SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	**Pickett/Exxon Common 8 Federal #1 TB**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit A**	**Sec 8**	**T25S**	**R29E**		
Lease Number:	**API-30-015-25894**					
County:	**Eddy County**					
GPS:	**32.14971° N**			**103.99183° W**		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the post office in Malaga, NM, travel south on Hwy 285 3.8 miles, turn left on Whitehorn Road and travel 4.0 miles, turn left and travel 1.8 miles, at caliche pit on right turn left and travel 3.5 miles, turn left and travel 2.0 miles, turn right and travel 0.3 miles to site.					

Release Data:	
Date Released:	9/27/2011
Type Release:	Produced Water
Source of Contamination:	Tank
Fluid Released:	10 bbls
Fluids Recovered:	8 bbls

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300		1910 N. Big Spring
P.O. Box			
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		ike.tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	10
>100 ft.	0	
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:	**10**	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	1,000

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TETRA TECH

January 7, 2013

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
1301 West Grand Avenue
Artesia, New Mexico 88210

Re: Closure Request for the COG Operating LLC., Pickett/Exxon Common 8 Federal #1 Tank Battery, Unit A, Section 8, Township 25 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Pickett/Exxon Common 8 Federal #1 Tank Battery located in Unit A, Section 8, Township 25 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.14971°, W 103.99183°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on September 27, 2011, and released approximately ten (10) barrels of produced fluid from a broken valve on top of the tank. To alleviate the problem, COG personnel repaired the valve. Eight (8) barrels of standing fluids were recovered. The spill was contained inside the firewall of the facility and measured an approximate length of 40.0', with a width of 2.0' to 4.0'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 8. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 75' below surface. The groundwater data is shown in Appendix B.

Tetra Tech
1910 North Big Spring, Midland,TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

Soil Assessment and Analytical Results

On November 2, 2011, Tetra Tech personnel inspected and sampled the spill area. Auger hole (AH-1) was installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole location is shown on Figure 3.

Referring to Table 1, none of the samples exceeded the RRAL for BTEX. However, all of the samples exceeded the RRAL for TPH to a depth of 5-5.0' below surface and not vertically defined. Deeper samples were not collected due to a dense caliche formation. In addition, the chloride concentrations detected do not appear to an environmental concern.

Assessment and Closure Activities

Prior to excavating the impacted soil, a backhoe trench was installed to a depth of 9.0' below surface. The trench results are shown in Table 1. The TPH concentration was not vertically defined with a bottom sample of 3,511 mg/kg at 9.0' below surface. Based on the results, Tetra Tech installed two (2) boreholes to define the extents. The borehole results are summarized in Table 1. The area of BH-1 did not show an impact to the soils above the TPH RRAL. However, BH-2 did show TPH above the RRAL at 0-1' and 2-3' and was vertically defined below the RRAL at 4-5' below surface. Based on the results, the hydrocarbon impact appeared to be limited and confined to the area of AH-1 and BH-2.

TETRA TECH

Tetra Tech personnel supervised the excavation of the site. Due to the proximity to lines and production tanks, the impacted area was excavated to a depth of 5.0' below surface for safety concerns and measured approximately 3' x 15'. The excavated area and depth are highlighted in Table 1 and shown on Figure 4. Approximately 30 cubic yards of soil were excavated and transported to the R360 facility for proper disposal.

Once excavated, confirmation samples were collected for the excavation and the excavation bottom and sidewalls were all below the RRAL for TPH and BTEX. The sampling results are summarized in Table 1. Based on the results, the excavation was capped with clay material and backfilled with clean soil to grade.

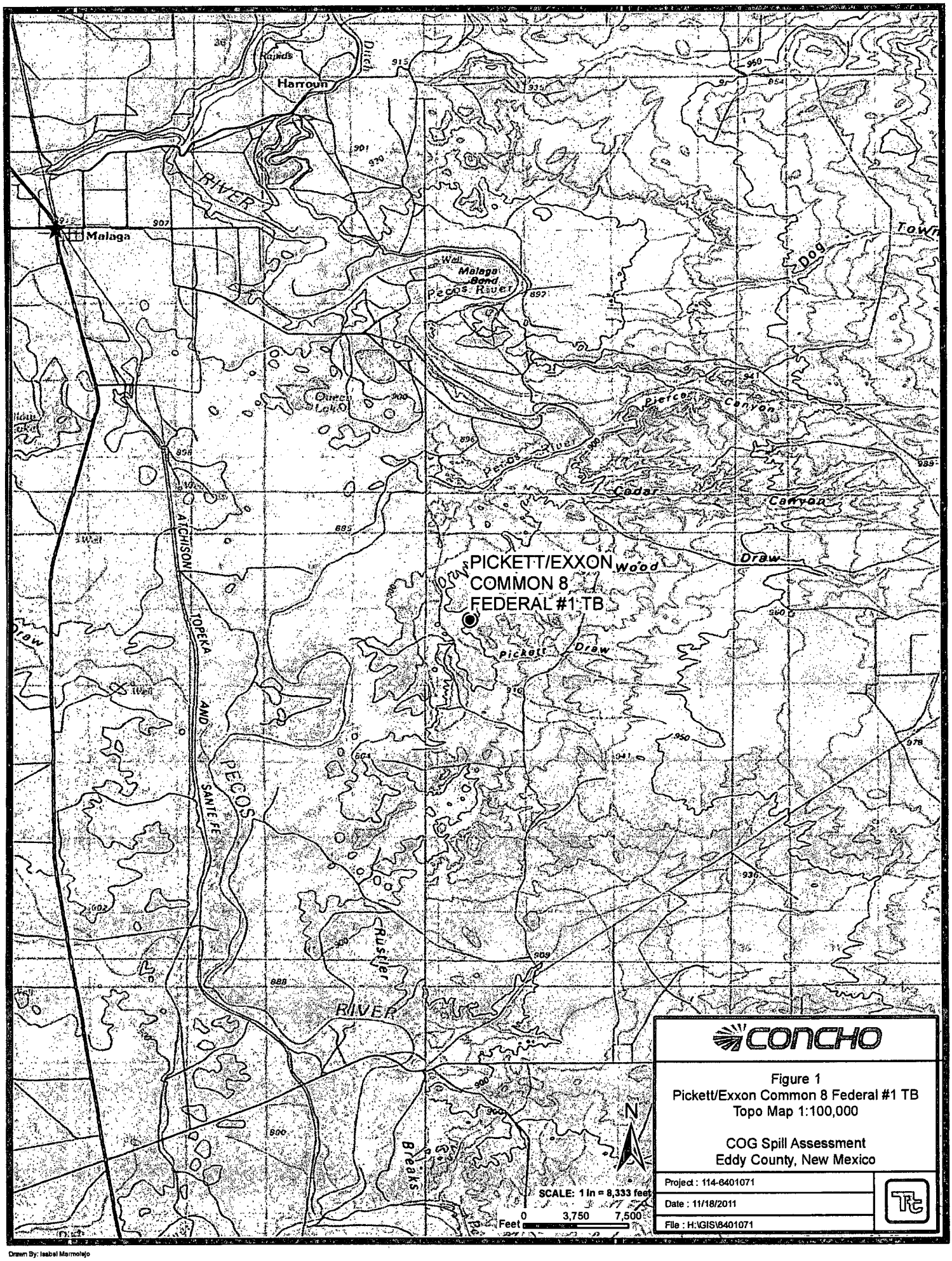
Based on the remedial activities performed, COG request closure of the site. A copy of the C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez
Project Manager

