04:07	SUI	RROGATE R	ECOVERY	STUDY			
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1.4-Difluor	obenzene		0.0243	0.0300	81	80-120			
4-Bromoflu	orobenzene		0.0245	0.0300	98	80-120			
Lab Batch	#: 975861	Sample: 514404-001 / SMP	Batch	• 1 Matrix	: Soil	00-120			
Units:	mg/kg	Date Analyzed: 08/28/15 23:03							
	mg/ng	Dute 111111/2011 00/20/10 25:00	SURROGATE RECOVERT STUDI						
	TPH I	By SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1 Chlorocot	tana	Anarytes	105	200	02	70.125			
a Tambany	1		185	200	95	70-135			
Lob Botch	#• 075861	Sample: 514404.002 / SMP	84.0 Batch	100	• Soil	/0-155			
Lau Datti	π. 975001	Date Analyzed $08/20/15 10:14$	Datch						
	mg/kg	Date Analyzed: 06/29/15 10.14	SU	RROGATE R	ECOVERY	STUDY			
	TPH F	By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	tane		86.2	100	86	70-135			
o-Terpheny	1		41.6	50.0	83	70-135			
Lab Batch	#: 975723	Sample: 697385-1-BLK / BI	LK Batch	: 1 Matrix	: Solid				
Units:	mg/kg	Date Analyzed: 08/28/15 01:35	SUI	RROGATE R	ECOVERYS	STUDY			
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluor	obenzene		0.0260	0.0300	87	80-120			
4-Bromoflu	orobenzene		0.0278	0.0300	93	80-120			

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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


Form 2 - Surrogate Recoveries

Project Name: 1002 Line Release

Work Or	rders : 51440	04, 514404		Project ID	: 7250715029	9							
Lab Batch	#: 975861	Sample: 697484-1-BLK / E	BLK Batch	n: 1 Matrix	: Solid								
Units:	mg/kg	Date Analyzed: 08/29/15 10:59	SU	RROGATE R	ECOVERY	STUDY							
	TPH I	By SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
		Analytes			[D]								
1-Chlorooct	tane		115	100	115	70-135							
o-Terpheny	1		58.8 50.0 118 70-135										
Lab Batch	#: 975723	Sample: 697385-1-BKS / B	KS Batch	n: 1 Matrix	: Solid								
Units:	mg/kg	Date Analyzed: 08/28/15 07:11	SU	RROGATE R	ECOVERY	STUDY							
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
1.4 Diffuor	hangana	Analytes	0.0220	0.0200	110	90.120							
1,4-Diffuoro	obenzene		0.0330	0.0300	110	80-120							
4-Bromofiu	uorobenzene	GL. (07494 1 DVC / D	0.0348	0.0300		80-120							
Lab Batch	#: 9/5861	Sample: 69/484-1-BKS/ E	SKS Batch	i: 1 Matrix	: Solid								
Units:	mg/kg	Date Analyzed: 08/29/15 11:21	SU	RROGATE R	ECOVERY	STUDY							
	TPH I	By SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
		Analytes			נען								
1-Chlorooct	tane		110	100	110	70-135							
o-Terpheny	1		50.0	50.0	100	70-135							
Lab Batch	#: 975723	Sample: 697385-1-BSD / E	SD Batch	n: 1 Matrix	: Solid								
Units:	mg/kg	Date Analyzed: 08/28/15 07:28	SU	RROGATE R	ECOVERY	STUDY							
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
1,4-Difluor	obenzene		0.0311	0.0300	104	80-120							
4-Bromoflu	orobenzene		0.0346	0.0300	115	80-120							
Lab Batch	#: 975861	Sample: 697484-1-BSD / B	SD Batch	n: 1 Matrix	: Solid		•						
Units:	mg/kg	Date Analyzed: 08/29/15 11:44	SU	RROGATE R	ECOVERY	STUDY							
	TPH I	By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
1-Chlorooct	tane		101	100	101	70-135							
o-Terpheny	1		45.2	50.0	90	70-135							

