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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report X Final Report

Name of Company: Cimarex Energy Company	Contact: Johnny Titsworth
Address: 600 N. Marienfield, Suite 600, Midland, TX 79701	Telephone No.: (432)250-2059
Facility Name: Zafiro State 32 Com #1	Facility Type: Tank Battery

Surface Owner: State	Mineral Owner:	API No.: 30-025-34508

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	32	18	34	2310	FNL	1980	1980	Lea

Latitude: 32.70510 **Longitude:** -103.58040

NATURE OF RELEASE

Type of Release: Condensate	Volume of Release: 49 BBL	Volume Recovered:
Source of Release: Load Line	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? X Yes ☐ No ☐ Not Required	If YES, To Whom? Johnny Titsworth	
By Whom? Mark Bishop	Date and Hour 12/12/13 1400	
Was a Watercourse Reached? ☐ Yes X No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Unknown person maliciously or accidentally caused 3" load line to be pulled from Victaulic connection to be pulled out of connection to water tank.

Describe Area Affected and Cleanup Action Taken.*
Impacted area was excavated to a depth of 8 feet bgs and transported to the Lea Land disposal facility. A reinforced plastic liner was placed at a depth of 4 feet bgs and backfilled with clean material. Confirmation soil samples confirmed vertical and horizontal limits of excavation were below NMOCD thresholds.

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

Signature: Melissa Decker	OIL CONSERVATION DIVISION	
Printed Name: Melissa Decker on behalf of Cimarex Energy	Approved by Environmental Specialist:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: mdecker@talonlpc.com	Conditions of Approval:	Attached ☐
Date: 08/1/2014 Phone: (831)345-2422		

* Attach Additional Sheets If Necessary

Cimarex Energy

Soil Closure Report

Zafiro State 32 COM #1

Prepared for:

Johnny Titsworth
600 North Marienfield Suite 600
Midland, Texas, 79706

Prepared by:

Melissa Decker
2901 State Highway 349
Midland, Texas 79706

CLOSURE REPORT

ZAFIRO STATE 32 COM #1
26.7 MILES WEST OF HOBBS, NEW MEXICO
HOBBS, LEA COUNTY, NEW MEXICO

TALON/LPE PROJECT NO. 701162.053.01

PREPARED FOR:
CIMAREX ENERGY
600 NORTH MARIENFIELD SUITE 600
MIDLAND, TX 79701

Prepared By:

Melissa Decker
Melissa Decker
Project Manager

Shane Curie, PG
Shane Curie, PG
Professional Geologist

Talon/LPE
2901 State Highway 349
Midland, Texas 79706

June 3, 2014

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

1.1 Objectives and Site Background

Talon/LPE (Talon) was retained by Cimarex Energy (Cimarex) to provide environmental consulting services at the Cimarex operated Zafiro State 32 Com #1 (site). The purpose of this report is to document remediation and site restoration activities undertaken regarding the release of condensate at the subject site.

The site is located approximately 26.7 miles west of the city of Hobbs, in Lea County, New Mexico. The GPS coordinates for the site are 32.70510º North latitude and 103.58040º West longitude. A condensate release occurred as a result of a faulty load line. Remediation activities occurred on site following guidance drafted by the New Mexico Energy, Natural Resources Department (EMNRD), New Mexico Oil Conservation Division (OCD) rules (*NMAC 19.15.30 Remediation and NMAC 20.6.2 Ground and Surface Water Protection*) and the New Mexico EMNRD OCD *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

On December 12, 2013, a release of condensate and produced water occurred at the referenced site from a faulty load line connection to a water tank. The release was determined to be approximately 49 barrels (bbl) of oil condensate lost with zero (0) bbl recovered. Cimarex completed a C-141 Release Notification and Corrective Action Report on December 12, 2013. The release impacted the surface area located inside the unlined containment firewall of the tank battery. The impacted area ranged from two (2) to six (6) feet wide and approximately 18 feet in length inside the firewall containment. The release also breached the containment and spilled onto the surrounding land surface. The impacted surface area measured one (1) to four (4) feet wide and 12 feet in length. A Topographic Map depicting the location of the Site is included as Figure 1. An Aerial Photograph of the Site is attached as Figure 2. Site Details are provided as Figure 3.

1.2 NMOCD Site Classification

The site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to crude oil 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 19-15-30 Remediation. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

A search of the New Mexico Water Rights (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE), did not provide information for Section 32, Township 18S, Range 34. A search of nearby locations provided information indicating that groundwater should be encountered at approximately 50 feet below ground surface (bgs). A search of the NMWRRS database indicated there are no water wells within 1000 feet of the

release. There are no surface water bodies within 5000 feet of the release. Based on depth to groundwater and proximity to surface water, guidelines for this release site are listed below:

Compound	**Remediation Threshold**
Benzene	10 mg/Kg (ppm)
BTEX	50 mg/kg (ppm)
TPH	100 mg/kg (ppm)

2.0 INITIAL SITE ACTIVITIES

On December 23, 2013, Talon personnel conducted an initial assessment of the site. A Third Party had previously excavated the impacted soils inside the containment as well as the land surface. The Third Party had excavated a depth of 10 to 12 inches bgs and transported 36 cubic yards of impacted soil to Sundance Services, an approved disposal facility. A new layer of clean gravel was placed inside the tank battery firewall.

3.0 DELINEATION ACTIVITIES

3.1 Vertical Delineation Activities

On January 13, 2014, Talon personnel collected initial assessments of soil contaminant levels through the advancement of soil borings from three (3) discreet locations (designated as BH1, BH2, and BH3) at one (1) foot intervals to a depth of six (6) feet bgs to document the vertical extent of the impacted soil. The samples were analyzed for concentration of benzene, toluene, ethylbenzene and total xylenes (BTEX) and Total Petroleum Hydrocarbons (TPH) using Texas Method TX1005 extended to C_{35}. The sample locations are documented on Figure 3. Initial laboratory analysis showed that the TPH concentration for BH2 and BH3 exceeded the allowable limit of 100 mg/Kg.

On February 6, 2014, Talon personnel conducted a second round of soil borings using a hand auger to assess the depth of impacted material. Seven (7) soil boring samples were advanced to different depths ranging from surface to eight (8) feet below ground surface (bgs). Talon personnel experienced hand auger refusal at eight (8) feet bgs. The samples were analyzed for TPH concentration. Analytical results showed the TPH concentration was well above the EMNRD OCD required level of 100 mg/Kg. Copies of the laboratory analytical results and proper chain of custody documentation are presented in Appendix D. A summary of the confirmation soil sample analytical results is presented on Table 1.

3.2 Test Trench Activities

On April 9, 2014, Talon personnel excavated a test trench in order to attempt vertical delineation. The test trench was installed east of the tank battery in the impacted surface area. The test trench was excavated to a depth of 14 feet bgs. Two (2) samples were collected and designated as 13' BGS and 14' BGS. The samples were analyzed for concentration of BTEX and TPH. Initial analytical results, for the two (2) samples collected on April 9, 2014, indicated that the TPH concentration was below laboratory detectable limits. These samples established the vertical delineation of the release. Copies of the laboratory analytical results and proper chain of custody documentation are presented in Appendix D. A summary of the confirmation soil sample analytical results is presented on Table 1.

3.3 Site Visit

On April 30, 2014, a site meeting was conducted with Talon personnel, Cimarex personnel, and an NMOCD Environmental Specialist. As a result of the site visit, guidelines were established for the remediation of the site. In order to preserve the structural integrity of the tank battery infrastructure, the proposed excavation was to be limited to eight (8) feet bgs. Talon personnel submitted a work plan to Cimarex personnel and the NMOCD Environmental Specialist to document the intended scope of remediation for the site.

4.0 SOIL EXCAVATION AND BACKFILL ACTIVITIES

4.1 Excavation Activities

On June 2, 2014, Talon personnel conducted excavation activities at the site. Talon personnel excavated the impacted area east of the tank battery to a depth of eight (8) feet bgs utilizing a trackhoe. The excavation area measured approximately 20 feet in length and 12 feet in width. Talon transported 80 cubic yards of excavated material to Lea Land, an approved disposal facility. The excavated area is depicted in Figure 4 of Appendix A.

4.2 Backfill, Compaction, and Site Grading Activities

The excavation area was backfilled with clean caliche to a depth of four (4) feet bgs. The caliche was provided by Cimarex using material gathered from the adjacent well pad. A 20 millimeter reinforced liner was placed at a depth of four (4) feet bgs to prevent further distribution of the contaminated area. The remaining excavation area was backfilled with material collected from the surrounding sand dunes which contain native seeds and vegetation. The site was backfilled, compacted, and graded to match pre-spill conditions. Backfill and compaction of the site was achieved by utilizing a trackhoe and a backhoe.

5.0 SAMPLING ACTIVITIES

5.1 Sample Collection

Following excavation activities, confirmation soil samples were collected on June 2, 2014. One (1) bottomhole confirmation sample was collected and designated as BH-1. Four (4) sidewall confirmation samples were collected from the four cardinal directions of the excavation (designated as SW-N, SW-S, SW-W, and SW-E). The soil samples were collected by Talon personnel using industry accepted standard operating procedures. These procedures include wearing new, clean nitrile gloves, and collecting laboratory samples using decontaminated or disposable hand tools (when applicable) to prevent cross-contamination.

Talon personnel collected soil samples for BTEX and TPH concentrations. The sample designated as BH was also submitted for analysis of chloride concentration. The samples were collected in laboratory provided sample containers, immediately placed in an ice-chilled cooler, and transported to TraceAnalysis in Midland, Texas.

5.2 Analytical Results

Initial laboratory analytical results indicated that TPH concentrations (C_6-C_{35}) of the samples designated as SW-N, SW-E, and SW-S were less than 50.0 mg/Kg and the BTEX concentration was below the remediation threshold. The sample designated as SW-W contained a TPH concentration of 1,182 mg/Kg. The TPH concentration for the sample designated as BH-1 was determined to be 12,390 mg/Kg. The samples designated as BH-1 and SW-W both contained a TPH concentration above the remediation threshold; however, the structural integrity of the tank battery did not allow for further excavation in these areas. The sample designated as BH-1 contained a chloride concentration of 27 mg/Kg.

Copies of the laboratory analytical results and chain of custody documentation are presented in Appendix D. A summary of the excavation confirmation soil sample analytical results are presented on Table 2 and Table 3 in Appendix B.

6.0 CONCLUSION

6.1 Conclusions

- A crude oil release was reported by Cimarex at the site on December 12, 2014, as a result of a faulty load line. Cimarex personnel estimated that 49 bbl of condensate were released and zero (0) bbl were recovered, resulting in a net loss of 49 bbl of condensate.

- Following initial delineation activities, a site visit occurred on April 30, 2014. Talon personnel, Cimarex personnel, and an NMOCD Environmental Specialist were present at the meeting. A remediation plan was discussed and agreed upon following the meeting.

- Excavation activities were conducted by Talon personnel on June 2, 2014, and excavated material was transported to Lea Land in Carlsbad, New Mexico.

- The excavation area was backfilled with uncontaminated caliche to a depth of four (4) feet bgs. The caliche was provided by Cimarex using material gathered from the adjacent well pad.

- A liner was placed at a depth of four (4) feet bgs to prevent further distribution of the contaminate. The remaining excavation area was backfilled with material collected from the surrounding sand dunes which contain native seeds and vegetation.