cc: Pat Ellis – COG
cc: Terry Gregston – BLM

Figures



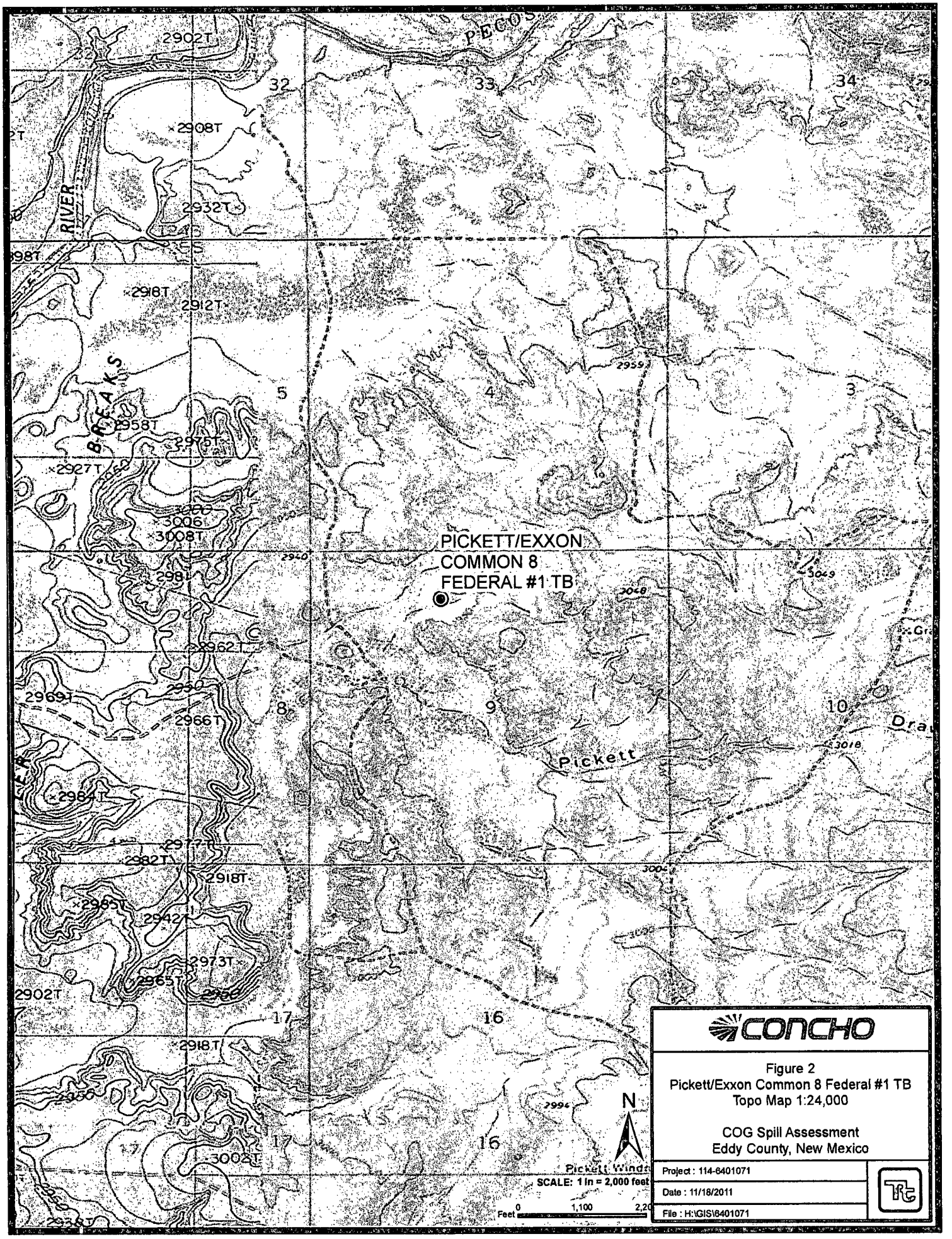
CONCHO

Figure 1
Pickett/Exxon Common 8 Federal #1 TB
Topo Map 1:100,000

COG Spill Assessment
Eddy County, New Mexico

Project : 114-6401071	
Date : 11/18/2011	
File : H:\GIS\6401071	

Drawn By: Isabel Marmolejo



CONCHO

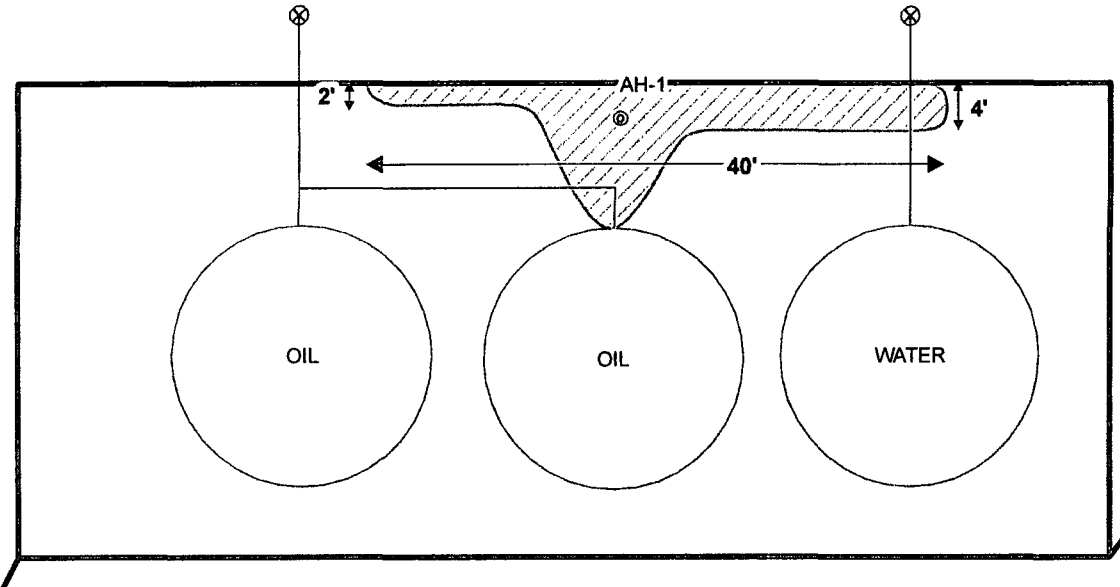
Figure 2
Pickett/Exxon Common 8 Federal #1 TB
Topo Map 1:24,000

COG Spill Assessment
Eddy County, New Mexico

Project : 114-6401071	
Date : 11/18/2011	
File : H:\GIS\6401071	

Drawn By: Isabel Marmolejo

PAD



PASTURE

EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- SPILL AREA

N

SCALE: 1 IN = 16 FEET

Feet 0 8 16

CONCHO

Figure 3

Pickett/Exxon Common 8 Federal #1 TB

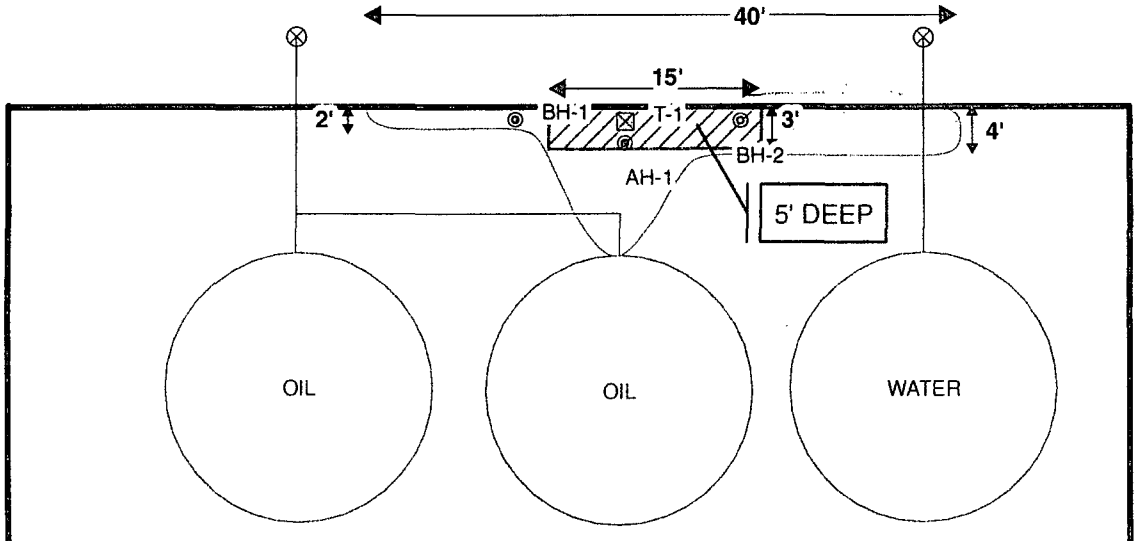
Spill Assessment Map

Eddy County, New Mexico

Project : 114-6401071	
Date : 11/21/2011	
File : H:\GIS\6401071	

Drawn By: Isabel Marmolejo

PAD



PASTURE

EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- BORE HOLE SAMPLE LOCATIONS
- TRENCH LOCATION
- EXCAVATED AREA

N

SCALE: 1 IN = 17 FEET

Feet 0 5 10

CONCHO

Figure 4

Pickett/Exxon Common 8 Federal #1 TB

Excavation Area & Depth Map

Eddy County, New Mexico

Project : 114-6401071

Date : 1/8/2013

File : H:\GIS\6401071

Tables

Table 1
COG Operating LLC
Pickett-Exxon Common 8 Federal #1 Tank Battery
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	11/2/2011	0-1	4"		X	191	995	1,186	<0.100	<0.100	<0.100	0.233	0.233	339
	"	1-1.5			X	272	2,310	2,582	-	-	-	-	-	<200
	"	2-2.5			X	968	2,630	3,598	-	-	-	-	-	<200
	"	3-3.5			X	3,100	2,410	5,510	-	-	-	-	-	-
	"	4-4.5			X	3,100	1,810	4,910	-	-	-	-	-	-
	"	5-5.5			X	2,410	1,950	4,360	-	-	-	-	-	-
Trench-1	2/22/2012	3	-		X	2,300	6,930	9,230	-	-	-	-	-	-
	"	5	-		X	1,340	1,450	2,790	0.629	1.25	1.86	49.5	53.2	-
	"	6	-	X		577	876	1,453	<0.100	0.373	0.612	2.08	3.07	-
	"	7	-	X		726	1,060	1,786	-	-	-	-	-	-
	"	8	-	X		943	2,540	3,483	-	-	-	-	-	-
	"	9	-	X		791	2,720	3,511	-	-	-	-	-	-
BH-1 west of trench	4/17/2012	0-1	-	X		158	464	622	<0.0200	<0.0200	<0.0200	0.293	0.293	-
	"	4-5	-	X		45.8	221	267	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
	"	9-10	-	X		6.02	<50.0	6.02	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
BH-2 east of trench	4/17/2012	0-1	-		X	95.1	1,680	1,775	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
	"	2-3	-		X	1,220	1,360	2,580	-	-	-	-	-	-
	"	4-5	-		X	81.1	209	290	<0.0200	<0.0200	<0.0200	0.316	0.316	-
	"	9-10	-	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
CS-1 Bottom Hole	5/22/2012	5	-	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
CS-1 North Wall	"	-	-	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
CS-1 South Wall	"	-	-	X		11.7	1,290	1,302	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
CS-1 East Wall	"	-	-	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
CS-1 West Wall	"	-	-	X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-