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: 1002 Line Release

Work Or Lab Batch	:ders : 51440 #: 975723	04, 514404 Sample: 514404-001 S / MS	5 Batcl	Project ID: h: 1 Matrix:	7250715029 Soil)	
Units:	mg/kg	Date Analyzed: 08/28/15 00:44	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro	obenzene	111111 J 005	0.0273	0.0300	91	80-120	
4-Bromoflu	orobenzene		0.0312	0.0300	104	80-120	
Lab Batch	#: 975861	Sample: 514404-001 S / MS	S Batel	h: 1 Matrix:	Soil	11	
Units:	mg/kg	Date Analyzed: 08/28/15 23:54	SU	RROGATE R	ECOVERY	STUDY	
	ТРН В	By SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes					
1-Chlorooct	tane		92.8	100	93	70-135	
o-Terpheny	1		40.2	50.0	80	70-135	
Lab Batch	#: 975861	Sample: 514404-001 SD / M	ASD Batcl	h: 1 Matrix:	Soil		
Units:	mg/kg	Date Analyzed: 08/29/15 00:20	SU	RROGATE R	ECOVERY	STUDY	
	TPH B	By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct	tane		97.8	100	98	70-135	
o-Terpheny	1		40.0	50.0	80	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



BS / BSD Recoveries



Project Name: 1002 Line Release

Work Order #: 514404, 514404							Pro	ject ID: ´	725071502	9	
Analyst: PJB	Date Prepared: 08/27/2015					Date Analyzed: 08/28/2015					
Lab Batch ID: 975723 Sample: 697385-1-H	BKSBatch #: 1Matrix: Solid										
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[U]	נען	[E]	Kesuit [F]	[G]				
Benzene	< 0.00100	0.100	0.0801	80	0.100	0.0801	80	0	70-130	35	
Toluene	< 0.00200	0.100	0.0868	87	0.100	0.0867	87	0	70-130	35	
Ethylbenzene	< 0.00100	0.100	0.0986	99	0.100	0.100	100	1	71-129	35	
m_p-Xylenes	< 0.00200	0.200	0.203	102	0.200	0.204	102	0	70-135	35	
o-Xylene	< 0.00100	0.100	0.102	102	0.100	0.104	104	2	71-133	35	
Analyst: JUM	D	ate Prepar	ed: 08/26/201	5	1		Date A	nalyzed: (08/27/2015	•	
Lab Batch ID: 975659 Sample: 697223-1-1	BKS	Batcl	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	50.3	101	50.0	54.2	108	7	90-110	20	

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



BS / BSD Recoveries



Project Name: 1002 Line Release

Work Order	r #: 514404, 514404	Project ID: 7250715029							Ð			
Analyst:	РЈВ	D	ate Prepai	red: 08/27/201	5	Date Analyzed: 08/29/2015						
Lab Batch ID	Sample: 697484-1-1	BKS	Bate	h #: 1					Matrix: S	Solid		
Units:	mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
	TPH By SW8015B Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	ytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
C6-C10 C	Gasoline Range Hydrocarbons	<15.0	1000	910	91	1000	879	88	3	70-135	35	
C10-C28	Diesel Range Hydrocarbons	<15.0	1000	798	80	1000	722	72	10	70-135	35	

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



Form 3 - MS Recoveries



Project Name: 1002 Line Release

Work Order #: 514404									
Lab Batch #: 975723		Proje	ect ID: 7	250715029					
Date Analyzed: 08/28/2015	Date Prepared: 08/27/2015	Date Prepared: 08/27/2015Analyst: PJB							
QC- Sample ID: 514404-001 S	Batch #: 1	Γ	Matrix: S	oil					
Reporting Units: mg/kg	MATRIX /	MATRIX / MATRIX SPIKE RECOVERY ST							
BTEX by EPA 8021B	Parent Sample Spil Result Add	Spiked Sample ke Result led [C]	%R [D]	Control Limits %R	Flag				
Analytes		J							
Benzene	0.0274 0.1	00 0.0655	38	70-130	X				
Toluene	0.0762 0.1	00 0.0942	18	70-130	X				
Ethylbenzene	0.0125 0.10	00 0.0807	68	71-129	X				
m_p-Xylenes	0.146 0.2	00 0.265	60	70-135	X				
o-Xylene	0.0380 0.1	00 0.113	75	71-133					
Lab Batch #: 975659									
Date Analyzed: 08/27/2015	Date Prepared: 08/26/2015	5 A	nalyst: J	UM					
QC- Sample ID: 513742-013 S	Batch #: 1	Γ	Matrix: S	oil					
Reporting Units: mg/kg	MATRIX /	MATRIX SPIKE	RECO	VERY STU	DY				
Inorganic Anions by EPA 300	Parent Sample Spil Result Add	Spiked Sample ke Result led [C]	%R [D]	Control Limits %R	Flag				
Analytes		1							
Chloride	1780 266	50 4840	115	80-120					
Lab Batch #: 975659									
Date Analyzed: 08/28/2015	Date Prepared: 08/26/2015	5 A	nalyst: J	UM					
QC- Sample ID: 514317-005 S	Batch #: 1	Γ	Matrix: S	oil					
Conorting Units, mg/kg		MATRIX / MATRIX SPIKE RECOVERY STUDY							
ceporting Units. mg/kg	MATRIX /								
Inorganic Anions by EPA 300 Analytes	MATRIX / Parent Sample Spil Result [A]	ke Result [c]	%R [D]	Control Limits %R	Flag				