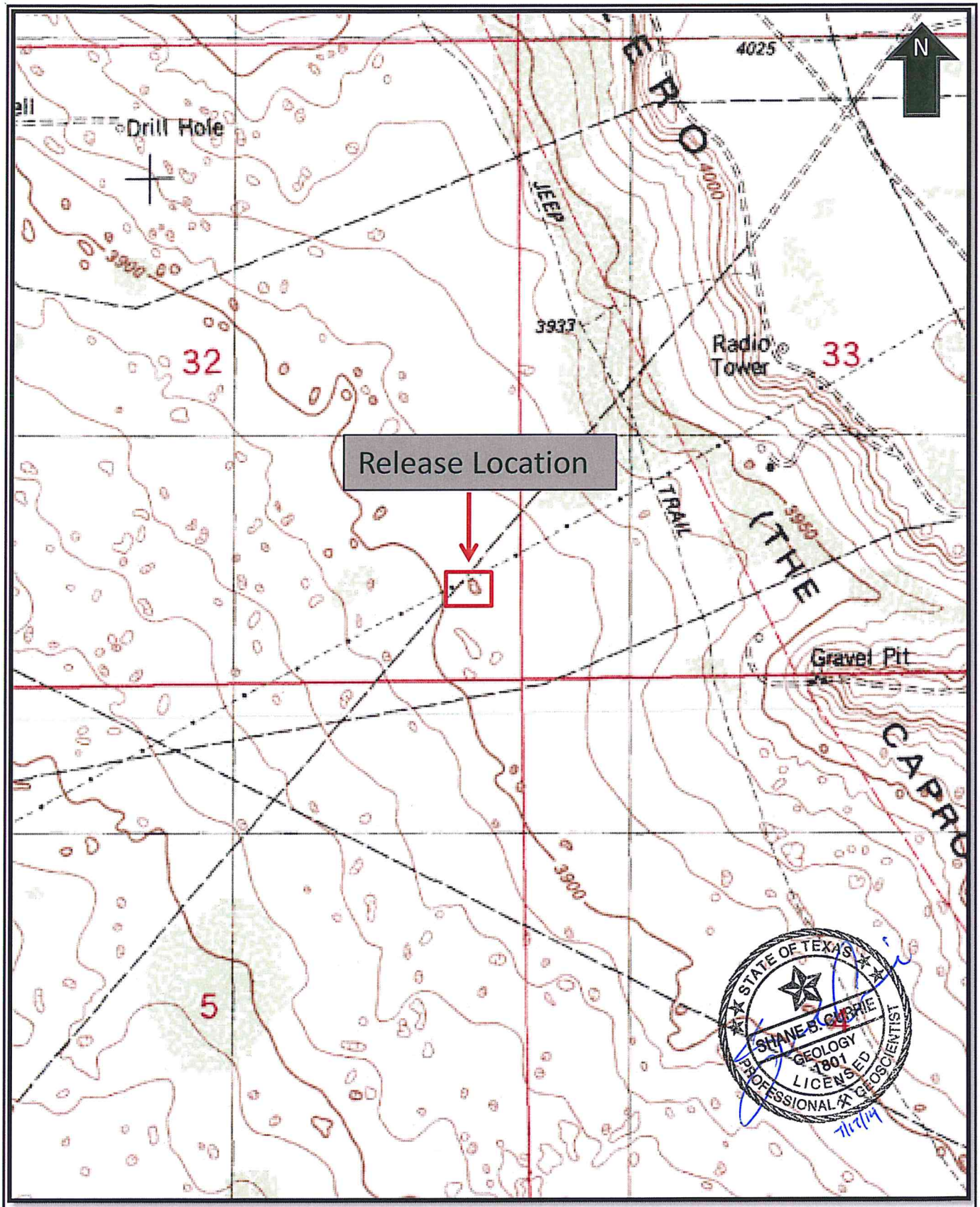
6.2 Recommendations

Based on laboratory analytical results of soil samples collected from the excavation limits, the horizontal and vertical extent of the release are in accordance with the remediation plan discussed on April 30, 2014.

This report will be the final documentation regarding the release. Based on the remediation activities and data presented in this report, no further action is proposed for this site.

APPENDIX A

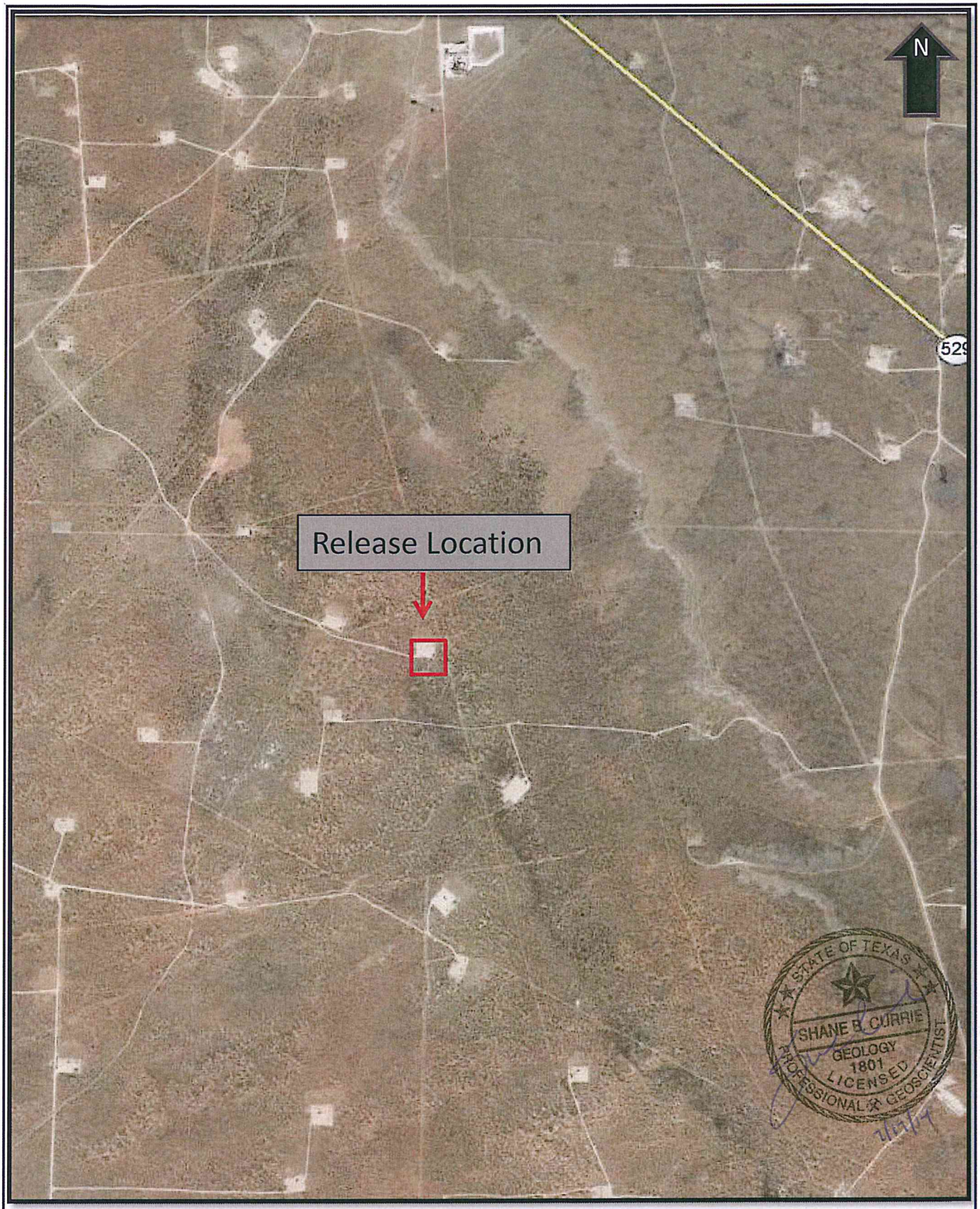
FIGURES



TALON LPE

Date:	06/03/2014
Scale:	1:24,000
Drawn By:	MMD

FIGURE 1
TOPOGRAPHIC MAP
Zafiro State 32 COM #1
26.7 miles west of Hobbs, New Mexico
Prepared For: Cimarex Energy



TALON LPE

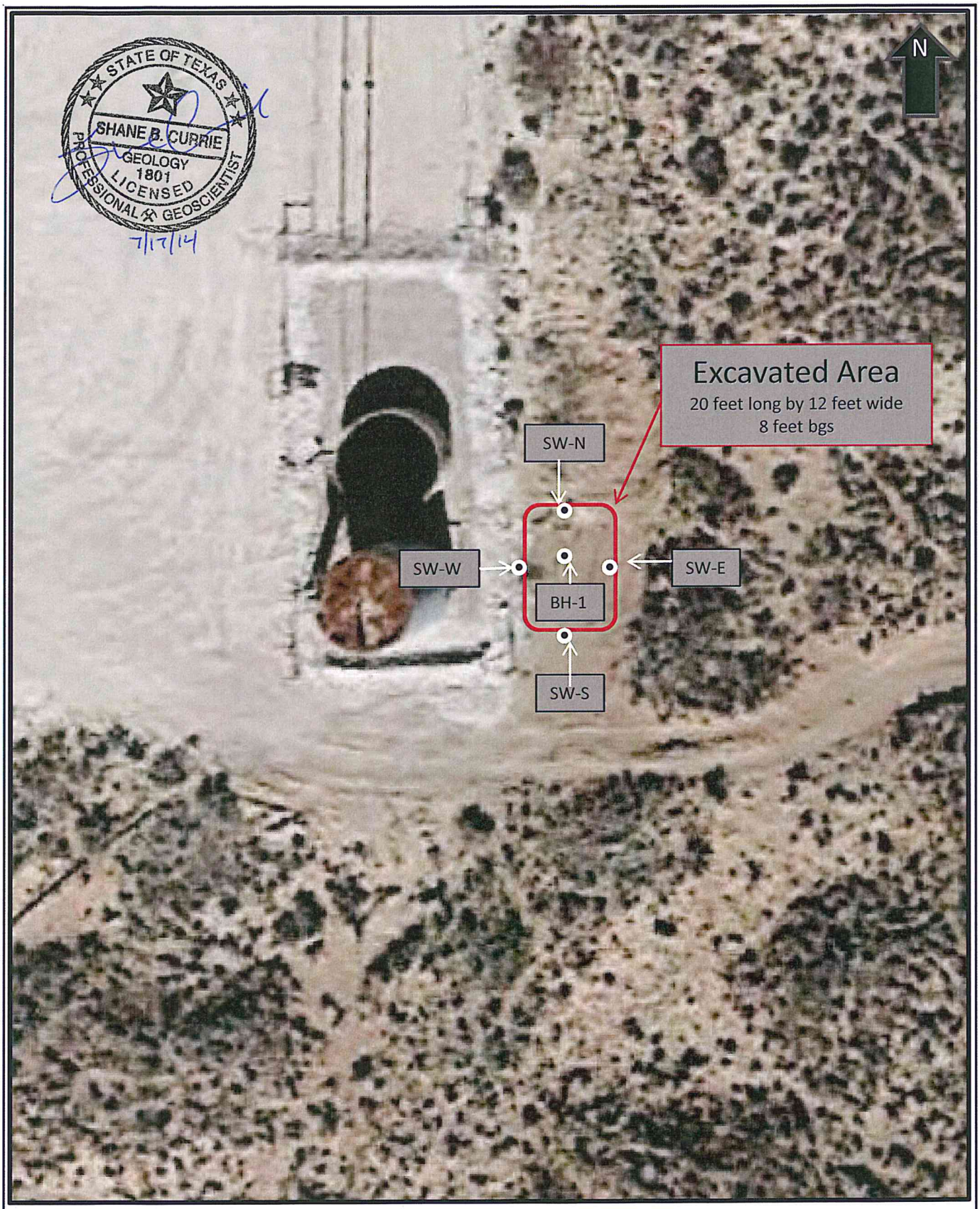
Date:	06/03/2014
Scale:	Not to Scale
Drawn By:	MMD

FIGURE 2
AERIAL MAP
Zafiro State 32 COM #1
26.7 miles west of Hobbs, New Mexico
Prepared For: Cimarex Energy

TALON LPE

Date:	06/03/2014
Scale:	Not to Scale
Drawn By:	MMD

FIGURE 3
DELINEATION SITE DETAILS
Zafiro State 32 COM #1
26.7 miles west of Hobbs, New Mexico
Prepared For: Cimarex Energy



Date:	06/03/2014
Scale:	Not to Scale
Drawn By:	MMD

FIGURE 4
EXCAVATION SITE DETAILS
Zafiro State 32 COM #1
26.7 miles west of Hobbs, New Mexico
Prepared For: Cimarex Energy

APPENDIX B

TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA- DELINEATION ACTIVITIES
CONCENTRATIONS OF TPH & BTEX IN SOIL
ZAFIRO STATE 32 COM #1
CIMAREX ENERGY
26.7 MILES WEST OF HOBBS, NEW MEXICO
TALON/LPE PROJECT NUMBER: 701162.053.01

SAMPLE LOCATION	SAMPLE DATE	METHOD: 8015M			METHOD: 8021			
		DRO (mg/Kg)	GRO (mg/Kg)	TOTAL TPH (mg/Kg)	Benzene	Toulene	Ethyl-benzene	Total Xylenes
BH-1 1ft	1/13/2014	<50.0	<4.0	<54.0	<0.0200	<0.0200	<0.0200	<0.0500
BH-2 1ft	1/13/2014	1,790	11,600	**13,390**	10	302	55	424
BH-2 2ft	1/13/2014	3,090	31,600	**34,690**	**74**	1,170	206	1,540
BH-2 3ft	1/13/2014	82	20	**102**	<0.0200	0	<0.0200	0
BH-3 1ft	1/13/2014	906	11,900	**12,806**	**11**	299	43	408
BH-3 2ft	1/13/2014	1,520	11,900	**13,420**	10	234	38	341
BH-3 3ft	1/13/2014	1,880	10,100	**11,980**	**11**	210	33	296
BH-3 4ft	1/13/2014	1,900	15,000	**16,900**	**14**	336	46	462
BH-3 5ft	1/13/2014	2,580	40,900	**43,480**	**62**	692	112	823
BH-3 6ft	1/13/2014	2,770	32,900	**35,670**	**48**	830	90	980
BH-3B Surface	2/6/2014	1,090	209	**1,299**	-	-	-	-
BH-3B 2ft	2/6/2014	2,770	5,150	**7,920**	-	-	-	-
BH-3B 4ft	2/6/2014	5,740	32,000	**37,740**	-	-	-	-
BH-3B 5ft	2/6/2014	3,890	14,600	**18,490**	-	-	-	-
BH-3B 6ft	2/6/2014	2,820	7,800	**10,620**	-	-	-	-
BH-3B 7ft	2/6/2014	3,490	9,760	**13,250**	-	-	-	-
BH-3B 8ft	2/6/2014	7,850	18,600	**26,450**	-	-	-	-
13 " BGS	4/14/2014	<50.0	<4.00	<54.0	<0.0200	<0.0200	<0.0200	<0.0200
14 " BGS	4/14/2014	<50.0	<4.00	<54.0	<0.0200	<0.0200	<0.0200	<0.0200
Remedial Threshold				**100**	**10**			