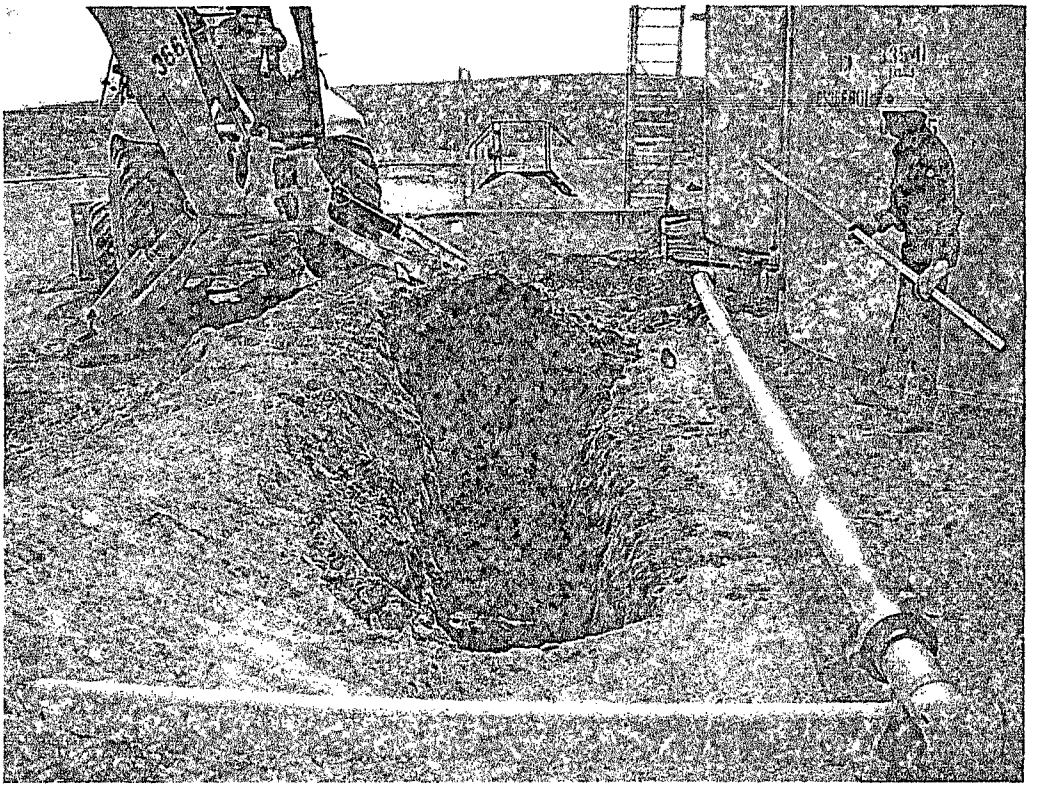
(--) Not Analyzed

Excavation Depths

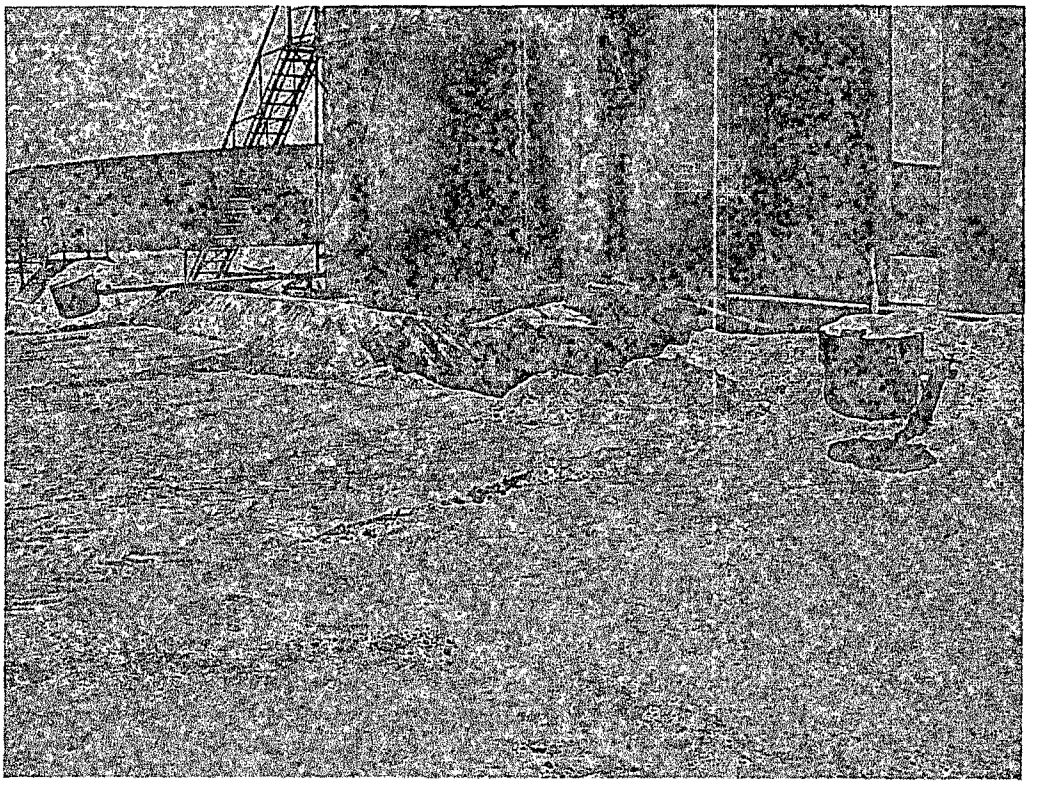
Photos

COG Operating LLC
Pickett/Exxon Common 8
Federal #1 TB
Eddy County, New Mexico

TETRA TECH



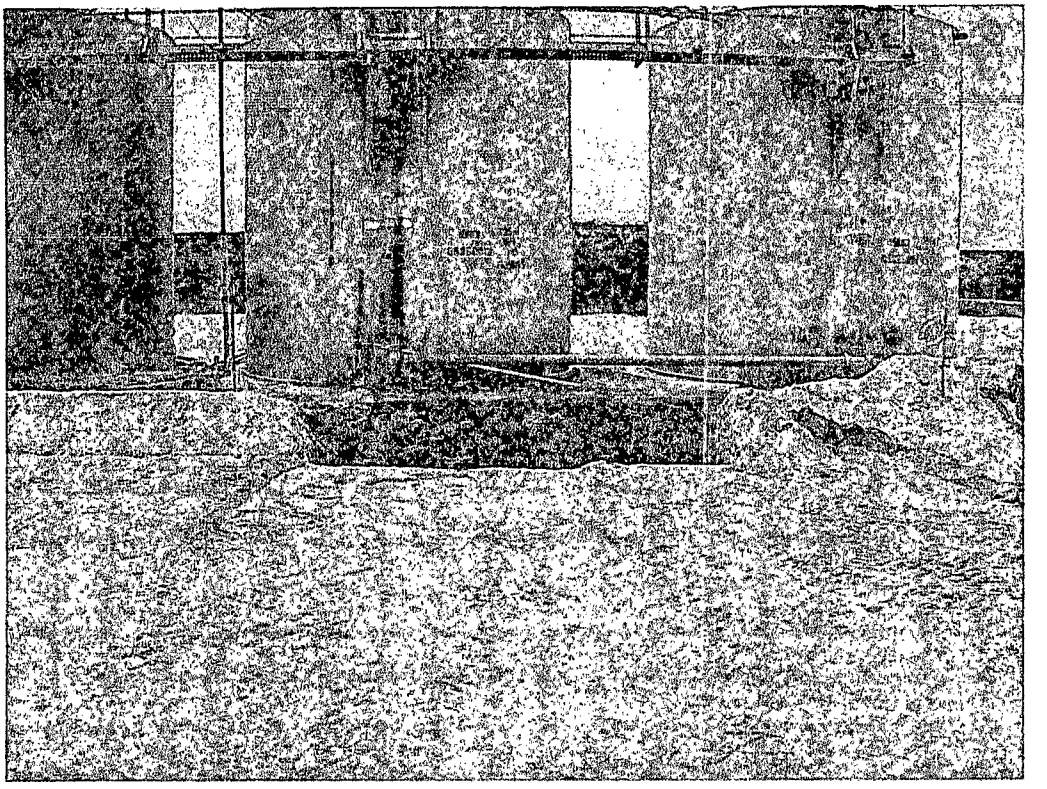
View of excavation



View of excavation

COG Operating LLC
Pickett/Exxon Common 8
Federal #1 TB
Eddy County, New Mexico

TETRA TECH

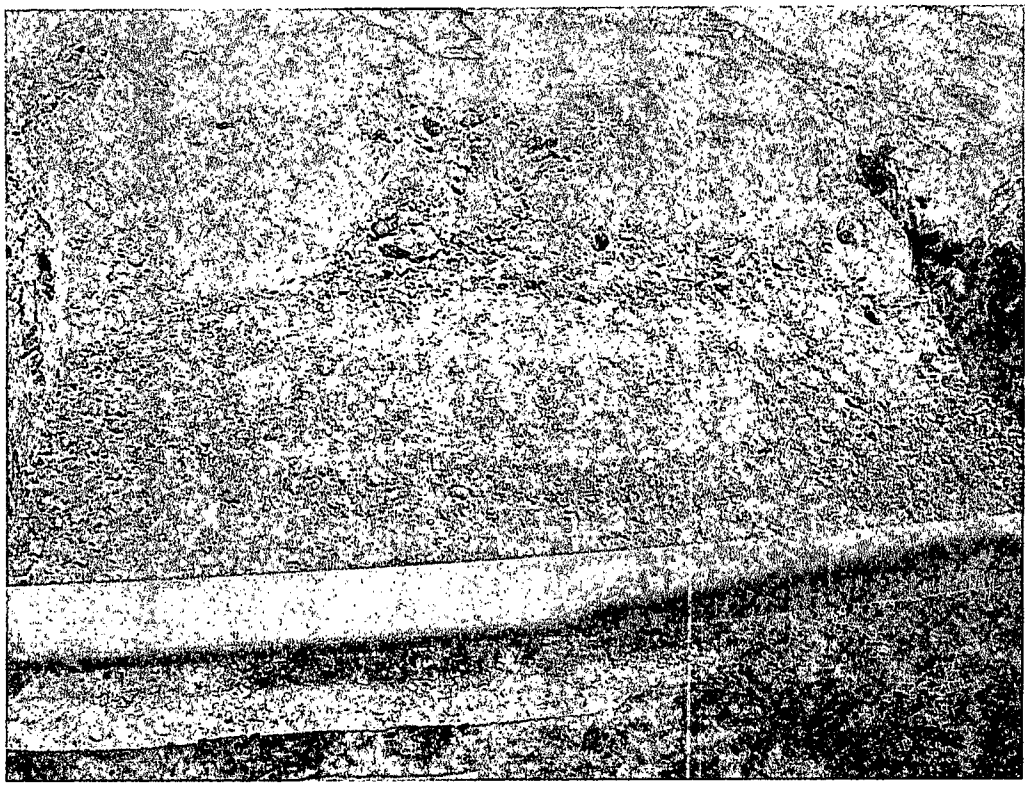


View of excavation

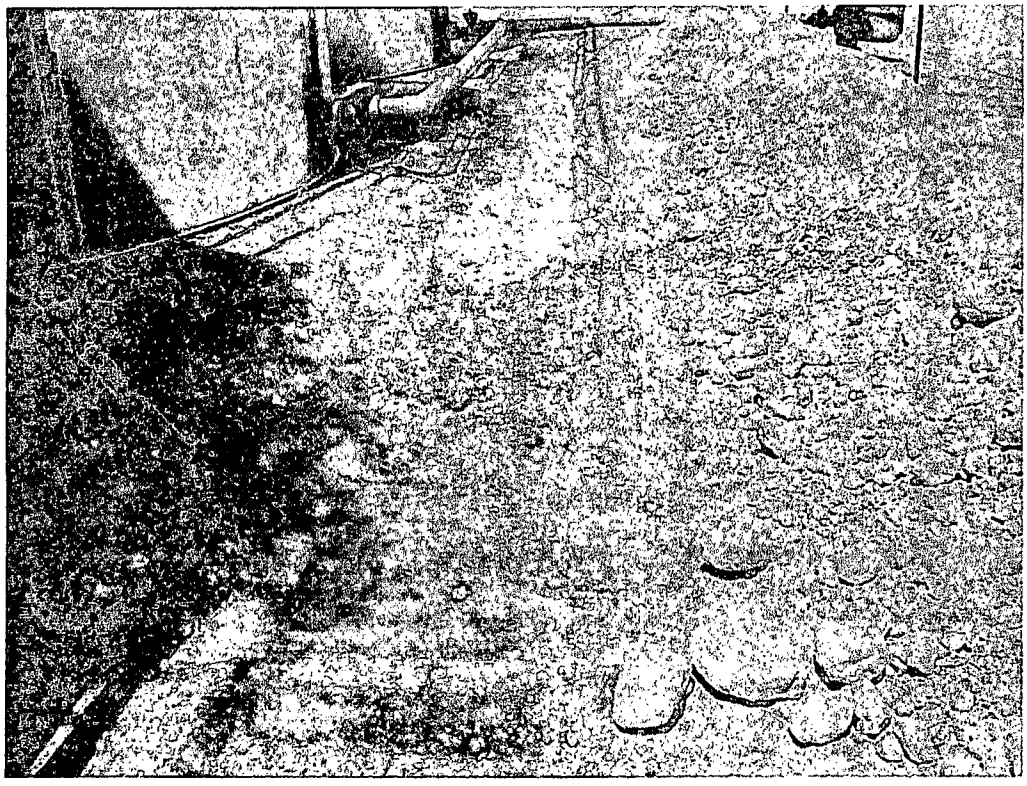
View of excavation clay capping

COG Operating LLC
Pickett/Exxon Common 8
Federal #1 TB
Eddy County, New Mexico

TETRA TECH



View of clay cap



View of backfilled excavation

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

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NMOCD ARTESIA

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	**COG Operating LLC**	Contact	**Pat Ellis**
Address	**550 W. Texas, Suite 100 Midland, Texas 79701**	Telephone No.	**(432) 230-0077**
Facility Name	**Pickett/ Exxon Comm 8 Federal #1 TB**	Facility Type	**Tank battery**

Surface Owner: **Federal**	Mineral Owner	Lease No. (API#) 30-015-25894

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	8	25S	29E					Eddy

Latitude N 32 08.983° **Longitude** W 103 59.512°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 10 bbls	Volume Recovered 8 bbls
Source of Release: Tank	Date and Hour of Occurrence 09/27/2011	Date and Hour of Discovery 09/27/2011 1:50 p.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Broken valve and nipple on load line on top of the tanks. The faulty connections have been replaced with new ones.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected and collected samples to define the spills extent. Soils that exceeded RRAL were removed and hauled to proper disposal. The excavated area was capped with clay and backfilled to grade with clean soil. Tetra Tech prepared a closure report and submitted it to NMOCD for review.