Form 3 - MS / MSD Recoveries

Project Name: 1002 Line Release



Work Order # :	514404						Project II	D: 725071	15029			
Lab Batch ID:	975861 Q	C- Sample ID:	514404	-001 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	Date Analyzed: 08/28/2015		08/27/2	015	An	alyst: F	ЪЪ					
Reporting Units:		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY			
TPH By SW8015B Mod		Parent Sample	Spike	Spiked Sample Result	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes		[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C10 Gasoline	e Range Hydrocarbons	15.6	1000	858	84	1000	838	82	2	70-135	35	
C10-C28 Diesel	Range Hydrocarbons	<15.0	1000	739	74	1000	788	79	6	70-135	35	

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

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

Final 1.001



XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: APEX/Titan	Acceptable Tempe	rature Range: 0 - 6 degC
Date/ Time Received: 08/27/2015 04:47:00 PM	Air and Metal sam	ples Acceptable Range: Ambient
Work Order #: 514404	Temperature Meas	suring device used :
Sample Rec	eipt Checklist	Comments
#1 *Temperature of cooler(s)?		2
#2 *Shipping container in good condition?	•	Yes
#3 *Samples received on ice?	•	Yes
#4 *Custody Seals intact on shipping container/ cooler?		N/A
#5 Custody Seals intact on sample bottles?		N/A
#6 *Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?	•	Yes
#8 Sample instructions complete on Chain of Custody?	•	Yes
#9 Any missing/extra samples?		No
#10 Chain of Custody signed when relinquished/ received?	?	Yes
#11 Chain of Custody agrees with sample label(s)?	•	Yes
#12 Container label(s) legible and intact?	•	Yes
#13 Sample matrix/ properties agree with Chain of Custod	y?	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 inc	h bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4 samples for the analysis of HEM or HEM-SGT which are ver analysts	? Except for rified by the	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, Z	nAc+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:

Date: 08/27/2015

Checklist reviewed by: Mmg Moah Kelsey Brooks

Date: 08/28/2015



APPENDIX E

NMOCD C-141

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

				36	inia r	e, INIVI o/c	005					
			Rele	ease Notific	atio	n and Co	orrective A	ction	l			
L.						OPERA	ГOR		🛛 Initi	al Report		Final Report
Name of Co	mpany E	nterprise Fi	eld Servio	ces LLC		Contact	Dina Babi	nski				
	P	O Box 4324,	Houston	, TX 77210		Telephone 1						
Facility Na	ne <i>Pi</i> į	peline ROW,	, 1002 Ga	thering Lateral		Facility Typ						
Surface Ow	ner Pi	rivate Owne	r	Mineral C	wner	NA - Pipe	line		Lease N	No. NA		
				LOCA	TIO	N OF RE	LEASE					
Unit Letter	Section	Township	Range 28F	Feet from the	North	/South Line	Feet from the	East/V	Vest Line	County Eddu	-	
	1 17	245	202	Latituda: N 32	77797	Longitu	do: W 104.059	29	2436	Luuy		
				Latitude. <u>14 52.</u>	<u>22207</u>		ue: <u>W -104.030.</u>	50				
Turna of Dala	ann Mature	al Can Dinali	n a Tiauidi	INA1	UKE	Velue	LASE	in a l	V-lune T)	7774	
Type of Kele		u ous, ripeu	ne Liquius	ř.		BBL Liqui	ids	JF, I	v olume i	cecovered:	(W/A	
Source of Re	lease Pipe	eline Leak.				Date and F	Iour of Occurrence 5 @ 19:10 MDT	ce	Date and 03/11/202	Hour of Dis	covery MDT	,
Was Immedi	ate Notice C	Siven?				If YES, To	Whom?	I	00/1/20203			
			Yes	No 🛛 Not Re	quired							
By Whom?						Date and H	lour			-		
Was a Water	course Reac	hed?	Ves 🕅	No		If YES, Vo	olume Impacting t	the Wate	rcourse.			
16 - 117-4	T		9									
If a watercou	irse was Imj	pacted, Descri	ibe Fully.*									
Describe Cau	se of Proble	em and Reme	dial Actior	1 Taken.*								
Pipeline leak	was detecto	ed by an Ente	rprise tech	nician. Pipeline	segme	ent was isolate	d and blown dow	n, and l	eaking por	tion was rep	oaired.	
Describe Are	a Affected a	and Cleanup A	ction Tak	en *								
Liquid spill o	ccurred wit	thin pipeline	ROW. Cle	anup activities ar	e curre	ently being pe	rformed and addi	itional se	ampling he	ıs been requ	ested	o confirm
cleanup is sa	tisfactory.											
I hereby certi	fy that the in	nformation gi	ven above	is true and compl	ete to t	he best of my	knowledge and u	nderstan	d that purs	uant to NM	OCD r	ules and
public health	or the envir	onment The	accentanc	d/or file certain re	elease r	NMOCD m	a perform correc	eport" de	ons for reli	eve the oper	may e	ndanger Fliability
should their c	perations h	ave failed to a	dequately	investigate and re	mediat	te contaminati	on that pose a three	eat to gr	ound water	surface wa	ter, hu	man health
or the enviror	iment. In ad	ddition, NMO	CD accept	tance of a C-141 r	eport d	loes not reliev	e the operator of 1	responsil	bility for co	ompliance w	ith an	/ other
federal, state,	or local law	vs and/or regu	lations.									
1		16	/ 10				OIL CONS	SERV.	ATION	DIVISIC	N	
Signature:		V. tu	A									
Printed Name	: Jon E.	Fields				Approved by	District Supervise	or:				
Title:	Direct	or, Field Env	ironmenta	ıl		Approval Dat	e:	E	Expiration I	Date:		
E-mail Addre	ss: <i>jefield</i>	s@eprod.com	!		-	Conditions of	Approval-				_	
Date: 3-14-	2015	Phone: 714				Conditions Of	raphona,	Attached				
Daw. 🗸 🔽	- VI V	+ 110110° - 13.2	-JU1-0004	· · · · · · · · · · · · · · · · · · ·								

* Attach Additional Sheets If Necessary

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Santa]	Fe, NM 87505						
Release Notification	on and Corrective A	ction					
	OPERATOR	🖂 Initia	al Report 🔲 Final Report				
Name of Company Enterprise Field Services LLC	Contact Dina Ferg	uson					
PO Box 4324, Houston, TX 77210	Telephone No. 210-528-3824						
Facility Name Pipeline ROW, 1002 Gathering Lateral	Facility Type: Gas Gather						
Surface Owner Private Owner Mineral Owner	NA - Pipeline	lo. NA					
LOCATIO	ON OF RELEASE						
Unit LetterSectionTownshipRangeFeet from theNortC1424S28E480	h/South Line Feet from the South 55	East/West Line East	County Eddy				
Latitude: <u>N 32.2228</u> 2	Z Longitude: <u>W-104.0583</u>	<u>38</u>					
NATURI	E OF RELEASE						
Type of Release Natural Gas, Pipeline Liquids	Volume of Release: 251 MC BBL Liquids (updated)	CF, 7 Volume R	ecovered: N/A				
Source of Release <i>Pipeline Leak</i> .	Date and Hour of Occurrence 03/11/2015 @ 19:10 MDT	Date and I 03/11/201	Hour of Discovery 5 @ 19:10 MDT				
Was Immediate Notice Given?	If YES, To Whom?						
By Whom?	Date and Hour						
Was a Watercourse Reached?	If YES, Volume Impacting t	he Watercourse.					
If a Watercourse was Impacted, Describe Fully.*							
Describe Cause of Problem and Remedial Action Taken *			· · · · · · · · · · · · · · · · · · ·				
Describe cause of Problem and Remedial Action Taken,							
Pipeline leak was detected by an Enterprise technician. Pipeline segme	ent was isolated and blown dow	n, and leaking port	tion was repaired.				
Describe Area Affected and Cleanup Action Taken.*							
Liquid spill occurred within pipeline ROW. Operations personnel origi pipeline right-of-way. After further investigation and excavation, it wa Cleanup activities are currently being performed and additional sample	inally estimated approximately is s determined that the liquid spil ing has been requested to confil	l bbl pipeline liquid l volume is approxi rm cleanup is satisj	ls spilled to the ground within imately 7 bbl pipeline liquids. factory.				
I hereby certify that the information given above is true and complete to regulations all operators are required to report and/or file certain release public health or the environment. The acceptance of a C-141 report by the should their operations have failed to adequately investigate and remedia or the environment. In addition, NMOCD acceptance of a C-141 report of federal, state, or local laws and/or regulations.	the best of my knowledge and un notifications and perform correct he NMOCD marked as "Final Re- te contamination that pose a three does not relieve the operator of r	nderstand that pursu tive actions for rele- eport" does not relie eat to ground water, esponsibility for co	ant to NMOCD rules and ases which may endanger eve the operator of liability surface water, human health mpliance with any other				
	OIL CONS	SERVATION	DIVISION				
Signature: Von Vielde							
Printed Name: Jon E. Fields	Approved by District Supervise	»r:					
Title: Director, Field Environmental	Approval Date:	Expiration D	Pate:				
E-mail Address: jefields@eprod.com	Conditions of Approval:		Attached				
Date: 10-29-15 Phone: 713-381-6684							