* **Bolded** values are in excess of the NMOCD Remediation Thresholds

TABLE 2

SUMMARY OF ANAYTICAL DATA- EXCAVTION ACTIVITIES
CONCENTRATIONS OF TPH & BTEX IN SOIL

ZAFIRO STATE 32 COM #1
CIMAREX ENERGY
26.7 MILES WEST OF HOBBS, NEW MEXICO

TALON/LPE PROJECT NUMBER: 701162.053.01

SAMPLE LOCATION	SAMPLE DATE	METHOD: 8015M			METHOD: 8021			
		DRO (mg/Kg)	GRO (mg/Kg)	TOTAL TPH (mg/Kg)	Benzene	Toulene	Ethyl-benzene	Total Xylenes
BH-1	6/2/2014	2,220	9,170	11,390	**13**	111	53	308
SW-N	6/2/2014	<50.0	<4.0	<54	0.601	2.36	2.74	17.6
SW-E	6/2/2014	<50.0	<4.0	<54	0.0284	0.145	0.105	0.332
SW-S	6/2/2014	<50.0	<4.0	<54	<0.0200	0.042	<0.0200	0.144
SW-W	6/2/2014	648	543	**1,191**	<0.0200	<0.0200	0.0282	0.0906
Remedial Threshold				**100**	**10**			

* **Bolded** values are in excess of the NMOCD Remediation Thresholds

TABLE 3

SUMMARY OF SOIL ANALYTICAL DATA

CONCENTRATIONS OF CHLORIDE IN SOIL

ZAFIRO STATE 32 COM #1
CIMAREX ENERGY
26.7 MILES WEST OF HOBBS, NEW MEXICO

TALON/LPE PROJECT NUMBER: 701162.053.01

SAMPLE LOCATION	SAMPLE DATE	METHOD: 300.0
		CHLORIDE (mg/Kg)
BH-1	6/2/2014	27

* **Bolded** values are in excess of the Remediation Thresholds

APPENDIX C

PHOTOGRAPHIC DOCUMENTATION

Photograph No. 1

Direction:
East

Description:

Source of release

Photograph No. 2

Direction:
East

Description:

View of new gravel around release area

Photograph No. 3

Direction:
North

Description:

Flow path, new gravel, and added berm height.

Photograph No. 4

Direction:
South

Description:
View of flowpath and new gravel placed in tank containment.

Photograph No. 5

Direction:
Northeast

Description:
Following a meeting with NMOCD personnel, the impacted vegetation area was to be excavated, lined, and backfilled.

Photograph No. 6

Direction:
Southeast

Description:
A test trench was completed to assess vertical limits of impacted soils.

Photograph No. 7

Direction:
Northeast

Description:
Excavated area measuring 20 feet long by 12 feet wide. The total depth was approximately eight (8) feet bgs.

Photograph No. 8

Direction:
East

Description:
The area was backfilled with new caliche to a depth of four (4) feet bgs.

Photograph No. 9

Direction:
North

Description:
A 20mm reinforced liner was placed at a depth of 4 feet to prevent any further contamination.

Photograph No. 10

Direction:
Northeast

Description:
The lined area was backfilled with material from the surrounding area and graded to match pre-release conditions.

APPENDIX D

LABORATORY ANALYTICAL DATA REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

TRACEANALYSIS, INC.

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

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Chris Spore
Talon LPE-Midland
2901 State Highway 349
Midland, TX, 79706

Report Date: January 29, 2014

Work Order: 14011609

Project Location: Hobbs,NM
Project Name: Cimarex/Zafiro State 32 Com #1
Project Number: 70112.053.01

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
351558	BH-1 1ft	soil	2014-01-13	11:20	2014-01-16
351559	BH-1 2ft	soil	2014-01-13	11:40	2014-01-16
351560	BH-1 3ft	soil	2014-01-13	11:56	2014-01-16
351561	BH-1 4ft	soil	2014-01-13	12:03	2014-01-16
351562	BH-1 5ft	soil	2014-01-13	12:08	2014-01-16
351563	BH-1 6ft	soil	2014-01-13	12:14	2014-01-16
351564	BH-2 1ft	soil	2014-01-13	12:27	2014-01-16
351565	BH-2 2ft	soil	2014-01-13	12:40	2014-01-16
351566	BH-2 3ft	soil	2014-01-13	12:45	2014-01-16
351570	BH-3 1ft	soil	2014-01-13	13:02	2014-01-16
351571	BH-3 2ft	soil	2014-01-13	13:05	2014-01-16
351572	BH-3 3ft	soil	2014-01-13	13:09	2014-01-16
351573	BH-3 4ft	soil	2014-01-13	13:12	2014-01-16
351574	BH-3 5ft	soil	2014-01-13	13:17	2014-01-16
351575	BH-3 6ft	soil	2014-01-13	13:24	2014-01-16

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 39 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Cimarex/Zafiro State 32 Com #1 were received by TraceAnalysis, Inc. on 2014-01-16 and assigned to work order 14011609. Samples for work order 14011609 were received intact at a temperature of 5.5 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	91647	2014-01-15 at 15:17	108402	2014-01-17 at 12:30
Chloride (Titration)	SM 4500-Cl B	91713	2014-01-20 at 09:04	108462	2014-01-20 at 15:42
Chloride (Titration)	SM 4500-Cl B	91782	2014-01-22 at 08:36	108534	2014-01-22 at 16:23
Chloride (Titration)	SM 4500-Cl B	91894	2014-01-27 at 08:22	108704	2014-01-28 at 15:20
TPH DRO - NEW	S 8015 D	91748	2014-01-20 at 08:00	108469	2014-01-21 at 08:53
TPH DRO - NEW	S 8015 D	91896	2014-01-24 at 16:00	108640	2014-01-27 at 06:20
TPH GRO	S 8015 D	91647	2014-01-15 at 15:17	108403	2014-01-17 at 12:36
TPH GRO	S 8015 D	91710	2014-01-17 at 15:30	108466	2014-01-20 at 16:15

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 14011609 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: 351558 - BH-1 1ft

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	108402	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qr,U	2	<0.0200	mg/Kg	1	0.0200
Toluene	Qr,U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qr,Qs,U	2	<0.0200	mg/Kg	1	0.0200
Xylene	Qr,Qs,U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	70 - 130

Sample: 351558 - BH-1 1ft

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108462	Date Analyzed:	2014-01-20	Analyzed By:	AR
Prep Batch:	91713	Sample Preparation:	2014-01-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**385**	mg/Kg	5	4.00

Sample: 351558 - BH-1 1ft

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	108469	Date Analyzed:	2014-01-21	Analyzed By:	CM
Prep Batch:	91748	Sample Preparation:	2014-01-20	Prepared By:	CM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			93.6	mg/Kg	1	100	94	70 - 130

Sample: 351558 - BH-1 1ft

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	108403	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			2.01	mg/Kg	1	2.00	100	70 - 130

Sample: 351559 - BH-1 2ft

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108534	Date Analyzed:	2014-01-22	Analyzed By:	AR
Prep Batch:	91782	Sample Preparation:	2014-01-22	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**364**	mg/Kg	5	4.00

Sample: 351560 - BH-1 3ft

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108704	Date Analyzed:	2014-01-28	Analyzed By:	AR
Prep Batch:	91894	Sample Preparation:	2014-01-27	Prepared By:	AR

continued ...

sample 351560 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**72.7**	mg/Kg	5	4.00

Sample: 351561 - BH-1 4ft

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108704	Date Analyzed:	2014-01-28	Analyzed By:	AR
Prep Batch:	91894	Sample Preparation:	2014-01-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**46.7**	mg/Kg	5	4.00

Sample: 351562 - BH-1 5ft

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108704	Date Analyzed:	2014-01-28	Analyzed By:	AR
Prep Batch:	91894	Sample Preparation:	2014-01-27	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**83.1**	mg/Kg	5	4.00

Sample: 351563 - BH-1 6ft

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108704	Date Analyzed:	2014-01-28	Analyzed By:	AR
Prep Batch:	91894	Sample Preparation:	2014-01-27	Prepared By:	AR

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

Sample: 351564 - BH-2 1ft

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	108402	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	2	**9.90**	mg/Kg	50	0.0200
Toluene	Qr	2	**302**	mg/Kg	50	0.0200
Ethylbenzene	Qr,Qs	2	**55.2**	mg/Kg	50	0.0200
Xylene	Qr,Qs	2	**424**	mg/Kg	50	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				1.84	mg/Kg	50	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		55.5	mg/Kg	50	2.00	2775	70 - 130

Sample: 351564 - BH-2 1ft

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108462	Date Analyzed:	2014-01-20	Analyzed By:	AR
Prep Batch:	91713	Sample Preparation:	2014-01-20	Prepared By:	AR

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

Sample: 351564 - BH-2 1ft

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	108469	Date Analyzed:	2014-01-21	Analyzed By:	CM
Prep Batch:	91748	Sample Preparation:	2014-01-20	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**1790**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		140	mg/Kg	1	100	140	70 - 130

Sample: 351564 - BH-2 1ft

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	108403	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Je	2	**11600**	mg/Kg	50	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		13.6	mg/Kg	50	2.00	680	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		29.9	mg/Kg	50	2.00	1495	70 - 130

Sample: 351565 - BH-2 2ft

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	108402	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	2	**74.0**	mg/Kg	200	0.0200
Toluene	Qr	2	**1170**	mg/Kg	200	0.0200
Ethylbenzene	Qr,Qs	2	**206**	mg/Kg	200	0.0200
Xylene	Qr,Qs	2	**1540**	mg/Kg	200	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		4.70	mg/Kg	200	2.00	235	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		96.3	mg/Kg	200	2.00	4815	70 - 130

Sample: 351565 - BH-2 2ft

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	108640	Date Analyzed:	2014-01-27	Analyzed By:	CM
Prep Batch:	91896	Sample Preparation:	2014-01-24	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	1	**3090**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			207	mg/Kg	1	100	207	70 - 130

Sample: 351565 - BH-2 2ft

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	108403	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		2	**31600**	mg/Kg	200	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		2.63	mg/Kg	200	2.00	132	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		381	mg/Kg	200	2.00	19050	70 - 130

Sample: 351566 - BH-2 3ft

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	108402	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qr	2	<0.0200	mg/Kg	1	0.0200
Toluene	Qr	2	**0.104**	mg/Kg	1	0.0200
Ethylbenzene	Qr,Qs	2	<0.0200	mg/Kg	1	0.0200
Xylene	Qr,Qs	2	**0.308**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.48	mg/Kg	1	2.00	74	70 - 130
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	70 - 130

Sample: 351566 - BH-2 3ft

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	108640	Date Analyzed:	2014-01-27	Analyzed By:	CM
Prep Batch:	91896	Sample Preparation:	2014-01-24	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Qs	1	**82.2**		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			95.2	mg/Kg	1	100	95	70 - 130

Sample: 351566 - BH-2 3ft

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	108403	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO		2	**20.1**		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.59	mg/Kg	1	2.00	80	70 - 130
4-Bromofluorobenzene (4-BFB)			2.24	mg/Kg	1	2.00	112	70 - 130

Sample: 351570 - BH-3 1ft

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	108402	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	2	**10.9**	mg/Kg	50	0.0200
Toluene	Qr	2	**299**	mg/Kg	50	0.0200
Ethylbenzene	Qr,Qs	2	**43.0**	mg/Kg	50	0.0200
Xylene	Qr,Qs	2	**408**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	50	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	57.7	mg/Kg	50	2.00	2885	70 - 130

Sample: 351570 - BH-3 1ft

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108462	Date Analyzed:	2014-01-20	Analyzed By:	AR
Prep Batch:	91713	Sample Preparation:	2014-01-20	Prepared By:	AR

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

Sample: 351570 - BH-3 1ft

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	108469	Date Analyzed:	2014-01-21	Analyzed By:	CM
Prep Batch:	91748	Sample Preparation:	2014-01-20	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**906**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			115	mg/Kg	1	100	115	70 - 130

Sample: 351570 - BH-3 1ft

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	108403	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Je	2	**11900**	mg/Kg	50	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		13.1	mg/Kg	50	2.00	655	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		106	mg/Kg	50	2.00	5300	70 - 130

Sample: 351571 - BH-3 2ft

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	108402	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	2	**10.1**	mg/Kg	200	0.0200
Toluene	Qr	2	**234**	mg/Kg	200	0.0200
Ethylbenzene	Qr,Qs	2	**37.9**	mg/Kg	200	0.0200
Xylene	Qr,Qs	2	**341**	mg/Kg	200	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[1] Qsr	Qsr		0.00	mg/Kg	200	2.00	0	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		48.4	mg/Kg	200	2.00	2420	70 - 130

Sample: 351571 - BH-3 2ft

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	108640	Date Analyzed:	2014-01-27	Analyzed By:	CM
Prep Batch:	91896	Sample Preparation:	2014-01-24	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**1520**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		148	mg/Kg	1	100	148	70 - 130