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: Ike Tavarez (agent for COG)	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 1-7-13 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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1301 W. Grand Avenue, Artesia, NM 88210
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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
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Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Pickett/Exxon Common 8 Federal #1 TB	Facility Type	Tank Battery

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-015-25894

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	8	25S	29E					Eddy

Latitude 32 08.983 **Longitude** 103 59.512

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 10bbls	Volume Recovered 8bbls
Source of Release Tank	Date and Hour of Occurrence 09/27/2011	Date and Hour of Discovery 09/27/2011 1:00 p.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Broken valve and nipple on load line on top of tanks. The faulty connections have been replaced with new ones.

Describe Area Affected and Cleanup Action Taken.*

Initially 10bbls of produced water were released from the broken connections on top of the tank and we were able to recover 8bbls with a vacuum truck. All released fluid was contained inside the facility berm walls. The spill area inside has been excavated out and the contaminated material has been hauled to disposal. Tetra Tech will sample the spill site are to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM for approval prior to any significant remediation work.

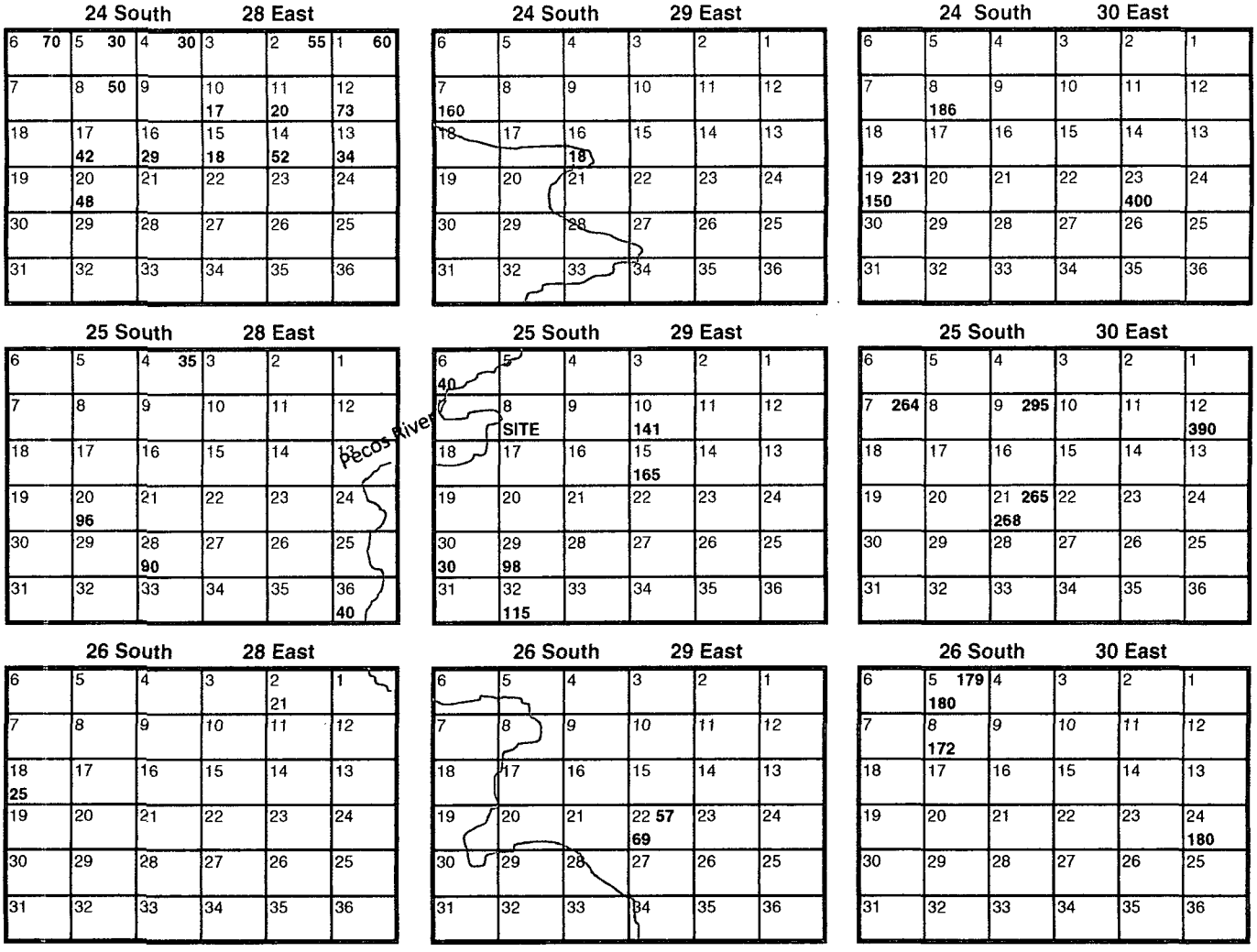
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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: Josh Russo	Approved by District Supervisor:	
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 10/10/2011 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Pickett/Exxon Common 8 Federal #1 Tank Battery
Eddy County, New Mexico



- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Site Location - Pickett/Exxon Common 8 Federal #1 Tank Battery

Appendix C

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: November 15, 2011

Work Order: 11110403

Project Location: Eddy Co., NM
Project Name: COG/Pickett-Exxon Common 8 Federal #1 TB
Project Number: 114-6401071

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
281505	AH-1 0-1' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03
281506	AH-1 1-1.5' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03
281507	AH-1 2-2.5' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03
281508	AH-1 3-3.5' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03
281509	AH-1 4-4.5' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03
281510	AH-1 5-5.5' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
281505 - AH-1 0-1' (4 in. BEB)	<0.100 Qr	<0.100 Qr	<0.100 Qr	**0.233** Qr	**995**	**191**
281506 - AH-1 1-1.5' (4 in. BEB)					**2310**	**272**
281507 - AH-1 2-2.5' (4 in. BEB)					**2630**	**968**
281508 - AH-1 3-3.5' (4 in. BEB)					**2410**	**3100**
281509 - AH-1 4-4.5' (4 in. BEB)					**1810**	**3100**
281510 - AH-1 5-5.5' (4 in. BEB)					**1950** Qs	**2410** Qs

Sample: 281505 - AH-1 0-1' (4 in. BEB)

Param	Flag	Result	Units	RL
Chloride		**339**	mg/Kg	4

Sample: 281506 - AH-1 1-1.5' (4 in. BEB)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 281507 - AH-1 2-2.5' (4 in. BEB)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

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 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: November 15, 2011

Work Order: 11110403

Project Location: Eddy Co., NM
Project Name: COG/Pickett-Exxon Common 8 Federal #1 TB
Project Number: 114-6401071

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
281505	AH-1 0-1' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03
281506	AH-1 1-1.5' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03
281507	AH-1 2-2.5' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03
281508	AH-1 3-3.5' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03
281509	AH-1 4-4.5' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03
281510	AH-1 5-5.5' (4 in. BEB)	soil	2011-11-02	00:00	2011-11-03

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 34 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 COG/Pickett-Exxon Common 8 Federal #1 TB were received by TraceAnalysis, Inc. on 2011-11-03 and assigned to work order 11110403. Samples for work order 11110403 were received intact at a temperature of 4.3 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	73143	2011-11-04 at 12:45	86134	2011-11-05 at 02:47
Chloride (Titration)	SM 4500-Cl B	73222	2011-11-07 at 09:37	86236	2011-11-09 at 10:59
TPH DRO - NEW	S 8015 D	73148	2011-11-04 at 13:42	86138	2011-11-04 at 13:42
TPH DRO - NEW	S 8015 D	73224	2011-11-08 at 09:48	86234	2011-11-08 at 09:48
TPH DRO - NEW	S 8015 D	73262	2011-11-09 at 10:39	86283	2011-11-09 at 10:39
TPH DRO - NEW	S 8015 D	73341	2011-11-11 at 11:02	86366	2011-11-11 at 11:02
TPH DRO - NEW	S 8015 D	73404	2011-11-14 at 14:09	86448	2011-11-14 at 14:09
TPH GRO	S 8015 D	73143	2011-11-04 at 12:45	86135	2011-11-05 at 03:14
TPH GRO	S 8015 D	73217	2011-11-08 at 09:45	86282	2011-11-09 at 14:16
TPH GRO	S 8015 D	73286	2011-11-10 at 13:55	86316	2011-11-10 at 16:05
TPH GRO	S 8015 D	73337	2011-11-11 at 11:35	86361	2011-11-11 at 12:43

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 11110403 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: 281505 - AH-1 0-1' (4 in. BEB)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	86134	Date Analyzed:	2011-11-05	Analyzed By:	AG
Prep Batch:	73143	Sample Preparation:	2011-11-04	Prepared By:	AG

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr,U	Qr,U	1	<0.100	mg/Kg	5	0.0200
Toluene	Qr,U	Qr,U	1	<0.100	mg/Kg	5	0.0200
Ethylbenzene	Qr,U	Qr,U	1	<0.100	mg/Kg	5	0.0200
Xylene	Qr	Qr	1	**0.233**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.84	mg/Kg	5	5.00	97	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			5.11	mg/Kg	5	5.00	102	70.6 - 179

Sample: 281505 - AH-1 0-1' (4 in. BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	86236	Date Analyzed:	2011-11-09	Analyzed By:	AR
Prep Batch:	73222	Sample Preparation:	2011-11-07	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**339**	mg/Kg	50	4.00