* Attach Additional Sheets If Necessary



APPENDIX F

Waste Disposal Manifests

1002 CLEANUS											
LEA LAND DISPOSAL SITE NEW MEXICO MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048											
LEA LAND, LLC 1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257											
NON	-HAZARDOUS WASTE MANIE	EST NO	10646	1. PAC	JEOF	2. TRAIL	ER NO.	14			
0	3. COMPANY NAME	4. ADDRESS			5. PI	CK-UP DATE					
G	PHONE NO.	CITY	STATE	2	ZIP 6. TT	NRCC I.D. NO					
E						0. TOTU	IA LIBUT				
	7. NAME OR DESCRIPTION OF WASTE SHIPPE	D:		No.	Type	QUANTITY	Wt/Vol.	WASTE ID #			
N	a.										
Б	b.										
R ^{d.}											
12. COMMENTS OR SPECIAL INSTRUCTIONS: 13. WASTE PROFILE NO.											
A IN CASE OF EMERCENCY OF SHILL CONTACT											
т	I4. IN CASE OF EMERGENCY OR SPILL, CONTACT T NAME PHONE NO 24-HOUR EMERGENCY NO.										
-											
0	15.GENERATOR'S CERTIFICATION: shipping name and are classified, packed, marked, an international and national government regulations, in	I Hereby declare that d labeled, and are in al cluding applicable stat	respects in proper con e regulations, and are	nsignmen ndition fo the same	r transport l materials p	by highway acc	ording to a by LE	pplicable A LAND, LLC			
R	PRINTED/TYPED NAME		SIGNATURE					DATE			
Т	16. TRANSPORTER (1)		17.	TR	ANSPO	RTER (2)					
R A	NAME:		NAME:								
N S	TEXAS I.D. NO.		TEXAS I.D. NO.								
P O	IN CASE OF EMERGENCY CONTACT:		IN CASE OF EME	RGENCY	Y CONTAC	Τ:					
R T	18. TRANSPORTER (1): Acknowledgment (of receipt of material	19. TRANSPOR	RTER ((2): Acknow	wledgment of i	eceipt of n	aterial			
Ē	PRINTED/TYPED NAME	Exc & c	PRINTED/TYPED	NAME	_						
S	SIGNATURE	DATE	SIGNATURE				DATE				
		ADDRESS:				PHONE:					
DF	Lea Land, LLC	Mile 30 N	Marker 64, U.	S. Hw	y 62/18 I NM	0,	575-88	7-4048			
I A S C P I	PERMIT NO. WM-01-035 - New Mex	rico	20. COMMENTS	115040	<u>, , , , , , , , , , , , , , , , , , , </u>						
0 L S 1 A T	L 21.DISPOSAL FACILITY'S CERTIFICATION: I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.										
LY	AUTHORIZED SIGNATURE		CELL NO.		DATE		TI	ME			
	Z = 1 = 1		and the second					1.4			
GENER	ATOR: COPIES 1 & 6	DISPOSAL SITI	COPIES 2 & 3			TRANSI	PORTERS:	COPIES 4 & 5			