Sample: 351571 - BH-3 2ft

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	108403	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		2	**11900**	mg/Kg	200	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		10.1	mg/Kg	200	2.00	505	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		81.2	mg/Kg	200	2.00	4060	70 - 130

Sample: 351572 - BH-3 3ft

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	108402	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	2	**11.1**	mg/Kg	200	0.0200
Toluene	Qr	2	**210**	mg/Kg	200	0.0200
Ethylbenzene	Qr,Qs	2	**33.4**	mg/Kg	200	0.0200
Xylene	Qr,Qs	2	**296**	mg/Kg	200	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	2 Qsr	Qsr		0.00	mg/Kg	200	2.00	0	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		42.4	mg/Kg	200	2.00	2120	70 - 130

Sample: 351572 - BH-3 3ft

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	108640	Date Analyzed:	2014-01-27	Analyzed By:	CM
Prep Batch:	91896	Sample Preparation:	2014-01-24	Prepared By:	DS

continued ...

sample 351572 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**1880**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		162	mg/Kg	1	100	162	70 - 130

Sample: 351572 - BH-3 3ft

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	108403	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		2	**10100**	mg/Kg	200	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		9.49	mg/Kg	200	2.00	474	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		87.4	mg/Kg	200	2.00	4370	70 - 130

Sample: 351573 - BH-3 4ft

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	108402	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	2	**14.0**	mg/Kg	200	0.0200
Toluene	Qr	2	**336**	mg/Kg	200	0.0200
Ethylbenzene	Qr,Qs	2	**45.8**	mg/Kg	200	0.0200
Xylene	Qr,Qs	2	**462**	mg/Kg	200	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		6.50	mg/Kg	200	2.00	325	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		69.5	mg/Kg	200	2.00	3475	70 - 130

Sample: 351573 - BH-3 4ft

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	108640	Date Analyzed:	2014-01-27	Analyzed By:	CM
Prep Batch:	91896	Sample Preparation:	2014-01-24	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**1900**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		162	mg/Kg	1	100	162	70 - 130

Sample: 351573 - BH-3 4ft

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	108466	Date Analyzed:	2014-01-20	Analyzed By:	AK
Prep Batch:	91710	Sample Preparation:	2014-01-17	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	2	**15000**	mg/Kg	400	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				1.78	mg/Kg	400	2.00	89	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		131	mg/Kg	400	2.00	6550	70 - 130

Sample: 351574 - BH-3 5ft

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	108402	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	2	**62.4**	mg/Kg	100	0.0200
Toluene	Qr	2	**692**	mg/Kg	100	0.0200
Ethylbenzene	Qr,Qs	2	**112**	mg/Kg	100	0.0200
Xylene	Qr,Qs	2	**823**	mg/Kg	100	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				1.51	mg/Kg	100	2.00	76	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		121	mg/Kg	100	2.00	6050	70 - 130

Sample: 351574 - BH-3 5ft

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	108640	Date Analyzed:	2014-01-27	Analyzed By:	CM
Prep Batch:	91896	Sample Preparation:	2014-01-24	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**2580**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		188	mg/Kg	1	100	188	70 - 130

Sample: 351574 - BH-3 5ft

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	108403	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Je	2	**40900**	mg/Kg	200	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		34.2	mg/Kg	200	2.00	1710	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		310	mg/Kg	200	2.00	15500	70 - 130

Sample: 351575 - BH-3 6ft

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	108402	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qr	2	**47.6**	mg/Kg	200	0.0200
Toluene	Qr	2	**830**	mg/Kg	200	0.0200
Ethylbenzene	Qr,Qs	2	**89.5**	mg/Kg	200	0.0200
Xylene	Qr,Qs	2	**980**	mg/Kg	200	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	3 Qsr	Qsr		1.36	mg/Kg	200	2.00	68	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		102	mg/Kg	200	2.00	5100	70 - 130

Sample: 351575 - BH-3 6ft

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	108640	Date Analyzed:	2014-01-27	Analyzed By:	CM
Prep Batch:	91896	Sample Preparation:	2014-01-24	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	1	**2770**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		196	mg/Kg	1	100	196	70 - 130

Sample: 351575 - BH-3 6ft

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	108403	Date Analyzed:	2014-01-17	Analyzed By:	AK
Prep Batch:	91647	Sample Preparation:	2014-01-15	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Je	2	**32900**	mg/Kg	200	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		0.00	mg/Kg	200	2.00	0	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		209	mg/Kg	200	2.00	10450	70 - 130

Method Blanks

Method Blank (1) QC Batch: 108402

QC Batch: 108402 | Date Analyzed: 2014-01-17 | Analyzed By: AK
Prep Batch: 91647 | QC Preparation: 2014-01-15 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.00533	mg/Kg	0.02
Toluene		2	<0.00645	mg/Kg	0.02
Ethylbenzene		2	<0.0116	mg/Kg	0.02
Xylene		2	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	1	2.00	103	70 - 130

Method Blank (1) QC Batch: 108403

QC Batch: 108403 | Date Analyzed: 2014-01-17 | Analyzed By: AK
Prep Batch: 91647 | QC Preparation: 2014-01-15 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		2	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	70 - 130

Method Blank (1) QC Batch: 108462

QC Batch: 108462 | Date Analyzed: 2014-01-20 | Analyzed By: AR
Prep Batch: 91713 | QC Preparation: 2014-01-20 | Prepared By: AR

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

Method Blank (1) QC Batch: 108466

QC Batch: 108466 Date Analyzed: 2014-01-20 Analyzed By: AK
Prep Batch: 91710 QC Preparation: 2014-01-17 Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		2	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.07	mg/Kg	1	2.00	104	70 - 130
4-Bromofluorobenzene (4-BFB)			2.22	mg/Kg	1	2.00	111	70 - 130

Method Blank (1) QC Batch: 108469

QC Batch: 108469 Date Analyzed: 2014-01-21 Analyzed By: CM
Prep Batch: 91748 QC Preparation: 2014-01-20 Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	6.53	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			90.0	mg/Kg	1	100	90	70 - 130

Method Blank (1) QC Batch: 108534

QC Batch: 108534 Date Analyzed: 2014-01-22 Analyzed By: AR
Prep Batch: 91782 QC Preparation: 2014-01-22 Prepared By: AR

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

Method Blank (1) QC Batch: 108640

QC Batch:	108640	Date Analyzed:	2014-01-27	Analyzed By:	CM
Prep Batch:	91896	QC Preparation:	2014-01-24	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<5.22	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			91.6	mg/Kg	1	100	92	70 - 130

Method Blank (1) QC Batch: 108704

QC Batch:	108704	Date Analyzed:	2014-01-28	Analyzed By:	AR
Prep Batch:	91894	QC Preparation:	2014-01-27	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 108402 | Date Analyzed: 2014-01-17 | Analyzed By: AK
Prep Batch: 91647 | QC Preparation: 2014-01-15 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	1.92	mg/Kg	1	2.00	<0.00533	96	70 - 130
Toluene		2	2.22	mg/Kg	1	2.00	<0.00645	111	70 - 130
Ethylbenzene		2	2.20	mg/Kg	1	2.00	<0.0116	110	70 - 130
Xylene		2	6.90	mg/Kg	1	6.00	<0.00874	115	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	1.84	mg/Kg	1	2.00	<0.00533	92	70 - 130	4	20
Toluene		2	1.99	mg/Kg	1	2.00	<0.00645	100	70 - 130	11	20
Ethylbenzene		2	2.11	mg/Kg	1	2.00	<0.0116	106	70 - 130	4	20
Xylene		2	6.44	mg/Kg	1	6.00	<0.00874	107	70 - 130	7	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.55	1.90	mg/Kg	1	2.00	128	95	70 - 130
4-Bromofluorobenzene (4-BFB)	2.60	2.13	mg/Kg	1	2.00	130	106	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 108403 | Date Analyzed: 2014-01-17 | Analyzed By: AK
Prep Batch: 91647 | QC Preparation: 2014-01-15 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	16.4	mg/Kg	1	20.0	<2.32	82	70 - 130

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[2]	15.9	mg/Kg	1	20.0	<2.32	80	70 - 130	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.79	1.72	mg/Kg	1	2.00	90	86	70 - 130
4-Bromofluorobenzene (4-BFB)	2.18	2.18	mg/Kg	1	2.00	109	109	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 108462 | Date Analyzed: 2014-01-20 | Analyzed By: AR
Prep Batch: 91713 | QC Preparation: 2014-01-20 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2400	mg/Kg	1	2500	<3.85	96	89.7 - 115.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2590	mg/Kg	1	2500	<3.85	104	89.7 - 115.9	8	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 108466 | Date Analyzed: 2014-01-20 | Analyzed By: AK
Prep Batch: 91710 | QC Preparation: 2014-01-17 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		[2]	16.1	mg/Kg	1	20.0	<2.32	80	70 - 130

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[2]	18.2	mg/Kg	1	20.0	<2.32	91	70 - 130	12	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.85	1.88	mg/Kg	1	2.00	92	94	70 - 130
4-Bromofluorobenzene (4-BFB)	2.45	2.38	mg/Kg	1	2.00	122	119	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 108469 | Date Analyzed: 2014-01-21 | Analyzed By: CM
Prep Batch: 91748 | QC Preparation: 2014-01-20 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		[1]	242	mg/Kg	1	250	6.53	94	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		[1]	233	mg/Kg	1	250	6.53	90	70 - 130	4	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	97.2	92.1	mg/Kg	1	100	97	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 108534 | Date Analyzed: 2014-01-22 | Analyzed By: AR
Prep Batch: 91782 | QC Preparation: 2014-01-22 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2580	mg/Kg	1	2500	<3.85	103	89.7 - 115.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2440	mg/Kg	1	2500	<3.85	98	89.7 - 115.9	6	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: 108640 | Date Analyzed: 2014-01-27 | Analyzed By: CM
Prep Batch: 91896 | QC Preparation: 2014-01-24 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	215	mg/Kg	1	250	<5.22	86	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	213	mg/Kg	1	250	<5.22	85	70 - 130	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	91.4	92.4	mg/Kg	1	100	91	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 108704 | Date Analyzed: 2014-01-28 | Analyzed By: AR
Prep Batch: 91894 | QC Preparation: 2014-01-27 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2870	mg/Kg	1	2500	<3.85	115	89.7 - 115.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2840	mg/Kg	1	2500	<3.85	114	89.7 - 115.9	1	20

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

Matrix Spike (MS-1) Spiked Sample: 351440

QC Batch: 108402 | Date Analyzed: 2014-01-17 | Analyzed By: AK
Prep Batch: 91647 | QC Preparation: 2014-01-15 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	1.70	mg/Kg	1	2.00	<0.00533	85	70 - 130
Toluene		2	1.86	mg/Kg	1	2.00	<0.00645	93	70 - 130
Ethylbenzene		2	1.97	mg/Kg	1	2.00	<0.0116	98	70 - 130
Xylene		2	5.93	mg/Kg	1	6.00	<0.00874	99	70 - 130

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

Param		F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	Qr	Qr	2	2.27	mg/Kg	1	2.00	<0.00533	114	70 - 130	29	20
Toluene	Qr	Qr	2	2.50	mg/Kg	1	2.00	<0.00645	125	70 - 130	29	20
Ethylbenzene	Qr,Qs	Qr,Qs	2	2.85	mg/Kg	1	2.00	<0.0116	142	70 - 130	36	20
Xylene	Qr,Qs	Qr,Qs	2	8.59	mg/Kg	1	6.00	<0.00874	143	70 - 130	37	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.78	2.41	mg/Kg	1	2	89	120	70 - 130
4-Bromofluorobenzene (4-BFB)	1.97	2.76	mg/Kg	1	2	98	138	70 - 130

Matrix Spike (MS-1) Spiked Sample: 351440

QC Batch: 108403 | Date Analyzed: 2014-01-17 | Analyzed By: AK
Prep Batch: 91647 | QC Preparation: 2014-01-15 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	16.9	mg/Kg	1	20.0	<2.32	84	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		2	16.4	mg/Kg	1	20.0	<2.32	82	70 - 130	3	20

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

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.84	1.78	mg/Kg	1	2	92	89	70 - 130
4-Bromofluorobenzene (4-BFB)	2.16	2.12	mg/Kg	1	2	108	106	70 - 130

Matrix Spike (MS-1) Spiked Sample: 351830

QC Batch: 108462 | Date Analyzed: 2014-01-20 | Analyzed By: AR
Prep Batch: 91713 | QC Preparation: 2014-01-20 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			27800	mg/Kg	10	2500	25400	96	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			28100	mg/Kg	10	2500	25400	108	78.9 - 121	1	20

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

Matrix Spike (MS-1) Spiked Sample: 351613

QC Batch: 108466 | Date Analyzed: 2014-01-20 | Analyzed By: AK
Prep Batch: 91710 | QC Preparation: 2014-01-17 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO Qs	Qs	2	<116	mg/Kg	50	20.0	<116	0	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO Qs	Qs	2	<116	mg/Kg	50	20.0	<116	0	70 - 130	0	20

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

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.80	1.88	mg/Kg	50	2	90	94	70 - 130
4-Bromofluorobenzene (4-BFB)	2.40	2.36	mg/Kg	50	2	120	118	70 - 130