Sample: 281505 - AH-1 0-1' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	86138	Date Analyzed:	2011-11-04	Analyzed By:	kg
Prep Batch:	73148	Sample Preparation:	2011-11-04	Prepared By:	kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**995**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		200	mg/Kg	1	100	200	67.5 - 147.1

Sample: 281505 - AH-1 0-1' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	86135	Date Analyzed:	2011-11-05	Analyzed By:	AG
Prep Batch:	73143	Sample Preparation:	2011-11-04	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**191**	mg/Kg	5	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.85	mg/Kg	5	5.00	97	30 - 134.6
4-Bromofluorobenzene (4-BFB)			4.81	mg/Kg	5	5.00	96	22.4 - 149

Sample: 281506 - AH-1 1-1.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	86236	Date Analyzed:	2011-11-09	Analyzed By:	AR
Prep Batch:	73222	Sample Preparation:	2011-11-07	Prepared By:	AR

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U	U		<200	mg/Kg	50	4.00

Sample: 281506 - AH-1 1-1.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	86234	Date Analyzed:	2011-11-08	Analyzed By:	kg
Prep Batch:	73224	Sample Preparation:	2011-11-08	Prepared By:	kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**2310**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		214	mg/Kg	1	100	214	67.5 - 147.1

Sample: 281506 - AH-1 1-1.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	86282	Date Analyzed:	2011-11-09	Analyzed By:	AG
Prep Batch:	73217	Sample Preparation:	2011-11-09	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**272**	mg/Kg	20	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			19.2	mg/Kg	20	20.0	96	30 - 134.6
4-Bromofluorobenzene (4-BFB)			18.2	mg/Kg	20	20.0	91	22.4 - 149

Sample: 281507 - AH-1 2-2.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	86236	Date Analyzed:	2011-11-09	Analyzed By:	AR
Prep Batch:	73222	Sample Preparation:	2011-11-07	Prepared By:	AR

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U	U		<200	mg/Kg	50	4.00

Sample: 281507 - AH-1 2-2.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	86283	Date Analyzed:	2011-11-09	Analyzed By:	kg
Prep Batch:	73262	Sample Preparation:	2011-11-09	Prepared By:	kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**2630**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		202	mg/Kg	1	100	202	67.5 - 147.1

Sample: 281507 - AH-1 2-2.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	86282	Date Analyzed:	2011-11-09	Analyzed By:	AG
Prep Batch:	73217	Sample Preparation:	2011-11-09	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**968**	mg/Kg	20	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			19.4	mg/Kg	20	20.0	97	30 - 134.6
4-Bromofluorobenzene (4-BFB)			22.4	mg/Kg	20	20.0	112	22.4 - 149

Sample: 281508 - AH-1 3-3.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	86366	Date Analyzed:	2011-11-11	Analyzed By:	kg
Prep Batch:	73341	Sample Preparation:	2011-11-11	Prepared By:	kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**2410**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		255	mg/Kg	1	100	255	67.5 - 147.1

Sample: 281508 - AH-1 3-3.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	86316	Date Analyzed:	2011-11-10	Analyzed By:	AG
Prep Batch:	73286	Sample Preparation:	2011-11-10	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**3100**	mg/Kg	20	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			19.7	mg/Kg	20	20.0	98	30 - 134.6
4-Bromofluorobenzene (4-BFB)			28.4	mg/Kg	20	20.0	142	22.4 - 149

Sample: 281509 - AH-1 4-4.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	86366	Date Analyzed:	2011-11-11	Analyzed By:	kg
Prep Batch:	73341	Sample Preparation:	2011-11-11	Prepared By:	kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**1810**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		168	mg/Kg	1	100	168	67.5 - 147.1

Sample: 281509 - AH-1 4-4.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	86316	Date Analyzed:	2011-11-10	Analyzed By:	AG
Prep Batch:	73286	Sample Preparation:	2011-11-10	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**3100**	mg/Kg	20	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			19.8	mg/Kg	20	20.0	99	30 - 134.6
4-Bromofluorobenzene (4-BFB)			29.2	mg/Kg	20	20.0	146	22.4 - 149

Sample: 281510 - AH-1 5-5.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	86448	Date Analyzed:	2011-11-14	Analyzed By:	kg
Prep Batch:	73404	Sample Preparation:	2011-11-14	Prepared By:	kg

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	Qs	1	**1950**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		173	mg/Kg	1	100	173	67.5 - 147.1

Sample: 281510 - AH-1 5-5.5' (4 in. BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	86361	Date Analyzed:	2011-11-11	Analyzed By:	AG
Prep Batch:	73337	Sample Preparation:	2011-11-11	Prepared By:	AG

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	Qs	1	**2410**	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			48.2	mg/Kg	50	50.0	96	30 - 134.6
4-Bromofluorobenzene (4-BFB)			56.1	mg/Kg	50	50.0	112	22.4 - 149

Method Blanks

Method Blank (1) QC Batch: 86134

QC Batch: 86134 | Date Analyzed: 2011-11-05 | Analyzed By: AG
Prep Batch: 73143 | QC Preparation: 2011-11-04 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.0118	mg/Kg	0.02
Toluene		1	<0.00600	mg/Kg	0.02
Ethylbenzene		1	<0.00850	mg/Kg	0.02
Xylene		1	<0.00613	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	65.9 - 111.8
4-Bromofluorobenzene (4-BFB)			1.67	mg/Kg	1	2.00	84	48.4 - 123.1

Method Blank (1) QC Batch: 86135

QC Batch: 86135 | Date Analyzed: 2011-11-05 | Analyzed By: AG
Prep Batch: 73143 | QC Preparation: 2011-11-04 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	0.915	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.90	mg/Kg	1	2.00	95	67.6 - 150
4-Bromofluorobenzene (4-BFB)			1.60	mg/Kg	1	2.00	80	52.4 - 130

Method Blank (1) QC Batch: 86138

QC Batch: 86138 | Date Analyzed: 2011-11-04 | Analyzed By: kg
Prep Batch: 73148 | QC Preparation: 2011-11-04 | Prepared By: kg

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	52.7 - 133.8

Method Blank (1) QC Batch: 86234

QC Batch:	86234	Date Analyzed:	2011-11-08	Analyzed By:	kg
Prep Batch:	73224	QC Preparation:	2011-11-08	Prepared By:	kg

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			99.3	mg/Kg	1	100	99	52.7 - 133.8

Method Blank (1) QC Batch: 86236

QC Batch:	86236	Date Analyzed:	2011-11-09	Analyzed By:	AR
Prep Batch:	73222	QC Preparation:	2011-11-07	Prepared By:	AR

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

Method Blank (1) QC Batch: 86282

QC Batch:	86282	Date Analyzed:	2011-11-09	Analyzed By:	AG
Prep Batch:	73217	QC Preparation:	2011-11-08	Prepared By:	AG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	1.00	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	67.6 - 150
4-Bromofluorobenzene (4-BFB)			1.64	mg/Kg	1	2.00	82	52.4 - 130

Method Blank (1) QC Batch: 86283

QC Batch: 86283 | Date Analyzed: 2011-11-09 | Analyzed By: kg
Prep Batch: 73262 | QC Preparation: 2011-11-09 | Prepared By: kg

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			90.4	mg/Kg	1	100	90	52.7 - 133.8

Method Blank (1) QC Batch: 86316

QC Batch: 86316 | Date Analyzed: 2011-11-10 | Analyzed By: AG
Prep Batch: 73286 | QC Preparation: 2011-11-10 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	1.26	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	67.6 - 150
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	52.4 - 130

Method Blank (1) QC Batch: 86361

QC Batch: 86361 | Date Analyzed: 2011-11-11 | Analyzed By: AG
Prep Batch: 73337 | QC Preparation: 2011-11-11 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	1.11	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	67.6 - 150
4-Bromofluorobenzene (4-BFB)			1.72	mg/Kg	1	2.00	86	52.4 - 130

Method Blank (1) QC Batch: 86366

QC Batch: 86366 | Date Analyzed: 2011-11-11 | Analyzed By: kg
Prep Batch: 73341 | QC Preparation: 2011-11-11 | Prepared By: kg

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			91.1	mg/Kg	1	100	91	52.7 - 133.8

Method Blank (1) QC Batch: 86448

QC Batch: 86448 | Date Analyzed: 2011-11-14 | Analyzed By: kg
Prep Batch: 73404 | QC Preparation: 2011-11-14 | Prepared By: kg

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			93.2	mg/Kg	1	100	93	52.7 - 133.8

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 86134 | Date Analyzed: 2011-11-05 | Analyzed By: AG
Prep Batch: 73143 | QC Preparation: 2011-11-04 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.03	mg/Kg	1	2.00	<0.0118	102	77.4 - 121.7
Toluene		1	1.98	mg/Kg	1	2.00	<0.00600	99	88.6 - 121.6
Ethylbenzene		1	1.93	mg/Kg	1	2.00	<0.00850	96	74.3 - 117.9
Xylene		1	5.83	mg/Kg	1	6.00	<0.00613	97	73.4 - 118.8

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.01	mg/Kg	1	2.00	<0.0118	100	77.4 - 121.7	1	20
Toluene		1	1.97	mg/Kg	1	2.00	<0.00600	98	88.6 - 121.6	0	20
Ethylbenzene		1	1.89	mg/Kg	1	2.00	<0.00850	94	74.3 - 117.9	2	20
Xylene		1	5.74	mg/Kg	1	6.00	<0.00613	96	73.4 - 118.8	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.92	1.90	mg/Kg	1	2.00	96	95	65.5 - 116.7
4-Bromofluorobenzene (4-BFB)	1.93	1.94	mg/Kg	1	2.00	96	97	56.2 - 132.1

Laboratory Control Spike (LCS-1)

QC Batch: 86135 | Date Analyzed: 2011-11-05 | Analyzed By: AG
Prep Batch: 73143 | QC Preparation: 2011-11-04 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.8	mg/Kg	1	20.0	<0.753	89	60.9 - 105.4

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

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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		1	18.2	mg/Kg	1	20.0	<0.753	91	60.9 - 105.4	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.97	1.96	mg/Kg	1	2.00	98	98	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.78	1.79	mg/Kg	1	2.00	89	90	56.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 86138 | Date Analyzed: 2011-11-04 | Analyzed By: kg
Prep Batch: 73148 | QC Preparation: 2011-11-04 | Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	282	mg/Kg	1	250	<14.5	113	64.5 - 146.9

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
DRO		1	290	mg/Kg	1	250	<14.5	116	64.5 - 146.9	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	131	135	mg/Kg	1	100	131	135	65.3 - 135.8

Laboratory Control Spike (LCS-1)

QC Batch: 86234 | Date Analyzed: 2011-11-08 | Analyzed By: kg
Prep Batch: 73224 | QC Preparation: 2011-11-08 | Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	248	mg/Kg	1	250	<14.5	99	64.5 - 146.9

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
DRO		1	259	mg/Kg	1	250	<14.5	104	64.5 - 146.9	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	112	115	mg/Kg	1	100	112	115	65.3 - 135.8

Laboratory Control Spike (LCS-1)

QC Batch: 86236 | Date Analyzed: 2011-11-09 | Analyzed By: AR
Prep Batch: 73222 | QC Preparation: 2011-11-07 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			97.8	mg/Kg	1	100	<3.85	98	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			106	mg/Kg	1	100	<3.85	106	85 - 115	8	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 86282 | Date Analyzed: 2011-11-09 | Analyzed By: AG
Prep Batch: 73217 | QC Preparation: 2011-11-08 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.4	mg/Kg	1	20.0	<0.753	97	60.9 - 105.4

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	18.8	mg/Kg	1	20.0	<0.753	94	60.9 - 105.4	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)	1.96	1.96	mg/Kg	1	2.00	98	98	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.78	1.81	mg/Kg	1	2.00	89	90	56.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 86283 | Date Analyzed: 2011-11-09 | Analyzed By: kg
Prep Batch: 73262 | QC Preparation: 2011-11-09 | Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	243	mg/Kg	1	250	<14.5	97	64.5 - 146.9

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
DRO		1	247	mg/Kg	1	250	<14.5	99	64.5 - 146.9	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	93.0	92.9	mg/Kg	1	100	93	93	65.3 - 135.8

Laboratory Control Spike (LCS-1)

QC Batch: 86316 | Date Analyzed: 2011-11-10 | Analyzed By: AG
Prep Batch: 73286 | QC Preparation: 2011-11-10 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.3	mg/Kg	1	20.0	<0.753	96	60.9 - 105.4

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.6	mg/Kg	1	20.0	<0.753	98	60.9 - 105.4	2	20

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

continued ...