_							10	02,	CLEV	INCUP
	LEA LAND DIS MILE MARKER #64 US HWY	62/180 ·	SA] 30 MILES	L SITE	N]	EV	V N E (575) 8	AE 87-4048	XIC	0
		LE	A LA	ND, LLC						
	1300 WEST MAIN ST	REET • C	OKLAHOM	A CITY, OK 73106 • I	PHONE (405) 2	36-4257		1.10	
NO	N-HAZARDOUS WASTE MANIF	EST	NO	110647	I. PA	GE	_OF	2. TRAIL	ER NO.	0
G	3. COMPANY NAME	4. ADDF	RESS				5. PICK	-UP DATE		
	PHONE NO.	СІТҮ		STATE		ZIP	6. TNR	CC I.D. NO		
E					0.001					
	7. NAME OR DESCRIPTION OF WASTE SHIPPE	:D:			8. CON No.		ERS 9 De QU	TOTAL JANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
N	a.									
F	b.		06							
Ľ	c.									
R	d.									
	12. COMMENTS OR SPECIAL INSTRUCTIONS:						13.	WASTE P	ROFILE NO	<u>. </u>
A										
т	I4. IN CA NAME	SE OF	EMERG E NO	ENCY OR SPIL	L, CON	NTAC	<u>.</u>	24-HOUR	EMERGE	NCY NO.
		- 200	使利							
0	15. GENERATOR'S CERTIFICATION: shipping name and are classified, packed, marked, and international and national government regulations, in	l Hereby o l labeled, a cluding ap	declare that and are in al oplicable sta	the contents of this could respect in proper content to regulations, and are	nsignmer adition fo the same	nt are f or trans materi	ully and port by h ials previ	accurately o ighway acco ously appro	described al ording to ap wed by LE#	pove by proper oplicable A LAND, LLC
R	PRINTED/TYPED NAME			SIGNATURE						DATE
Т	16. TRANSPORTER (1)			17.	TR	ANS	PORT	ER (2)		
R A	NAME:			NAME:						
N S	TEXAS I.D. NO.			TEXAS I.D. NO.						
P	IN CASE OF EMERGENCY CONTACT:			IN CASE OF EME	RGENCY	CON	TACT:			
R	EMERGENCY PHONE: 18. TRANSPORTER (1): Acknowledgment o	f receipt o	of material	EMERGENCY PHO	<u>DNE:</u>	2): A	knowled	gment of r	eceint of m	aterial
E	PRINTED/TYPED NAME			PRINTED/TVRED	NAME				outpe of in	
R S	SIGNATURE		- 305		inninit _					_
	SIGNATURE	DATE		SIGNATURE				D,	ATE	
	Lea Land, LLC	ADDK	Mile	Marker 64, U.S	S. Hwy	y 62/	180,	PHONE:	575-881	7-4048
D F I A			30 N	files East of Ca	rlsbad	, NM	1			
SC PI OL	WM-01-035 - New Mexi	co		20. COMMENTS						
S I A T	21.DISPOSAL FACILITY'S CERTIFICA facility is authorized and permitted to receive such wa	ATION: astes.	I Hereby c	ertify that the above de	scribed v	wastes	were del	vered to the	is facility, tl	hat the
LY	AUTHORIZED SIGNATURE	æ		CELL NO.		D	ATE		TIM	IE
	$A = F^{0}$, F^{0} , F^{0} ,	177		a manufacture and the second						-
JENER/	ATOR: COPIES 1 & 6	DISPO	OSAL SITE	COPIES 2 & 3				TRANSPO	RTERS	OPIES 4 & 5