Matrix Spike (MS-1) Spiked Sample: 351656

QC Batch: 108469 | Date Analyzed: 2014-01-21 | Analyzed By: CM
Prep Batch: 91748 | QC Preparation: 2014-01-20 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		[1]	394	mg/Kg	1	250	88.7	122	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		[1]	409	mg/Kg	1	250	88.7	128	70 - 130	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	94.5	99.5	mg/Kg	1	100	94	100	70 - 130

Matrix Spike (MS-1) Spiked Sample: 351559

QC Batch: 108534 | Date Analyzed: 2014-01-22 | Analyzed By: AR
Prep Batch: 91782 | QC Preparation: 2014-01-22 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2770	mg/Kg	5	2500	364	96	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2900	mg/Kg	5	2500	364	101	78.9 - 121	5	20

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

Matrix Spike (MS-1) Spiked Sample: 351575

QC Batch: 108640 | Date Analyzed: 2014-01-27 | Analyzed By: CM
Prep Batch: 91896 | QC Preparation: 2014-01-24 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Qs	Qs 1	2370	mg/Kg	1	250	2770	-160	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qs	Qs 1	2880	mg/Kg	1	250	2770	44	70 - 130	19	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	166	187	mg/Kg	1	100	166	187	70 - 130

Matrix Spike (MS-1) Spiked Sample: 352563

QC Batch: 108704 | Date Analyzed: 2014-01-28 | Analyzed By: AR
Prep Batch: 91894 | QC Preparation: 2014-01-27 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2590	mg/Kg	5	2500	<19.2	104	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2700	mg/Kg	5	2500	<19.2	108	78.9 - 121	4	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 108402 | Date Analyzed: 2014-01-17 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.104	104	80 - 120	2014-01-17
Toluene		2	mg/kg	0.100	0.107	107	80 - 120	2014-01-17
Ethylbenzene		2	mg/kg	0.100	0.107	107	80 - 120	2014-01-17
Xylene		2	mg/kg	0.300	0.327	109	80 - 120	2014-01-17

Standard (CCV-2)

QC Batch: 108402 | Date Analyzed: 2014-01-17 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.101	101	80 - 120	2014-01-17
Toluene		2	mg/kg	0.100	0.104	104	80 - 120	2014-01-17
Ethylbenzene		2	mg/kg	0.100	0.104	104	80 - 120	2014-01-17
Xylene		2	mg/kg	0.300	0.315	105	80 - 120	2014-01-17

Standard (CCV-3)

QC Batch: 108402 | Date Analyzed: 2014-01-17 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.0984	98	80 - 120	2014-01-17
Toluene		2	mg/kg	0.100	0.102	102	80 - 120	2014-01-17
Ethylbenzene		2	mg/kg	0.100	0.102	102	80 - 120	2014-01-17
Xylene		2	mg/kg	0.300	0.310	103	80 - 120	2014-01-17

Standard (CCV-1)

QC Batch: 108403 Date Analyzed: 2014-01-17 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.04	104	80 - 120	2014-01-17

Standard (CCV-2)

QC Batch: 108403 Date Analyzed: 2014-01-17 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	0.905	90	80 - 120	2014-01-17

Standard (CCV-3)

QC Batch: 108403 Date Analyzed: 2014-01-17 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.05	105	80 - 120	2014-01-17

Standard (CCV-1)

QC Batch: 108462 Date Analyzed: 2014-01-20 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	102	102	85 - 115	2014-01-20

Standard (CCV-2)

QC Batch: 108462 Date Analyzed: 2014-01-20 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.1	98	85 - 115	2014-01-20

Standard (CCV-1)

QC Batch: 108466 Date Analyzed: 2014-01-20 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.05	105	80 - 120	2014-01-20

Standard (CCV-2)

QC Batch: 108466 Date Analyzed: 2014-01-20 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.09	109	80 - 120	2014-01-20

Standard (CCV-1)

QC Batch: 108469 Date Analyzed: 2014-01-21 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	228	91	80 - 120	2014-01-21

Standard (CCV-2)

QC Batch: 108469 Date Analyzed: 2014-01-21 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	235	94	80 - 120	2014-01-21

Standard (CCV-3)

QC Batch: 108469 Date Analyzed: 2014-01-21 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	225	90	80 - 120	2014-01-21

Standard (CCV-1)

QC Batch: 108534 Date Analyzed: 2014-01-22 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	102	102	85 - 115	2014-01-22

Standard (CCV-2)

QC Batch: 108534 Date Analyzed: 2014-01-22 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.4	98	85 - 115	2014-01-22

Standard (CCV-1)

QC Batch: 108640 Date Analyzed: 2014-01-27 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	202	81	80 - 120	2014-01-27

Standard (CCV-2)

QC Batch: 108640 Date Analyzed: 2014-01-27 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	208	83	80 - 120	2014-01-27

Standard (CCV-3)

QC Batch: 108640 Date Analyzed: 2014-01-27 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	204	82	80 - 120	2014-01-27

Standard (CCV-1)

QC Batch: 108704 Date Analyzed: 2014-01-28 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	105	105	85 - 115	2014-01-28

Standard (CCV-2)

QC Batch: 108704 Date Analyzed: 2014-01-28 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	94.6	95	85 - 115	2014-01-28

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock
2	NELAP	T104704392-13-7	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

Result Comments

1 Surrogate low due to possible dilution out of sample.
2 Surrogate low due to possible dilution out of sample.
3 Surrogate low due to possible dilution out of sample.

Attachments

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

LAB Order ID # 14011609

Page 1 of 2

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Brandon & Clark
3403 Industrial Blvd.
Hobbs, NM 88240
Tel (575) 392-7561
Fax (575) 392-4508

Company Name: Talon LPE
Phone #: 866-742-0742
Address: (Street, City, Zip) 2901 Hwy 349, Midland 79706
Fax #:
Contact Person: Chris Spore
E-mail: cspore@talonlpe.com
Invoice to: (If different from above)
Project #: 701162.053.01
Project Name: Zafiro State 32 Com #1
Project Location (including state): Hobbs, NM
Sampler Signature: Matt Dean

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
35558	BH-1 1ft	2			X							X		1/13/14	1120
559	BH-1 2ft	2													1140
560	BH-1 3ft	2													1156
561	BH-1 4ft	2													1203
562	BH-1 5ft	2													1208
563	BH-1 6ft	2													1214
564	BH-2 1ft	2													1227
565	BH-2 2ft	2													1240
566	BH-2 3ft	2													1245
567	BH-2 4ft	2													1251
568	BH-2 5ft	2													1252

ANALYSIS REQUEST	
MTBE 8021 / 602 / 8260 / 624	
BTEX 8021 / 602 / 8260 / 624	X
TPH 418.1 / TX1005 / TX1005 Ext(C35)	
TPH 8015 GRO / DRO / TVHC	X
PAH 8270 / 625	
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
TCLP Pesticides	
RCI	
GC/MS Vol. 8260 / 624	
GC/MS Semi. Vol. 8270 / 625	
PCB's 8082 / 608	
Pesticides 8081 / 608	
BOD, TSS, pH	
Moisture Content	
Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	
Na, Ca, Mg, K, TDS, EC	
Chlorides	X
Turn Around Time if different from standard	
Hold	

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Matt Dean	Talon LPE	1/16/14	0921		TA	1/16/14	9:21	INST 1K-1 OBS 56 °C COR 55 °C
								INST ____ OBS ____ °C COR ____ °C
								INST ____ OBS ____ °C COR ____ °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS:
If TPH 75000 run next depth
If BTEX 750 run next depth (benzene 10 mg/kg)
If Chlorides 700 run next depth
Midland - all

- [ ] Dry Weight Basis Required
- [ ] TRRP Report Required
- [ ] Check If Special Reporting Limits Are Needed

Carrier # Carry

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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LAB Order ID # 14011609

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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Address: (Street, City, Zip) 2901 Hwy 349 Midland 79706
Fax #:
Contact Person: Chris Spore
E-mail: cspore@talonlpe.com
Invoice to:
(If different from above)
Project #: 701162.053.01
Project Name: Zafiro State 32 Com #1
Project Location (including state): Hobbs. NM
Sampler Signature: Mellissa

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC	Chlorides			Turn Around Time if different from standard	Hold
569	BH-2 Oft	2			X							X		1/13/14	1254	X	X																	X				
570	BH-3 1ft	2													1302	X	X																						
571	BH-3 2ft	2													1305																								
572	BH-3 3ft	2													1309																								
573	BH-3 4ft	2													1312																								
574	BH-3 5ft	2													1317																								
575	BH-3 Oft	2													1324																								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Mellissa	Talon LPE	1/16/14	0921		TA	1/16/14	9:21
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

INST R-1 / OBS 36 °C / COR 35 °C
INST ____ / OBS ____ °C / COR ____ °C
INST ____ / OBS ____ °C / COR ____ °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS:
If TPH 7500 run next depth
If BTEX 750 run next depth
If Chlorides 7100 run next depth

- [ ] Dry Weight Basis Required
- [ ] TRRP Report Required
- [ ] Check If Special Reporting Limits Are Needed

Carrier # Carry

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

ORIGINAL COPY

TRACEANALYSIS, INC.

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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Chris Spore
Talon LPE-Midland
2901 State Highway 349
Midland, TX, 79706

Report Date: February 18, 2014

Work Order: 14021005

Project Location: Hobbs,NM
Project Name: Cimarex/Zafiro State 32 Com #1
Project Number: 70112.053.01

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
354214	BH-3B Surface	soil	2014-02-06	12:00	2014-02-07
354215	BH-3B 2'bgs	soil	2014-02-06	12:06	2014-02-07
354216	BH-3B 4'bgs	soil	2014-02-06	12:11	2014-02-07
354217	BH-3B 5'bgs	soil	2014-02-06	12:16	2014-02-07
354218	BH-3B 6'bgs	soil	2014-02-06	12:20	2014-02-07
354219	BH-3B 7'bgs	soil	2014-02-06	12:24	2014-02-07
354220	BH-3B 8'bgs	soil	2014-02-06	12:34	2014-02-07

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

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Cimarex/Zafiro State 32 Com #1 were received by TraceAnalysis, Inc. on 2014-02-07 and assigned to work order 14021005. Samples for work order 14021005 were received intact at a temperature of 3.8 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH DRO - NEW	S 8015 D	92372	2014-02-12 at 14:00	109229	2014-02-13 at 09:12
TPH DRO - NEW	S 8015 D	92417	2014-02-13 at 14:45	109281	2014-02-14 at 09:16
TPH GRO	S 8015 D	92440	2014-02-14 at 12:23	109347	2014-02-16 at 16:30
TPH GRO	S 8015 D	92451	2014-02-15 at 10:59	109393	2014-02-18 at 08:46

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 14021005 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: 354214 - BH-3B Surface

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	109229	Date Analyzed:	2014-02-13	Analyzed By:	RG
Prep Batch:	92372	Sample Preparation:	2014-02-12	Prepared By:	RG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**1090**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			109	mg/Kg	1	100	109	70 - 130

Sample: 354214 - BH-3B Surface

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	109347	Date Analyzed:	2014-02-16	Analyzed By:	AK
Prep Batch:	92440	Sample Preparation:	2014-02-14	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**209**	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.42	mg/Kg	5	2.00	71	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	5.25	mg/Kg	5	2.00	262	70 - 130

Sample: 354215 - BH-3B 2'bgs

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	109229	Date Analyzed:	2014-02-13	Analyzed By:	RG
Prep Batch:	92372	Sample Preparation:	2014-02-12	Prepared By:	RG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**2770**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			103	mg/Kg	1	100	103	70 - 130

Sample: 354215 - BH-3B 2'bgs

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	109393	Date Analyzed:	2014-02-18	Analyzed By:	AK
Prep Batch:	92451	Sample Preparation:	2014-02-15	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**5150**	mg/Kg	200	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	200	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	66.1	mg/Kg	200	2.00	3305	70 - 130

Sample: 354216 - BH-3B 4'bgs

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	109281	Date Analyzed:	2014-02-14	Analyzed By:	RG
Prep Batch:	92417	Sample Preparation:	2014-02-13	Prepared By:	RG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**5740**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane Qsr	Qsr		166	mg/Kg	5	100	166	70 - 130

Sample: 354216 - BH-3B 4'bgs

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	109393	Date Analyzed:	2014-02-18	Analyzed By:	AK
Prep Batch:	92451	Sample Preparation:	2014-02-15	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Qs	1	**32000**	mg/Kg	400	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		17.9	mg/Kg	400	2.00	895	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		289	mg/Kg	400	2.00	14450	70 - 130

Sample: 354217 - BH-3B 5'bgs

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	109281	Date Analyzed:	2014-02-14	Analyzed By:	RG
Prep Batch:	92417	Sample Preparation:	2014-02-13	Prepared By:	RG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**3890**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			128	mg/Kg	5	100	128	70 - 130

Sample: 354217 - BH-3B 5'bgs

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	109393	Date Analyzed:	2014-02-18	Analyzed By:	AK
Prep Batch:	92451	Sample Preparation:	2014-02-15	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Qs	1	**14600**	mg/Kg	200	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		9.61	mg/Kg	200	2.00	480	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		137	mg/Kg	200	2.00	6850	70 - 130