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	1.98	mg/Kg	1	2.00	96	99	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.91	1.92	mg/Kg	1	2.00	96	96	56.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 86361 | Date Analyzed: 2011-11-11 | Analyzed By: AG
Prep Batch: 73337 | QC Preparation: 2011-11-11 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.7	mg/Kg	1	20.0	<0.753	94	60.9 - 105.4

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.5	mg/Kg	1	20.0	<0.753	98	60.9 - 105.4	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)	1.96	1.94	mg/Kg	1	2.00	98	97	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.88	1.87	mg/Kg	1	2.00	94	94	56.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 86366 | Date Analyzed: 2011-11-11 | Analyzed By: kg
Prep Batch: 73341 | QC Preparation: 2011-11-11 | Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	255	mg/Kg	1	250	<14.5	102	64.5 - 146.9

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	265	mg/Kg	1	250	<14.5	106	64.5 - 146.9	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	96.4	98.1	mg/Kg	1	100	96	98	65.3 - 135.8

Laboratory Control Spike (LCS-1)

QC Batch: 86448 | Date Analyzed: 2011-11-14 | Analyzed By: kg
Prep Batch: 73404 | QC Preparation: 2011-11-14 | Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	259	mg/Kg	1	250	<14.5	104	64.5 - 146.9

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
DRO		1	231	mg/Kg	1	250	<14.5	92	64.5 - 146.9	11	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	97.8	88.5	mg/Kg	1	100	98	88	65.3 - 135.8

Matrix Spike (MS-1) Spiked Sample: 281552

QC Batch: 86134 | Date Analyzed: 2011-11-05 | Analyzed By: AG
Prep Batch: 73143 | QC Preparation: 2011-11-04 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.24	mg/Kg	1	2.00	<0.0118	112	69.4 - 123.6
Toluene		1	2.23	mg/Kg	1	2.00	<0.00600	112	75.4 - 134.3

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Ethylbenzene		1	2.32	mg/Kg	1	2.00	<0.00850	116	58.8 - 133.7
Xylene		1	6.98	mg/Kg	1	6.00	<0.00613	116	57 - 134.2

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 1	1.72	mg/Kg	1	2.00	<0.0118	86	69.4 - 123.6	26	20
Toluene	Qr	Qr 1	1.70	mg/Kg	1	2.00	<0.00600	85	75.4 - 134.3	27	20
Ethylbenzene	Qr	Qr 1	1.76	mg/Kg	1	2.00	<0.00850	88	58.8 - 133.7	27	20
Xylene	Qr	Qr 1	5.30	mg/Kg	1	6.00	<0.00613	88	57 - 134.2	27	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.94	1.94	mg/Kg	1	2	97	97	79.4 - 141.1
4-Bromofluorobenzene (4-BFB)	2.07	2.04	mg/Kg	1	2	104	102	71 - 167

Matrix Spike (MS-1) Spiked Sample: 281555

QC Batch: 86135 | Date Analyzed: 2011-11-05 | Analyzed By: AG
Prep Batch: 73143 | QC Preparation: 2011-11-04 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.9	mg/Kg	1	20.0	3.68	81	61.8 - 114

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	22.0	mg/Kg	1	20.0	3.68	92	61.8 - 114	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
Trifluorotoluene (TFT)	1.95	1.95	mg/Kg	1	2	98	98	29.4 - 161.7
4-Bromofluorobenzene (4-BFB)	2.01	2.02	mg/Kg	1	2	100	101	37.3 - 162

Matrix Spike (MS-1) Spiked Sample: 281552

QC Batch: 86138 | Date Analyzed: 2011-11-04 | Analyzed By: kg
Prep Batch: 73148 | QC Preparation: 2011-11-04 | Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	293	mg/Kg	1	250	23.1	108	38.8 - 153.3

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	302	mg/Kg	1	250	23.1	112	38.8 - 153.3	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	125	122	mg/Kg	1	100	125	122	54.6 - 149.8

Matrix Spike (MS-1) Spiked Sample: 281579

QC Batch: 86234 | Date Analyzed: 2011-11-08 | Analyzed By: kg
Prep Batch: 73224 | QC Preparation: 2011-11-08 | Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	222	mg/Kg	1	250	<14.5	89	38.8 - 153.3

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	239	mg/Kg	1	250	<14.5	96	38.8 - 153.3	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	97.3	105	mg/Kg	1	100	97	105	54.6 - 149.8

Matrix Spike (MS-1) Spiked Sample: 281549

QC Batch: 86236 | Date Analyzed: 2011-11-09 | Analyzed By: AR
Prep Batch: 73222 | QC Preparation: 2011-11-07 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			9130	mg/Kg	100	10000	<385	88	79.4 - 120.6

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			9780	mg/Kg	100	10000	<385	95	79.4 - 120.6	7	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: 281579

QC Batch: 86282 | Date Analyzed: 2011-11-09 | Analyzed By: AG
Prep Batch: 73217 | QC Preparation: 2011-11-08 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	2.72	74	61.8 - 114

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	21.0	mg/Kg	1	20.0	2.72	91	61.8 - 114	18	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.95	1.94	mg/Kg	1	2	98	97	29.4 - 161.7
4-Bromofluorobenzene (4-BFB)	1.95	1.98	mg/Kg	1	2	98	99	37.3 - 162

Matrix Spike (MS-1) Spiked Sample: 281940

QC Batch: 86283 | Date Analyzed: 2011-11-09 | Analyzed By: kg
Prep Batch: 73262 | QC Preparation: 2011-11-09 | Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	229	mg/Kg	1	250	<14.5	92	38.8 - 153.3

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	235	mg/Kg	1	250	<14.5	94	38.8 - 153.3	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	87.9	88.8	mg/Kg	1	100	88	89	54.6 - 149.8

Matrix Spike (MS-1) Spiked Sample: 282016

QC Batch: 86316 | Date Analyzed: 2011-11-10 | Analyzed By: AG
Prep Batch: 73286 | QC Preparation: 2011-11-10 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	20.2	mg/Kg	1	20.0	4.02	81	61.8 - 114

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	21.9	mg/Kg	1	20.0	4.02	110	61.8 - 114	8	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	1.96	mg/Kg	1	2	96	98	29.4 - 161.7
4-Bromofluorobenzene (4-BFB)	2.06	2.09	mg/Kg	1	2	103	104	37.3 - 162

Matrix Spike (MS-1) Spiked Sample: 282104

QC Batch: 86361 | Date Analyzed: 2011-11-11 | Analyzed By: AG
Prep Batch: 73337 | QC Preparation: 2011-11-11 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	24.8	mg/Kg	1	20.0	3.14	108	61.8 - 114

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
GRO [Qs]	Qs	1	25.9	mg/Kg	1	20.0	3.14	114	61.8 - 114	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
Trifluorotoluene (TFT)	1.94	1.93	mg/Kg	1	2	97	96	29.4 - 161.7
4-Bromofluorobenzene (4-BFB)	2.04	2.03	mg/Kg	1	2	102	102	37.3 - 162

Matrix Spike (MS-1) Spiked Sample: 282104

QC Batch: 86366 | Date Analyzed: 2011-11-11 | Analyzed By: kg
Prep Batch: 73341 | QC Preparation: 2011-11-11 | Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	222	mg/Kg	1	250	46.7	70	38.8 - 153.3

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	204	mg/Kg	1	250	46.7	63	38.8 - 153.3	8	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	87.9	75.4	mg/Kg	1	100	88	75	54.6 - 149.8

Matrix Spike (MS-1) Spiked Sample: 282214

QC Batch: 86448 | Date Analyzed: 2011-11-14 | Analyzed By: kg
Prep Batch: 73404 | QC Preparation: 2011-11-14 | Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO [Qs]	Qs	1	9750	mg/Kg	5	250	9750	0	38.8 - 153.3

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	8780	mg/Kg	5	250	9750	0	38.8 - 153.3	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	Qsr	Qsr	598	533	mg/Kg	5	100	598	533	54.6 - 149.8

Calibration Standards

Standard (CCV-1)

QC Batch: 86134 | Date Analyzed: 2011-11-05 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.101	101	80 - 120	2011-11-05
Toluene		1	mg/Kg	0.100	0.0981	98	80 - 120	2011-11-05
Ethylbenzene		1	mg/Kg	0.100	0.0959	96	80 - 120	2011-11-05
Xylene		1	mg/Kg	0.300	0.289	96	80 - 120	2011-11-05

Standard (CCV-2)

QC Batch: 86134 | Date Analyzed: 2011-11-05 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0921	92	80 - 120	2011-11-05
Toluene		1	mg/Kg	0.100	0.0888	89	80 - 120	2011-11-05
Ethylbenzene		1	mg/Kg	0.100	0.0859	86	80 - 120	2011-11-05
Xylene		1	mg/Kg	0.300	0.260	87	80 - 120	2011-11-05

Standard (CCV-1)

QC Batch: 86135 | Date Analyzed: 2011-11-05 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.07	107	80 - 120	2011-11-05

Standard (CCV-2)

QC Batch: 86135 | Date Analyzed: 2011-11-05 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.15	115	80 - 120	2011-11-05

Standard (CCV-1)

QC Batch: 86138 Date Analyzed: 2011-11-04 Analyzed By: kg

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	2011-11-04

Standard (CCV-2)