_	1002 CLEAN UP											
LEA LAND DISPOSAL SITE NEW MEXICO MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048												
LEA LAND, LLC												
1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257												
NOI	N-HAZARDOUS WASTE MANIF	EST	NO	110619	I. PA	GE_OF	2. TRAIL	.er no.	14			
	3. COMPANY NAME	4. ADDI	RESS			5.	. PICK-UP DATE					
	PHONE NO.	CITY		STATE		ZIP 6.	5. TNRCC I.D. NO.					
E												
	7. NAME OR DESCRIPTION OF WASTE SHIPPE		8. CON No.	TAINERS	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #					
N	a.											
F	b.											
E	c.											
R	a. 41 r 41 0	1474	0									
	12. COMMENTS OR SPECIAL INSTRUCTIONS:						13. WASTE PROFILE NO.					
A												
	14. IN CA	SE OF	EMERO E NO	ENCY OR SPIL	L, CO	NTACT	24-HOUR	EMERGENCY NO.				
Т												
0	15.GENERATOR'S CERTIFICATION: 1 Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable											
	international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC											
R	PRINTED/TYPED NAME	RINTED/TYPED NAME				SIGNATURE DATE						
Т	16. TRANSPORTER (1)			17. TRANSPORTER (2)								
R A	NAME:			NAME:								
N	TEXAS I.D. NO.	TEXAS I.D. NO.										
P	IN CASE OF EMERGENCY CONTACT:	IN CASE OF EMERGENCY CONTACT:										
R	EMERGENCY PHONE: 18. TRANSPORTER (1): Acknowledgment of	EMERGENCY PHONE: 19. TRANSPORTER (2): Acknowledgment of receipt of material										
T E				PRINTED/TYPED NAME								
R S												
	SIGNATURE DATE			SIGNATURE				DATE				
	Lea Land, LLC Mile 30 M			e Marker 64, U.S. Hwy 62/180, 575-887-4048								
D F I A				viles East of Carlsbad, NM								
S C P I	PERMIT NO. WM-01-035 - New Mexico			20. COMMENTS								
S I A T	21. DISPOSAL FACILITY'S CERTIFICATION: 1 Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.											
LY	AUTHORIZED SIGNATURE			CELL NO.		DAT	Е	TI	ME			
		1/						ODTERS	CONFRICT			
GENER	ATOK: COPIES 1 & 6	DISI	POSAL SIT	E: COPIES 2 & 3			TRANSP	ORTERS:	COPIES 4 & 5			

COPY 5

_					100	20	LEAL) UP	_		
LEA LAND DISPOSAL SITE NEW MEXICO MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048											
	1300 WEST MAIN ST	LE TREET • 0	CA LA	ND, LLC A CITY, OK 73106 • F	PHONE (405) 236-4	257		0		
NO	N-HAZARDOUS WASTE MANIF	NO	110618	GEOF_	2. TRAILER NO.						
~	3. COMPANY NAME	4. ADD	RESS		-	5. P	5. PICK-UP DATE 6. TNRCC I.D. NO.				
G	PHONE NO.	CITY		STATE		ZIP 6. T					
E	7. NAME OR DESCRIPTION OF WASTE SHIPPE	ED:	5		8. CON	TAINERS	S 9. TOTAL 10. UNIT 11. TEXAS				
N	a.				No. Type		QUANTI	TY Wt/Vol.	WASTE ID #		
9	b.										
E	c. 21110 21110 12100							_			
	d.						-	_			
R	12 COMMENTS OF SPECIAL INSTRUCTIONS.						12 WAS		0		
A	LE COMMENTO ON DELCINE INSTRUCTIONS.						15. WAS	IS. WASTET KOLLE NO.			
	14. IN CASE OF EMERGENCY OR SPILL, CONTACT										
Т	NAME PHONE NO. 24-HOUR EMERGENCY NO.										
0	15.GENERATOR'S CERTIFICATION: I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LFA LAND LLC.										
R	PRINTED/TYPED NAME			SIGNATURE DATE							
T R A N	16. TRANSPORTER (1) NAME: TEXAS I.D. NO.			17. TRANSPORTER (2) NAME: TEXAS I.D. NO.							
S P	IN CASE OF EMERGENCY CONTACT:	IN CASE OF EMERGENCY CONTACT:									
O R	EMERGENCY PHONE:	EMERGENCY PHONE:									
T E R S	18. IKANSPURIEK (1): Acknowledgment of receipt of material PRINTED/TYPED NAME			19. TRANSPORTER (2): Acknowledgment of receipt of material PRINTED/TYPED NAME							
	SIGNATURE			SIGNATURE DATE							
DF IA SC PI OL SI AT LY	Lea Land, LLC Address: Mile			PHONE:							
				Marker 64, U.S. Hwy 62/180, 575-887-4 Ailes East of Carlshad NM							
	PERMIT NO. WM-01-035 - New Mexico										
	21. DISPOSAL FACILITY'S CERTIFICATION: I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.										
	AUTHORIZED SIGNATURE			CELL NO.	DATE TIME						
212211210		1			-	-					