Sample: 354218 - BH-3B 6'bgs

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	109229	Date Analyzed:	2014-02-13	Analyzed By:	RG
Prep Batch:	92372	Sample Preparation:	2014-02-12	Prepared By:	RG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**2820**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 354218 - BH-3B 6'bgs

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	109347	Date Analyzed:	2014-02-16	Analyzed By:	AK
Prep Batch:	92440	Sample Preparation:	2014-02-14	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**7800**	mg/Kg	50	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		5.97	mg/Kg	50	2.00	298	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		85.2	mg/Kg	50	2.00	4260	70 - 130

Sample: 354219 - BH-3B 7'bgs

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	109229	Date Analyzed:	2014-02-13	Analyzed By:	RG
Prep Batch:	92372	Sample Preparation:	2014-02-12	Prepared By:	RG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	1	**3490**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			119	mg/Kg	1	100	119	70 - 130

Sample: 354219 - BH-3B 7'bgs

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	109347	Date Analyzed:	2014-02-16	Analyzed By:	AK
Prep Batch:	92440	Sample Preparation:	2014-02-14	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Je,Qs	1	**9760**	mg/Kg	50	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		8.28	mg/Kg	50	2.00	414	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		84.4	mg/Kg	50	2.00	4220	70 - 130

Sample: 354220 - BH-3B 8'bgs

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	109281	Date Analyzed:	2014-02-14	Analyzed By:	RG
Prep Batch:	92417	Sample Preparation:	2014-02-13	Prepared By:	RG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**7850**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		151	mg/Kg	5	100	151	70 - 130

Sample: 354220 - BH-3B 8'bgs

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	109347	Date Analyzed:	2014-02-16	Analyzed By:	AK
Prep Batch:	92440	Sample Preparation:	2014-02-14	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Je,Qs	1	**18600**	mg/Kg	100	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		13.6	mg/Kg	100	2.00	680	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		137	mg/Kg	100	2.00	6850	70 - 130

Method Blanks

Method Blank (1) QC Batch: 109229

QC Batch:	109229	Date Analyzed:	2014-02-13	Analyzed By:	RG
Prep Batch:	92372	QC Preparation:	2014-02-12	Prepared By:	RG

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<6.88	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			94.4	mg/Kg	1	100	94	70 - 130

Method Blank (1) QC Batch: 109281

QC Batch:	109281	Date Analyzed:	2014-02-14	Analyzed By:	RG
Prep Batch:	92417	QC Preparation:	2014-02-13	Prepared By:	RG

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	39.1	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			95.9	mg/Kg	1	100	96	70 - 130

Method Blank (1) QC Batch: 109347

QC Batch:	109347	Date Analyzed:	2014-02-16	Analyzed By:	AK
Prep Batch:	92440	QC Preparation:	2014-02-14	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.66	mg/Kg	1	2.00	83	70 - 130
4-Bromofluorobenzene (4-BFB)			1.49	mg/Kg	1	2.00	74	70 - 130

Method Blank (1) QC Batch: 109393

QC Batch:	109393	Date Analyzed:	2014-02-18	Analyzed By:	AK
Prep Batch:	92451	QC Preparation:	2014-02-15	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.66	mg/Kg	1	2.00	83	70 - 130
4-Bromofluorobenzene (4-BFB)			1.52	mg/Kg	1	2.00	76	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 109229 | Date Analyzed: 2014-02-13 | Analyzed By: RG
Prep Batch: 92372 | QC Preparation: 2014-02-12 | Prepared By: RG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	263	mg/Kg	1	250	<6.88	105	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	266	mg/Kg	1	250	<6.88	106	70 - 130	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	97.1	97.7	mg/Kg	1	100	97	98	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 109281 | Date Analyzed: 2014-02-14 | Analyzed By: RG
Prep Batch: 92417 | QC Preparation: 2014-02-13 | Prepared By: RG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	275	mg/Kg	1	250	39.1	94	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	292	mg/Kg	1	250	39.1	101	70 - 130	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	93.7	106	mg/Kg	1	100	94	106	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 109347 | Date Analyzed: 2014-02-16 | Analyzed By: AK
Prep Batch: 92440 | QC Preparation: 2014-02-14 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.4	mg/Kg	1	20.0	<2.32	92	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.4	mg/Kg	1	20.0	<2.32	92	70 - 130	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.80	1.72	mg/Kg	1	2.00	90	86	70 - 130
4-Bromofluorobenzene (4-BFB)	1.74	1.73	mg/Kg	1	2.00	87	86	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 109393 | Date Analyzed: 2014-02-18 | Analyzed By: AK
Prep Batch: 92451 | QC Preparation: 2014-02-15 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.1	mg/Kg	1	20.0	<2.32	70	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qs	Qs 1	13.9	mg/Kg	1	20.0	<2.32	70	70 - 130	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.53	1.53	mg/Kg	1	2.00	76	76	70 - 130
4-Bromofluorobenzene (4-BFB)	1.48	1.65	mg/Kg	1	2.00	74	82	70 - 130

Matrix Spike (MS-1) Spiked Sample: 354196

QC Batch: 109229 | Date Analyzed: 2014-02-13 | Analyzed By: RG
Prep Batch: 92372 | QC Preparation: 2014-02-12 | Prepared By: RG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Qs	Qs 1	9520	mg/Kg	5	250	8600	368	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qs	Qs 1	8500	mg/Kg	5	250	8600	-40	70 - 130	11	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	310	297	mg/Kg	5	100	310	297	70 - 130

Matrix Spike (MS-1) Spiked Sample: 354257

QC Batch: 109281 | Date Analyzed: 2014-02-14 | Analyzed By: RG
Prep Batch: 92417 | QC Preparation: 2014-02-13 | Prepared By: RG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	390	mg/Kg	1	250	195	78	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	430	mg/Kg	1	250	195	94	70 - 130	10	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	97.4	95.2	mg/Kg	1	100	97	95	70 - 130

Matrix Spike (MS-1) Spiked Sample: 354239

QC Batch: 109347 | Date Analyzed: 2014-02-16 | Analyzed By: AK
Prep Batch: 92440 | QC Preparation: 2014-02-14 | Prepared By: AK

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	[1] Qs	Qs	1	<23.2	mg/Kg	10	20.0	<23.2	0	70 - 130

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

Param		F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	[2] Qs	Qs	1	<23.2	mg/Kg	10	20.0	<23.2	0	70 - 130	0	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)	1.60	1.59	mg/Kg	10	2	80	80	70 - 130
4-Bromofluorobenzene (4-BFB)	1.84	1.87	mg/Kg	10	2	92	94	70 - 130

Matrix Spike (MS-1) Spiked Sample: 354259

QC Batch: 109393 | Date Analyzed: 2014-02-18 | Analyzed By: AK
Prep Batch: 92451 | QC Preparation: 2014-02-15 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.0	mg/Kg	1	20.0	2.72	81	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.2	mg/Kg	1	20.0	2.72	82	70 - 130	1	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)			1.45	1.52	mg/Kg	1	2	72	76	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	1.34	1.77	mg/Kg	1	2	67	88	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 109229 | Date Analyzed: 2014-02-13 | Analyzed By: RG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	263	105	80 - 120	2014-02-13

Standard (CCV-2)

QC Batch: 109229 | Date Analyzed: 2014-02-13 | Analyzed By: RG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	296	118	80 - 120	2014-02-13

Standard (CCV-3)

QC Batch: 109229 | Date Analyzed: 2014-02-13 | Analyzed By: RG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	274	110	80 - 120	2014-02-13

Standard (CCV-1)

QC Batch: 109281 | Date Analyzed: 2014-02-14 | Analyzed By: RG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	285	114	80 - 120	2014-02-14

Standard (CCV-2)

QC Batch: 109281 Date Analyzed: 2014-02-14 Analyzed By: RG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	272	109	80 - 120	2014-02-14

Standard (CCV-3)

QC Batch: 109281 Date Analyzed: 2014-02-14 Analyzed By: RG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	266	106	80 - 120	2014-02-14

Standard (CCV-1)

QC Batch: 109347 Date Analyzed: 2014-02-16 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.935	94	80 - 120	2014-02-16

Standard (CCV-2)

QC Batch: 109347 Date Analyzed: 2014-02-16 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.897	90	80 - 120	2014-02-16

Standard (CCV-3)

QC Batch: 109347 Date Analyzed: 2014-02-16 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.840	84	80 - 120	2014-02-16

Standard (CCV-1)

QC Batch: 109393 Date Analyzed: 2014-02-18 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.840	84	80 - 120	2014-02-18

Standard (CCV-2)

QC Batch: 109393 Date Analyzed: 2014-02-18 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.827	83	80 - 120	2014-02-18

Standard (CCV-3)

QC Batch: 109393 Date Analyzed: 2014-02-18 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.861	86	80 - 120	2014-02-18

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-13-7	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

Result Comments

1 Dilution due to surfactants.
2 Dilution due to surfactants.

Attachments

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

LAB Order ID # 14021005

Page 1 of 1

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Company Name: Talon/LPE
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Fax #:
Contact Person: Chris Spore / Melissa Deeker
E-mail: cspore@talonlpe.com & mdeecker@talonlpe.com
Invoice to: (If different from above)
Project #: 701162.053 01
Project Name: Cimarex Zafiro State 32#1
Project Location (including state): Hobbs, NM
Sampler Signature: Melissa Deeker

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC							Turn Around Time if different from standard	Hold
354214	BH-3B Surface	1	4oz		X							X		2/6	1200				X																						
215	BH-3B 2' bgs	↓	↓		↓							↓		↓	1206				↓																						
216	BH-3B 4' bgs														1211																										
217	BH-3B 5' bgs														1216																										
218	BH-3B 6' bgs														1220																										
219	BH-3B 7' bgs														1224																										
220	BH-3B 8' bgs	↓	↓		↓							↓		↓	1234				↓																						

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Melissa Deeker	Talon LPE	2/7	1644		TA	2/7/14	16:44	INST 39 °C OBS 39 °C COR 38 °C
								INST ____ °C OBS ____ °C COR ____ °C
								INST ____ °C OBS ____ °C COR ____ °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS: Midland - ag

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Carrier #

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Melissa Decker
Talon LPE-Midland
2901 State Highway 349
Midland, TX, 79706

Report Date: April 16, 2014

Work Order: 14041123

Project Location: Hobbs,NM
Project Name: Cimarex/Zafiro State 32 Com #1
Project Number: 701162.053.01

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
360219	13' BGS	soil	2014-04-09	11:15	2014-04-11

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.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Cimarex/Zafiro State 32 Com #1 were received by TraceAnalysis, Inc. on 2014-04-11 and assigned to work order 14041123. Samples for work order 14041123 were received intact at a temperature of 3.7 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	93954	2014-04-14 at 11:00	111164	2014-04-15 at 08:29
TPH DRO - NEW	S 8015 D	93963	2014-04-14 at 11:00	111142	2014-04-14 at 14:17
TPH GRO	S 8015 D	93954	2014-04-14 at 11:00	111165	2014-04-15 at 08:35

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 14041123 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: 360219 - 13' BGS

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	111164	Date Analyzed:	2014-04-15	Analyzed By:	AK
Prep Batch:	93954	Sample Preparation:	2014-04-14	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.12	mg/Kg	1	2.00	106	70 - 130
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	70 - 130

Sample: 360219 - 13' BGS

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	111142	Date Analyzed:	2014-04-14	Analyzed By:	RG
Prep Batch:	93963	Sample Preparation:	2014-04-14	Prepared By:	RG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			101	mg/Kg	1	100	101	70 - 130

Sample: 360219 - 13' BGS

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	111165	Date Analyzed:	2014-04-15	Analyzed By:	AK
Prep Batch:	93954	Sample Preparation:	2014-04-14	Prepared By:	AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.09	mg/Kg	1	2.00	104	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Method Blanks

Method Blank (1) QC Batch: 111142

QC Batch: 111142 | Date Analyzed: 2014-04-14 | Analyzed By: RG
Prep Batch: 93963 | QC Preparation: 2014-04-14 | Prepared By: RG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			97.3	mg/Kg	1	100	97	70 - 130

Method Blank (1) QC Batch: 111164

QC Batch: 111164 | Date Analyzed: 2014-04-15 | Analyzed By: AK
Prep Batch: 93954 | QC Preparation: 2014-04-14 | Prepared By: AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.20	mg/Kg	1	2.00	110	70 - 130
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	70 - 130

Method Blank (1) QC Batch: 111165

QC Batch: 111165 | Date Analyzed: 2014-04-15 | Analyzed By: AK
Prep Batch: 93954 | QC Preparation: 2014-04-14 | Prepared By: AK