QC Batch: 86138 Date Analyzed: 2011-11-04 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	237	95	80 - 120	2011-11-04

Standard (CCV-3)

QC Batch: 86234 Date Analyzed: 2011-11-08 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	242	97	80 - 120	2011-11-08

Standard (CCV-4)

QC Batch: 86234 Date Analyzed: 2011-11-08 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	262	105	80 - 120	2011-11-08

Standard (ICV-1)

QC Batch: 86236 Date Analyzed: 2011-11-09 Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	96.6	97	85 - 115	2011-11-09

Standard (CCV-1)

QC Batch: 86236 Date Analyzed: 2011-11-09 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	103	103	85 - 115	2011-11-09

Standard (CCV-1)

QC Batch: 86282 Date Analyzed: 2011-11-09 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.15	115	80 - 120	2011-11-09

Standard (CCV-2)

QC Batch: 86282 Date Analyzed: 2011-11-09 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.10	110	80 - 120	2011-11-09

Standard (CCV-3)

QC Batch: 86282 Date Analyzed: 2011-11-09 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.19	119	80 - 120	2011-11-09

Standard (CCV-1)

QC Batch: 86283 Date Analyzed: 2011-11-09 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	255	102	80 - 120	2011-11-09

Standard (CCV-2)

QC Batch: 86283 Date Analyzed: 2011-11-09 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	250	100	80 - 120	2011-11-09

Standard (CCV-1)

QC Batch: 86316 Date Analyzed: 2011-11-10 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.14	114	80 - 120	2011-11-10

Standard (CCV-2)

QC Batch: 86316 Date Analyzed: 2011-11-10 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.14	114	80 - 120	2011-11-10

Standard (CCV-1)

QC Batch: 86361 Date Analyzed: 2011-11-11 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.16	116	80 - 120	2011-11-11

Standard (CCV-2)

QC Batch: 86361 Date Analyzed: 2011-11-11 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.16	116	80 - 120	2011-11-11

Standard (CCV-1)

QC Batch: 86366 Date Analyzed: 2011-11-11 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	252	101	80 - 120	2011-11-11

Standard (CCV-2)

QC Batch: 86366 Date Analyzed: 2011-11-11 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	257	103	80 - 120	2011-11-11

Standard (CCV-1)

QC Batch: 86448 Date Analyzed: 2011-11-14 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	258	103	80 - 120	2011-11-14

Standard (CCV-2)

QC Batch: 86448 Date Analyzed: 2011-11-14 Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	256	102	80 - 120	2011-11-14

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	T104704392-10-TX	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.
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.

WO # 1111040 3

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG

SITE MANAGER: IKE TAVAREZ

PROJECT NO.: 11 4 6040 - 1071

PROJECT NAME: PICKETT / EXXON COMMON 8 FEDERAL #1 TB
EDDY COUNTY, N.M.

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2011	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD.	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
281505	11-2		S		X	AH-1 0-1' (4' BEB)					X		X	X												X				
506						1-1.5 (4' BEB)					X															X				
507						2-2.5 (4' BEB)					X															X				
508						3-3.5 (4' BEB)					X					Add														
509						4-4.5 (4' BEB)					X					Add														
510						5-5.5 (4' BEB)					X					Add														

RELINQUISHED BY: (Signature) Date: 11-3-11 Time: 16:50

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) KIM I CURTIS Date: 11-2-11 Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: IKE TAVAREZ

Results by:

RECEIVING LABORATORY: TRACE

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: 11-3-11 TIME: 16:50

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4.3°C Intact

REMARKS: RUN deeper samples if TPH exceeds 1,000 mg/kg

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: June 12, 2012

Work Order: 12061109

Project Location: Eddy Co., NM
Project Name: COG/Pickett-Exxon Common 8 Federal #1 TB
Project Number: 114-6401071

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
300652	CS-1 Bottom Hole 5' (AH-1)	soil	2012-05-22	00:00	2012-06-11
300653	CS-1 North Wall (AH-1)	soil	2012-05-22	00:00	2012-06-11
300654	CS-1 South Wall (AH-1)	soil	2012-05-22	00:00	2012-06-11
300655	CS-1 East Wall (AH-1)	soil	2012-05-22	00:00	2012-06-11
300656	CS-1 West Wall (AH-1)	soil	2012-05-22	00:00	2012-06-11

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
300652 - CS-1 Bottom Hole 5' (AH-1)	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
300653 - CS-1 North Wall (AH-1)	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
300654 - CS-1 South Wall (AH-1)	<0.0200	<0.0200	<0.0200	<0.0200	**1290**	**11.7**
300655 - CS-1 East Wall (AH-1)	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
300656 - CS-1 West Wall (AH-1)	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

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

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: June 12, 2012

Work Order: 12061109

Project Location: Eddy Co., NM
Project Name: COG/Pickett-Exxon Common 8 Federal #1 TB
Project Number: 114-6401071

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
300652	CS-1 Bottom Hole 5' (AH-1)	soil	2012-05-22	00:00	2012-06-11
300653	CS-1 North Wall (AH-1)	soil	2012-05-22	00:00	2012-06-11
300654	CS-1 South Wall (AH-1)	soil	2012-05-22	00:00	2012-06-11
300655	CS-1 East Wall (AH-1)	soil	2012-05-22	00:00	2012-06-11
300656	CS-1 West Wall (AH-1)	soil	2012-05-22	00:00	2012-06-11

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 18 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 COG/Pickett-Exxon Common 8 Federal #1 TB were received by TraceAnalysis, Inc. on 2012-06-11 and assigned to work order 12061109. Samples for work order 12061109 were received intact at a temperature of 6.0 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	78057	2012-06-11 at 12:00	92011	2012-06-11 at 11:24
TPH DRO - NEW	S 8015 D	78050	2012-06-11 at 12:00	92001	2012-06-11 at 12:44
TPH GRO	S 8015 D	78057	2012-06-11 at 12:00	92012	2012-06-11 at 11:50

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 12061109 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.

Samples received out of hold time. Client still wants samples to be analyzed.

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: 300652 - CS-1 Bottom Hole 5' (AH-1)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	92011	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78057	Sample Preparation:	2012-06-11	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.25	mg/Kg	1	2.00	112	70 - 135.4
4-Bromofluorobenzene (4-BFB)			2.55	mg/Kg	1	2.00	128	53.6 - 158.9

Sample: 300652 - CS-1 Bottom Hole 5' (AH-1)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	92001	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78050	Sample Preparation:	2012-06-11	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			95.7	mg/Kg	1	100	96	49.3 - 157.5

Sample: 300652 - CS-1 Bottom Hole 5' (AH-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	92012	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78057	Sample Preparation:	2012-06-11	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	45.1 - 162.2

Sample: 300653 - CS-1 North Wall (AH-1)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	92011	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78057	Sample Preparation:	2012-06-11	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.51	mg/Kg	1	2.00	126	70 - 135.4
4-Bromofluorobenzene (4-BFB)			2.91	mg/Kg	1	2.00	146	53.6 - 158.9

Sample: 300653 - CS-1 North Wall (AH-1)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	92001	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78050	Sample Preparation:	2012-06-11	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			96.3	mg/Kg	1	100	96	49.3 - 157.5

Sample: 300653 - CS-1 North Wall (AH-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	92012	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78057	Sample Preparation:	2012-06-11	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO	U	1		<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.19	mg/Kg	1	2.00	110	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	45.1 - 162.2

Sample: 300654 - CS-1 South Wall (AH-1)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	92011	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78057	Sample Preparation:	2012-06-11	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.06	mg/Kg	1	2.00	103	70 - 135.4
4-Bromofluorobenzene (4-BFB)			2.49	mg/Kg	1	2.00	124	53.6 - 158.9

Sample: 300654 - CS-1 South Wall (AH-1)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	92001	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78050	Sample Preparation:	2012-06-11	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**1290**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	203	mg/Kg	1	100	203	49.3 - 157.5

Sample: 300654 - CS-1 South Wall (AH-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	92012	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78057	Sample Preparation:	2012-06-11	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**11.7**	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.78	mg/Kg	1	2.00	89	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	45.1 - 162.2

Sample: 300655 - CS-1 East Wall (AH-1)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	92011	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78057	Sample Preparation:	2012-06-11	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.62	mg/Kg	1	2.00	131	70 - 135.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.43	mg/Kg	1	2.00	172	53.6 - 158.9

Sample: 300655 - CS-1 East Wall (AH-1)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	92001	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78050	Sample Preparation:	2012-06-11	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			97.7	mg/Kg	1	100	98	49.3 - 157.5

Sample: 300655 - CS-1 East Wall (AH-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	92012	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78057	Sample Preparation:	2012-06-11	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.28	mg/Kg	1	2.00	114	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.47	mg/Kg	1	2.00	124	45.1 - 162.2

Sample: 300656 - CS-1 West Wall (AH-1)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	92011	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78057	Sample Preparation:	2012-06-11	Prepared By:	AG

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

continued ...

sample 300656 continued . . .

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.30	mg/Kg	1	2.00	115	70 - 135.4
4-Bromofluorobenzene (4-BFB)			2.91	mg/Kg	1	2.00	146	53.6 - 158.9

Sample: 300656 - CS-1 West Wall (AH-1)

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	92001	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78050	Sample Preparation:	2012-06-11	Prepared By:	AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			93.9	mg/Kg	1	100	94	49.3 - 157.5

Sample: 300656 - CS-1 West Wall (AH-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	92012	Date Analyzed:	2012-06-11	Analyzed By:	AG
Prep Batch:	78057	Sample Preparation:	2012-06-11	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	45.1 - 162.2

Method Blanks

Method Blank (1) QC Batch: 92001

QC Batch: 92001 | Date Analyzed: 2012-06-11 | Analyzed By: AG
Prep Batch: 78050 | QC Preparation: 2012-06-11 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			76.6	mg/Kg	1	100	77	52 - 140.8

Method Blank (1) QC Batch: 92011

QC Batch: 92011 | Date Analyzed: 2012-06-11 | Analyzed By: AG
Prep Batch: 78057 | QC Preparation: 2012-06-11 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00470	mg/Kg	0.02
Toluene		1	<0.00980	mg/Kg	0.02
Ethylbenzene		1	<0.00500	mg/Kg	0.02
Xylene		1	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	51.3 - 122.4

Method Blank (1) QC Batch: 92012

QC Batch: 92012 | Date Analyzed: 2012-06-11 | Analyzed By: AG
Prep Batch: 78057 | QC Preparation: 2012-06-11 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	78.6 - 131
4-Bromofluorobenzene (4-BFB)			1.28	mg/Kg	1	2.00	64	51 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 92001 | Date Analyzed: 2012-06-11 | Analyzed By: AG
Prep Batch: 78050 | QC Preparation: 2012-06-11 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	243	mg/Kg	1	250	<14.5	97	62 - 128.3