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.09	mg/Kg	1	2.00	104	70 - 130
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 111142 | Date Analyzed: 2014-04-14 | Analyzed By: RG
Prep Batch: 93963 | QC Preparation: 2014-04-14 | Prepared By: RG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	200	mg/Kg	1	250	<7.41	80	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	207	mg/Kg	1	250	<7.41	83	70 - 130	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	110	114	mg/Kg	1	100	110	114	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 111164 | Date Analyzed: 2014-04-15 | Analyzed By: AK
Prep Batch: 93954 | QC Preparation: 2014-04-14 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.54	mg/Kg	1	2.00	<0.00533	77	70 - 130
Toluene		1	1.55	mg/Kg	1	2.00	<0.00645	78	70 - 130
Ethylbenzene		1	1.64	mg/Kg	1	2.00	<0.0116	82	70 - 130
Xylene		1	4.96	mg/Kg	1	6.00	<0.00874	83	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.63	mg/Kg	1	2.00	<0.00533	82	70 - 130	6	20
Toluene		1	1.66	mg/Kg	1	2.00	<0.00645	83	70 - 130	7	20
Ethylbenzene		1	1.75	mg/Kg	1	2.00	<0.0116	88	70 - 130	6	20
Xylene		1	5.26	mg/Kg	1	6.00	<0.00874	88	70 - 130	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.89	2.02	mg/Kg	1	2.00	94	101	70 - 130
4-Bromofluorobenzene (4-BFB)	1.60	1.63	mg/Kg	1	2.00	80	82	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 111165 | Date Analyzed: 2014-04-15 | Analyzed By: AK
Prep Batch: 93954 | QC Preparation: 2014-04-14 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.2	mg/Kg	1	20.0	<2.32	81	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	16.9	mg/Kg	1	20.0	<2.32	84	70 - 130	4	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.97	2.02	mg/Kg	1	2.00	98	101	70 - 130
4-Bromofluorobenzene (4-BFB)	1.91	1.87	mg/Kg	1	2.00	96	93	70 - 130

Matrix Spike (MS-1) Spiked Sample: 360217

QC Batch: 111142 | Date Analyzed: 2014-04-14 | Analyzed By: RG
Prep Batch: 93963 | QC Preparation: 2014-04-14 | Prepared By: RG

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Qs	Qs	1	312	mg/Kg	1	250	139	69	70 - 130

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

Param		F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qs	Qs	1	273	mg/Kg	1	250	139	54	70 - 130	13	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	122	110	mg/Kg	1	100	122	110	70 - 130

Matrix Spike (MS-1) Spiked Sample: 360217

QC Batch: 111164 | Date Analyzed: 2014-04-15 | Analyzed By: AK
Prep Batch: 93954 | QC Preparation: 2014-04-14 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.63	mg/Kg	1	2.00	<0.00533	82	70 - 130
Toluene		1	1.69	mg/Kg	1	2.00	<0.00645	84	70 - 130
Ethylbenzene		1	1.80	mg/Kg	1	2.00	<0.0116	90	70 - 130
Xylene		1	5.41	mg/Kg	1	6.00	<0.00874	90	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.71	mg/Kg	1	2.00	<0.00533	86	70 - 130	5	20
Toluene		1	1.75	mg/Kg	1	2.00	<0.00645	88	70 - 130	4	20
Ethylbenzene		1	1.88	mg/Kg	1	2.00	<0.0116	94	70 - 130	4	20
Xylene	Qr,Qs	Qr,Qs 1	4.04	mg/Kg	1	6.00	<0.00874	67	70 - 130	29	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	2.06	mg/Kg	1	2	101	103	70 - 130
4-Bromofluorobenzene (4-BFB)	1.70	1.76	mg/Kg	1	2	85	88	70 - 130

Matrix Spike (MS-1) Spiked Sample: 360217

QC Batch: 111165 | Date Analyzed: 2014-04-15 | Analyzed By: AK
Prep Batch: 93954 | QC Preparation: 2014-04-14 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.2	mg/Kg	1	20.0	<2.32	91	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[1]	18.3	mg/Kg	1	20.0	<2.32	92	70 - 130	0	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)	1.91	1.88	mg/Kg	1	2	96	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.97	1.86	mg/Kg	1	2	98	93	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 111142 Date Analyzed: 2014-04-14 Analyzed By: RG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	200	80	80 - 120	2014-04-14

Standard (CCV-2)

QC Batch: 111142 Date Analyzed: 2014-04-14 Analyzed By: RG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	201	80	80 - 120	2014-04-14

Standard (CCV-3)

QC Batch: 111142 Date Analyzed: 2014-04-14 Analyzed By: RG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	209	84	80 - 120	2014-04-14

Standard (CCV-1)

QC Batch: 111164 Date Analyzed: 2014-04-15 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0910	91	80 - 120	2014-04-15
Toluene		1	mg/kg	0.100	0.0912	91	80 - 120	2014-04-15

continued ...

standard continued . . .

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ethylbenzene		1	mg/kg	0.100	0.0928	93	80 - 120	2014-04-15
Xylene		1	mg/kg	0.300	0.278	93	80 - 120	2014-04-15

Standard (CCV-2)

QC Batch: 111164 Date Analyzed: 2014-04-15 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0940	94	80 - 120	2014-04-15
Toluene		1	mg/kg	0.100	0.0941	94	80 - 120	2014-04-15
Ethylbenzene		1	mg/kg	0.100	0.0949	95	80 - 120	2014-04-15
Xylene		1	mg/kg	0.300	0.282	94	80 - 120	2014-04-15

Standard (CCV-3)

QC Batch: 111164 Date Analyzed: 2014-04-15 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0898	90	80 - 120	2014-04-15
Toluene		1	mg/kg	0.100	0.0893	89	80 - 120	2014-04-15
Ethylbenzene		1	mg/kg	0.100	0.0899	90	80 - 120	2014-04-15
Xylene		1	mg/kg	0.300	0.268	89	80 - 120	2014-04-15

Standard (CCV-1)

QC Batch: 111165 Date Analyzed: 2014-04-15 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.995	100	80 - 120	2014-04-15

Standard (CCV-2)

QC Batch: 111165 Date Analyzed: 2014-04-15 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.904	90	80 - 120	2014-04-15

Standard (CCV-3)

QC Batch: 111165 Date Analyzed: 2014-04-15 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.901	90	80 - 120	2014-04-15

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-13-7	Midland

Standard Flags

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

Attachments

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

1404123

LAB Order ID #_____ Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

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Midland, Texas 79703
Tel (432) 689-6301
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200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

8808 Camp Bowie Blvd. West, Suite 180
Ft. Worth, Texas 76116
Tel (817) 201-5260
Fax (817) 560-4336

Company Name: Talon Midland — Phone #:

Address: (Street, City, Zip) — Fax #:

Contact Person: Melissa Decker — E-mail: mdecker@talonlpe.com, cspore@talonlpe.com

Invoice to: (If different from above) Cimarex Energy - Johnny Titsworth

Project #: 701162.053.01 — Project Name: Zafiro

Project Location (including state): Hobbs, NM — Sampler Signature: Chris Aspore

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Turn Around Time if different from standard	Hold
360249	13' BGS	1	4oz		X							X		4/9	1115		X		X															

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°C:
Chris Aspore	TalonLPE	4/11/14	1115	M. Decker	TalonLPE	4/11/14	1115	
M. Decker	TalonLPE	4/11/14	1313	Allison Johnson	TA	4/11/14	13:15	3.7

LAB USE ONLY
Intact (Y) N
Headspace Y / N / NA
Log-in-Review

REMARKS: Midland acct

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Carry-in

ORIGINAL COPY

TRACEANALYSIS, INC.

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

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Melissa Decker
Talon LPE-Midland
2901 State Highway 349
Midland, TX, 79706

Report Date: June 13, 2014

Work Order: 14060411

Project Location: Hobbs,NM
Project Name: Cimarex/Zafiro State 32 Com #1
Project Number: 701162.053.01

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
364623	BH-1	soil	2014-06-02	12:30	2014-06-04
364624	SW-N	soil	2014-06-02	12:33	2014-06-04
364625	SW-E	soil	2014-06-02	12:35	2014-06-04
364626	SW-S	soil	2014-06-02	12:42	2014-06-04
364627	SW-W	soil	2014-06-02	12:46	2014-06-04

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

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Cimarex/Zafiro State 32 Com #1 were received by TraceAnalysis, Inc. on 2014-06-04 and assigned to work order 14060411. Samples for work order 14060411 were received intact at a temperature of 3.3 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	95118	2014-06-04 at 10:56	112541	2014-06-05 at 07:49
Chloride (Titration)	SM 4500-Cl B	95202	2014-06-06 at 13:26	112605	2014-06-06 at 13:26
TPH DRO - NEW	S 8015 D	95370	2014-06-12 at 12:00	112788	2014-06-13 at 10:06
TPH GRO	S 8015 D	95222	2014-06-07 at 10:17	112624	2014-06-08 at 09:23

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 14060411 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.

The temperature of the Cold Box for storing samples was between 6 and 15.0 degrees C between June 8th and June 9th, 2014. We do not believe this will affect your TPH results.

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: 364623 - BH-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	112541	Date Analyzed:	2014-06-05	Analyzed By:	AK
Prep Batch:	95118	Sample Preparation:	2014-06-04	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		2	**13.4**	mg/Kg	5	0.0200
Toluene	Je	2	**111**	mg/Kg	5	0.0200
Ethylbenzene	Je	2	**52.6**	mg/Kg	5	0.0200
Xylene	Je	2	**308**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			12.4	mg/Kg	5	10.0	124	70 - 130
4-Bromofluorobenzene (4-BFB)			21.1	mg/Kg	5	10.0	211	70 - 130

Sample: 364623 - BH-1

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	112605	Date Analyzed:	2014-06-06	Analyzed By:	AT
Prep Batch:	95202	Sample Preparation:	2014-06-06	Prepared By:	AT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**27.0**	mg/Kg	5	5.00

Sample: 364623 - BH-1

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	112788	Date Analyzed:	2014-06-13	Analyzed By:	CM
Prep Batch:	95370	Sample Preparation:	2014-06-12	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**2220**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		150	mg/Kg	1	100	150	70 - 130

Sample: 364623 - BH-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	112624	Date Analyzed:	2014-06-08	Analyzed By:	AK
Prep Batch:	95222	Sample Preparation:	2014-06-07	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Je	2	**9170**	mg/Kg	50	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				1.49	mg/Kg	50	2.00	74	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		149	mg/Kg	50	2.00	7450	70 - 130

Sample: 364624 - SW-N

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	112541	Date Analyzed:	2014-06-05	Analyzed By:	AK
Prep Batch:	95118	Sample Preparation:	2014-06-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		2	**0.601**	mg/Kg	1	0.0200
Toluene		2	**2.36**	mg/Kg	1	0.0200
Ethylbenzene		2	**2.74**	mg/Kg	1	0.0200
Xylene		2	**17.6**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			5.04	mg/Kg	1	2.00	252	70 - 130

Sample: 364624 - SW-N

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	112788	Date Analyzed:	2014-06-13	Analyzed By:	CM
Prep Batch:	95370	Sample Preparation:	2014-06-12	Prepared By:	CM

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

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

Sample: 364624 - SW-N

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	112624	Date Analyzed:	2014-06-08	Analyzed By:	AK
Prep Batch:	95222	Sample Preparation:	2014-06-07	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.03	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	70 - 130

Sample: 364625 - SW-E

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	112541	Date Analyzed:	2014-06-05	Analyzed By:	AK
Prep Batch:	95118	Sample Preparation:	2014-06-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		2	**0.0284**	mg/Kg	1	0.0200
Toluene		2	**0.145**	mg/Kg	1	0.0200
Ethylbenzene		2	**0.105**	mg/Kg	1	0.0200
Xylene		2	**0.332**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			2.31	mg/Kg	1	2.00	116	70 - 130

Sample: 364625 - SW-E

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	112788	Date Analyzed:	2014-06-13	Analyzed By:	CM
Prep Batch:	95370	Sample Preparation:	2014-06-12	Prepared By:	CM

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

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

Sample: 364625 - SW-E

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	112624	Date Analyzed:	2014-06-08	Analyzed By:	AK
Prep Batch:	95222	Sample Preparation:	2014-06-07	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.13	mg/Kg	1	2.00	106	70 - 130
4-Bromofluorobenzene (4-BFB)			1.85	mg/Kg	1	2.00	92	70 - 130

Sample: 364626 - SW-S

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	112541	Date Analyzed:	2014-06-05	Analyzed By:	AK
Prep Batch:	95118	Sample Preparation:	2014-06-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene		2	**0.0420**	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene		2	**0.144**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			2.37	mg/Kg	1	2.00	118	70 - 130

Sample: 364626 - SW-S

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	112788	Date Analyzed:	2014-06-13	Analyzed By:	CM
Prep Batch:	95370	Sample Preparation:	2014-06-12	Prepared By:	CM

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

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

Sample: 364626 - SW-S

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	112624	Date Analyzed:	2014-06-08	Analyzed By:	AK
Prep Batch:	95222	Sample Preparation:	2014-06-07	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.74	mg/Kg	1	2.00	87	70 - 130
4-Bromofluorobenzene (4-BFB)			1.53	mg/Kg	1	2.00	76	70 - 130

Sample: 364627 - SW-W

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	112541	Date Analyzed:	2014-06-05	Analyzed By:	AK
Prep Batch:	95118	Sample Preparation:	2014-06-04	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		2	**0.0282**	mg/Kg	1	0.0200
Xylene		2	**0.0906**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	1	2.00	114	70 - 130

Sample: 364627 - SW-W

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	112788	Date Analyzed:	2014-06-13	Analyzed By:	CM
Prep Batch:	95370	Sample Preparation:	2014-06-12	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**648**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			115	mg/Kg	1	100	115	70 - 130

Sample: 364627 - SW-W

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	112624	Date Analyzed:	2014-06-08	Analyzed By:	AK
Prep Batch:	95222	Sample Preparation:	2014-06-07	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		2	**534**	mg/Kg	10	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				1.89	mg/Kg	10	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		15.0	mg/Kg	10	2.00	750	70 - 130

Method Blanks

Method Blank (1) QC Batch: 112541

QC Batch: 112541 | Date Analyzed: 2014-06-05 | Analyzed By: AK
Prep Batch: 95118 | QC Preparation: 2014-06-04 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.00354	mg/Kg	0.02
Toluene		2	<0.00966	mg/Kg	0.02
Ethylbenzene		2	<0.00790	mg/Kg	0.02
Xylene		2	<0.00667	mg/Kg	0.02

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

Method Blank (1) QC Batch: 112605

QC Batch: 112605 | Date Analyzed: 2014-06-06 | Analyzed By: AT
Prep Batch: 95202 | QC Preparation: 2014-06-06 | Prepared By: AT

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.05	mg/Kg	5

Method Blank (1) QC Batch: 112624

QC Batch: 112624 | Date Analyzed: 2014-06-08 | Analyzed By: AK
Prep Batch: 95222 | QC Preparation: 2014-06-07 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		2	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.20	mg/Kg	1	2.00	110	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Method Blank (1) QC Batch: 112788

QC Batch:	112788	Date Analyzed:	2014-06-13	Analyzed By:	CM
Prep Batch:	95370	QC Preparation:	2014-06-12	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	12.0	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			105	mg/Kg	1	100	105	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 112541 | Date Analyzed: 2014-06-05 | Analyzed By: AK
Prep Batch: 95118 | QC Preparation: 2014-06-04 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	1.89	mg/Kg	1	2.00	<0.00354	94	70 - 130
Toluene		2	2.00	mg/Kg	1	2.00	<0.00966	100	70 - 130
Ethylbenzene		2	2.10	mg/Kg	1	2.00	<0.00790	105	70 - 130
Xylene		2	6.37	mg/Kg	1	6.00	<0.00667	106	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	2.05	mg/Kg	1	2.00	<0.00354	103	70 - 130	8	20
Toluene		2	2.18	mg/Kg	1	2.00	<0.00966	109	70 - 130	9	20
Ethylbenzene		2	2.30	mg/Kg	1	2.00	<0.00790	115	70 - 130	9	20
Xylene		2	6.96	mg/Kg	1	6.00	<0.00667	116	70 - 130	9	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.96	1.98	mg/Kg	1	2.00	98	99	70 - 130
4-Bromofluorobenzene (4-BFB)	2.18	2.20	mg/Kg	1	2.00	109	110	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 112605 | Date Analyzed: 2014-06-06 | Analyzed By: AT
Prep Batch: 95202 | QC Preparation: 2014-06-06 | Prepared By: AT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			513	mg/Kg	1	500	<3.05	103	85 - 115

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			519	mg/Kg	1	500	<3.05	104	85 - 115	1	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: 112624 | Date Analyzed: 2014-06-08 | Analyzed By: AK
Prep Batch: 95222 | QC Preparation: 2014-06-07 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		[2]	15.8	mg/Kg	1	20.0	<2.32	79	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[2]	16.3	mg/Kg	1	20.0	<2.32	82	70 - 130	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.94	2.02	mg/Kg	1	2.00	97	101	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.92	mg/Kg	1	2.00	97	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 112788 | Date Analyzed: 2014-06-13 | Analyzed By: CM
Prep Batch: 95370 | QC Preparation: 2014-06-12 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		[1]	228	mg/Kg	1	250	12	86	70 - 130

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		[1]	223	mg/Kg	1	250	12	84	70 - 130	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	97.9	97.8	mg/Kg	1	100	98	98	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 364595

QC Batch: 112541 | Date Analyzed: 2014-06-05 | Analyzed By: AK
Prep Batch: 95118 | QC Preparation: 2014-06-04 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	1.97	mg/Kg	1	2.00	0.0193	98	70 - 130
Toluene		2	2.08	mg/Kg	1	2.00	0.0215	103	70 - 130
Ethylbenzene		2	2.13	mg/Kg	1	2.00	<0.00790	106	70 - 130
Xylene		2	6.52	mg/Kg	1	6.00	<0.00667	109	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	1.83	mg/Kg	1	2.00	0.0193	90	70 - 130	7	20
Toluene		2	1.93	mg/Kg	1	2.00	0.0215	95	70 - 130	8	20
Ethylbenzene		2	2.00	mg/Kg	1	2.00	<0.00790	100	70 - 130	6	20
Xylene		2	6.08	mg/Kg	1	6.00	<0.00667	101	70 - 130	7	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	2.00	mg/Kg	1	2	101	100	70 - 130
4-Bromofluorobenzene (4-BFB)	2.33	2.35	mg/Kg	1	2	116	118	70 - 130

Matrix Spike (MS-1) Spiked Sample: 364623

QC Batch: 112605 | Date Analyzed: 2014-06-06 | Analyzed By: AT
Prep Batch: 95202 | QC Preparation: 2014-06-06 | Prepared By: AT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			588	mg/Kg	1	500	27	112	75.2 - 127

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

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			615	mg/Kg	1	500	27	118	75.2 - 127	4	20

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

Matrix Spike (MS-1) Spiked Sample: 364626

QC Batch: 112624 | Date Analyzed: 2014-06-08 | Analyzed By: AK
Prep Batch: 95222 | QC Preparation: 2014-06-07 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	15.4	mg/Kg	1	20.0	<2.32	77	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		2	15.3	mg/Kg	1	20.0	<2.32	76	70 - 130	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.91	1.90	mg/Kg	1	2	96	95	70 - 130
4-Bromofluorobenzene (4-BFB)	1.79	1.88	mg/Kg	1	2	90	94	70 - 130

Matrix Spike (MS-1) Spiked Sample: 364529

QC Batch: 112788 | Date Analyzed: 2014-06-13 | Analyzed By: CM
Prep Batch: 95370 | QC Preparation: 2014-06-12 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	219	mg/Kg	1	250	<5.22	88	70 - 130

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

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		[1]	235	mg/Kg	1	250	<5.22	94	70 - 130	7	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	103	103	mg/Kg	1	100	103	103	70 - 130

Calibration Standards

Standard (CCV-2)

QC Batch: 112541 Date Analyzed: 2014-06-05 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.106	106	80 - 120	2014-06-05
Toluene		2	mg/kg	0.100	0.108	108	80 - 120	2014-06-05
Ethylbenzene		2	mg/kg	0.100	0.100	100	80 - 120	2014-06-05
Xylene		2	mg/kg	0.300	0.308	103	80 - 120	2014-06-05

Standard (CCV-3)

QC Batch: 112541 Date Analyzed: 2014-06-05 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.104	104	80 - 120	2014-06-05
Toluene		2	mg/kg	0.100	0.108	108	80 - 120	2014-06-05
Ethylbenzene		2	mg/kg	0.100	0.0992	99	80 - 120	2014-06-05
Xylene		2	mg/kg	0.300	0.305	102	80 - 120	2014-06-05

Standard (CCV-4)

QC Batch: 112541 Date Analyzed: 2014-06-05 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.102	102	80 - 120	2014-06-05
Toluene		2	mg/kg	0.100	0.104	104	80 - 120	2014-06-05
Ethylbenzene		2	mg/kg	0.100	0.101	101	80 - 120	2014-06-05
Xylene		2	mg/kg	0.300	0.310	103	80 - 120	2014-06-05

Standard (ICV-1)

QC Batch: 112605 Date Analyzed: 2014-06-06 Analyzed By: AT

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	103	103	85 - 115	2014-06-06

Standard (CCV-1)

QC Batch: 112605 Date Analyzed: 2014-06-06 Analyzed By: AT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	97.0	97	85 - 115	2014-06-06

Standard (CCV-1)

QC Batch: 112624 Date Analyzed: 2014-06-08 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.02	102	80 - 120	2014-06-08

Standard (CCV-2)

QC Batch: 112624 Date Analyzed: 2014-06-08 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	0.927	93	80 - 120	2014-06-08

Standard (CCV-1)

QC Batch: 112788 Date Analyzed: 2014-06-13 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	232	93	80 - 120	2014-06-13

Standard (CCV-2)

QC Batch: 112788 Date Analyzed: 2014-06-13 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	224	90	80 - 120	2014-06-13

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-14-10	Lubbock
2	NELAP	T104704392-13-7	Midland

Standard Flags

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

Attachments

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

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LAB Order ID #_____ Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

8808 Camp Bowie Blvd. West, Suite 180
Ft. Worth, Texas 76116
Tel (817) 201-5260
Fax (817) 560-4336

Company Name: Talon/LPE
Phone #: 682-742-0742
Address: (Street, City, Zip) 2901 Hwy 349 Midland, TX
Fax #:
Contact Person: Melissa Decker
E-mail: mdecker@talonlpe.com
Invoice to: (If different from above) Johnny Titsworth - Cimarex
Project #: 701162.053.01
Project Name: Cimarex Zafiro 32
Project Location (including state): Hobbs, NM
Sampler Signature: Melissa Decker

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Chloride	Turn Around Time if different from standard	Hold
364623	BH-1	2	40z		X							X		6/2/14	1230		X		X													X		
624	SW-N	↓	↓		↓							↓		↓	1233		↓		↓															
625	SW-E														1235																			
626	SW-S														1242																			
627	SW-W														1246																			

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
MDecker	Talon/LPE	6/4/14	0840		TA	6/4/14	8:40	3.3
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS: Rush Lubbock ~~TPH~~ 6/4 Midland BTEX

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Carrier #

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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LAB Order ID # _____ Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
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Ft. Worth, Texas 76116
Tel (817) 201-5260
Fax (817) 560-4336

Company Name: Talon/LPE
Phone #: 682-742-0742
Address: (Street, City, Zip) 2901 Hwy 349 Midland, TX
Fax #:
Contact Person: Melissa Decker
E-mail: mdecker@talonlpe.com
Invoice to: (If different from above) Johnny Titsworth - Cimarex
Project #: 701162.053.01
Project Name: Cimarex Zafiro 32
Project Location (including state): Hobbs, NM
Sampler Signature: Melissa Decker

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
364623	BH-1	2	40z		X							X		6/2/14	1230
624	SW-N	↓	↓		↓							↓		↓	1233
625	SW-E														1235
626	SW-S														1242
627	SW-W														1246

ANALYSIS REQUEST	
MTBE 8021B / 602 / 8260B / 624	
BTEX 8021B / 602 / 8260B / 624	X
TPH 418.1 / TX1005 / TX1005 Ext(C35)	
TPH 8015 GRO / DRO / TVHC	X
PAH 8270C / 625	
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
TCLP Pesticides	
RCI	
GC/MS Vol. 8260B / 624	
GC/MS Semi. Vol. 8270C / 625	
PCB's 8082 / 608	
Pesticides 8081A / 608	
BOD, TSS, pH	
Moisture Content	
Chloride	X
Turn Around Time if different from standard	
Hold	

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
MDecker	Talon/LPE	6/4/14	0840		TA	6/4/14	8:40	3.3
	TA	6/4/14	15:30					
				Brenda Ward	Lubbock	6/5/14	9:20	IR #3 4.9 3.4

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review AJ

REMARKS: Lubbock ~~all~~ TPH to Midland BTEX

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Carrier # Fedex 1SZR285688

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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APPENDIX E

NMOCD RELEASE NOTIFICATION AND CORRECTIVE ACTION C-141

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

X Initial Report ☐ Final Report

Name of Company: Cimarex Energy Company	Contact: Johnny Titsworth
Address: 600 N. Marienfield, Suite 600, Midland, TX 79701	Telephone No. (432)250-2059
Facility Name: Zafiro State 32 Com #1	Facility Type: Tank Battery

Surface Owner: State	Mineral Owner:	API No. 30-025-34508

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	32	18	34	2310	FNL	1980	FEL	Lea

Latitude: 32.70510 **Longitude:** -103.58040

NATURE OF RELEASE

Type of Release: Condensate	Volume of Release: 49 BBL	Volume Recovered:
Source of Release: Load line	Date & Hour of Occurrence:	Date & Hour of Discovery:
Was Immediate Notice Given? X Yes ☐ No ☐ Not Required	If YES, To Whom? Johnny Titsworth	
By Whom? Mark Bishop	Date and Hour: 12/12/13 1400	
Was a Watercourse Reached? ☐ Yes X No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Unknown person maliciously or accidentally caused 3" load line to be pulled from Victaulic connection to be pulled out of connection to water tank

Describe Area Affected and Cleanup Action Taken.*
Majority of spill was contained inside the firewall, with a small amount breaching the firewall out on to the location pad.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Johnny Titsworth	Approved by Environmental Specialist:	
Title: Environmental Compliance Coordinator	Approval Date:	Expiration Date:
E-mail Address: jtitsworth@cimarex.com	Conditions of Approval:	Attached ☐
Date: 12/12/13 Phone: (432)-250-2059		

* Attach Additional Sheets If Necessary