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	239	mg/Kg	1	250	<14.5	96	62 - 128.3	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	93.6	92.7	mg/Kg	1	100	94	93	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 92011 | Date Analyzed: 2012-06-11 | Analyzed By: AG
Prep Batch: 78057 | QC Preparation: 2012-06-11 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.11	mg/Kg	1	2.00	<0.00470	106	86.5 - 124.9
Toluene		1	2.14	mg/Kg	1	2.00	<0.00980	107	84.7 - 122.5
Ethylbenzene		1	2.15	mg/Kg	1	2.00	<0.00500	108	79.4 - 118.9
Xylene		1	6.48	mg/Kg	1	6.00	<0.0170	108	77.5 - 119

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.11	mg/Kg	1	2.00	<0.00470	106	86.5 - 124.9	0	20
Toluene		1	2.14	mg/Kg	1	2.00	<0.00980	107	84.7 - 122.5	0	20
Ethylbenzene		1	2.18	mg/Kg	1	2.00	<0.00500	109	79.4 - 118.9	1	20
Xylene		1	6.50	mg/Kg	1	6.00	<0.0170	108	77.5 - 119	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)	2.06	2.20	mg/Kg	1	2.00	103	110	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.46	2.57	mg/Kg	1	2.00	123	128	65.4 - 149.9

Laboratory Control Spike (LCS-1)

QC Batch: 92012 | Date Analyzed: 2012-06-11 | Analyzed By: AG
Prep Batch: 78057 | QC Preparation: 2012-06-11 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.0	mg/Kg	1	20.0	<1.22	90	65.3 - 105.7

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.6	mg/Kg	1	20.0	<1.22	98	65.3 - 105.7	8	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)	1.87	1.96	mg/Kg	1	2.00	94	98	79 - 131.2
4-Bromofluorobenzene (4-BFB)	1.74	1.88	mg/Kg	1	2.00	87	94	56.4 - 136.6

Matrix Spike (MS-1) Spiked Sample: 300652

QC Batch: 92001 | Date Analyzed: 2012-06-11 | Analyzed By: AG
Prep Batch: 78050 | QC Preparation: 2012-06-11 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	229	mg/Kg	1	250	20.5	83	45.5 - 127

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	238	mg/Kg	1	250	20.5	87	45.5 - 127	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	94.8	96.8	mg/Kg	1	100	95	97	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 300656

QC Batch: 92011 | Date Analyzed: 2012-06-11 | Analyzed By: AG
Prep Batch: 78057 | QC Preparation: 2012-06-11 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.04	mg/Kg	1	2.00	<0.00470	102	69.3 - 159.2
Toluene		1	2.16	mg/Kg	1	2.00	<0.00980	108	68.7 - 157
Ethylbenzene		1	2.43	mg/Kg	1	2.00	<0.00500	122	71.6 - 158.2
Xylene		1	7.29	mg/Kg	1	6.00	<0.0170	122	70.8 - 159.8

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	2.02	mg/Kg	1	2.00	<0.00470	101	69.3 - 159.2	1	20
Toluene		1	2.12	mg/Kg	1	2.00	<0.00980	106	68.7 - 157	2	20
Ethylbenzene		1	2.39	mg/Kg	1	2.00	<0.00500	120	71.6 - 158.2	2	20
Xylene		1	7.25	mg/Kg	1	6.00	<0.0170	121	70.8 - 159.8	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)			2.34	3.05	mg/Kg	1	2	117	152	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.39	4.43	mg/Kg	1	2	170	222	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 300652

QC Batch: 92012 | Date Analyzed: 2012-06-11 | Analyzed By: AG
Prep Batch: 78057 | QC Preparation: 2012-06-11 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.6	mg/Kg	1	20.0	<1.22	93	28.2 - 157.2

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	20.4	mg/Kg	1	20.0	<1.22	102	28.2 - 157.2	9	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.27	2.14	mg/Kg	1	2	114	107	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	2.39	2.24	mg/Kg	1	2	120	112	77.9 - 122.4

Calibration Standards

Standard (CCV-1)

QC Batch: 92001 | Date Analyzed: 2012-06-11 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	238	95	80 - 120	2012-06-11

Standard (CCV-2)

QC Batch: 92001 | Date Analyzed: 2012-06-11 | Analyzed By: AG

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	2012-06-11

Standard (CCV-1)

QC Batch: 92011 | Date Analyzed: 2012-06-11 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.103	103	80 - 120	2012-06-11
Toluene		1	mg/kg	0.100	0.105	105	80 - 120	2012-06-11
Ethylbenzene		1	mg/kg	0.100	0.109	109	80 - 120	2012-06-11
Xylene		1	mg/kg	0.300	0.332	111	80 - 120	2012-06-11

Standard (CCV-2)

QC Batch: 92011 | Date Analyzed: 2012-06-11 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.116	116	80 - 120	2012-06-11
Toluene		1	mg/kg	0.100	0.116	116	80 - 120	2012-06-11
Ethylbenzene		1	mg/kg	0.100	0.118	118	80 - 120	2012-06-11
Xylene		1	mg/kg	0.300	0.353	118	80 - 120	2012-06-11

Standard (CCV-1)

QC Batch: 92012 Date Analyzed: 2012-06-11 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.07	107	80 - 120	2012-06-11

Standard (CCV-2)

QC Batch: 92012 Date Analyzed: 2012-06-11 Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.10	110	80 - 120	2012-06-11

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	T104704392-11-3	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.
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.

12061109

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 1 of 1

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401071

PROJECT NAME: COG/Pickett/Exxon Common Stock #1 TB Eddy Co, NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
300649	5/22		S		X	CS-1 Surface	(AH-1)	1				X								Hold								
650						CS-1 2'	(AH-1)													Hold								
651						CS-1 4'	(AH-1)													Hold								
652						CS-1 Bottom Hole 5'	(AH-1)							X	X													
653						CS-1 North Wall	(AH-1)							X	X													
654						CS-1 South Wall	(AH-1)							X	X													
655						CS-1 East Wall	(AH-1)							X	X													
656	↓		↓		↓	CS-1 West Wall	(AH-1)	Y				Y		X	X													

RELINQUISHED BY: (Signature)	Date: 5/25/12 Time: 1800	RECEIVED BY: (Signature) Jeanne Fitch	Date: 6-11-14 Time: 1000
RELINQUISHED BY: (Signature) Jeanne Fitch	Date: 6-11-14 Time: 1100	RECEIVED BY: (Signature)	Date: 6/11/12 Time: 11:01
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) Tobert Grubbs Jr. Date: 5/24/12 Time: 1500

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: Mardo PHONE: DATE: TIME:

RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED: 6.0°

REMARKS: 24hr TAT

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: April 26, 2012

Work Order: 12042013

Project Location: Eddy Co., NM
Project Name: COG/Pickett-Exxon Common 8 Federal #1 TB
Project Number: 114-6401071

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
294750	BH-1 @ AH-1 (west of trench) 0-1'	soil	2012-04-17	00:00	2012-04-20
294752	BH-1 @ AH-1 (west of trench) 4-5'	soil	2012-04-17	00:00	2012-04-20
294754	BH-1 @ AH-1 (west of trench) 9-10'	soil	2012-04-17	00:00	2012-04-20
294757	BH-2 @ AH-1 (east of trench) 0-1'	soil	2012-04-17	00:00	2012-04-20
294758	BH-2 @ AH-1 (east of trench) 2-3'	soil	2012-04-17	00:00	2012-04-20
294759	BH-2 @ AH-1 (east of trench) 4-5'	soil	2012-04-17	00:00	2012-04-20
294761	BH-2 @ AH-1 (east of trench) 9-10'	soil	2012-04-17	00:00	2012-04-20

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
294750 - BH-1 @ AH-1 (west of trench) 0-1'	<0.0200	<0.0200	<0.0200	**0.293**	**464**	**158**
294752 - BH-1 @ AH-1 (west of trench) 4-5'	<0.0200	<0.0200	<0.0200	<0.0200	**221**	**45.8**
294754 - BH-1 @ AH-1 (west of trench) 9-10'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	**6.02**
294757 - BH-2 @ AH-1 (east of trench) 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	**1680**	**95.1**
294758 - BH-2 @ AH-1 (east of trench) 2-3'					**1360** Qs	**1220** Qr,Qs
294759 - BH-2 @ AH-1 (east of trench) 4-5'	<0.0200	<0.0200	<0.0200	**0.316**	**209**	**81.1**
294761 - BH-2 @ AH-1 (east of trench) 9-10'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

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

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: April 26, 2012

Work Order: 12042013

Project Location: Eddy Co., NM
Project Name: COG/Pickett-Exxon Common 8 Federal #1 TB
Project Number: 114-6401071

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
294750	BH-1 @ AH-1 (west of trench) 0-1'	soil	2012-04-17	00:00	2012-04-20
294752	BH-1 @ AH-1 (west of trench) 4-5'	soil	2012-04-17	00:00	2012-04-20
294754	BH-1 @ AH-1 (west of trench) 9-10'	soil	2012-04-17	00:00	2012-04-20
294757	BH-2 @ AH-1 (east of trench) 0-1'	soil	2012-04-17	00:00	2012-04-20
294758	BH-2 @ AH-1 (east of trench) 2-3'	soil	2012-04-17	00:00	2012-04-20
294759	BH-2 @ AH-1 (east of trench) 4-5'	soil	2012-04-17	00:00	2012-04-20
294761	BH-2 @ AH-1 (east of trench) 9-10'	soil	2012-04-17	00:00	2012-04-20

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

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

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

Report Contents

Case Narrative

Samples for project COG/Pickett-Exxon Common 8 Federal #1 TB were received by TraceAnalysis, Inc. on 2012-04-20 and assigned to work order 12042013. Samples for work order 12042013 were received intact at a temperature of 0.9 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	76742	2012-04-20 at 10:25	90453	2012-04-20 at 12:30
BTEX	S 8021B	76795	2012-04-23 at 09:39	90514	2012-04-23 at 09:55
TPH DRO - NEW	S 8015 D	76782	2012-04-23 at 15:14	90493	2012-04-23 at 15:14
TPH DRO - NEW	S 8015 D	76815	2012-04-24 at 13:11	90553	2012-04-24 at 14:58
TPH GRO	S 8015 D	76742	2012-04-20 at 10:25	90454	2012-04-20 at 12:57
TPH GRO	S 8015 D	76795	2012-04-23 at 09:39	90515	2012-04-23 at 10:23
TPH GRO	S 8015 D	76879	2012-04-25 at 10:55	90612	2012-04-25 at 11:39

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 12042013 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: 294750 - BH-1 @ AH-1 (west of trench) 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90453	Date Analyzed:	2012-04-20	Analyzed By:	tc
Prep Batch:	76742	Sample Preparation:	2012-04-20	Prepared By:	tc

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		1	**0.293**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.65	mg/Kg	1	2.00	132	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.75	mg/Kg	1	2.00	138	63.6 - 158.9

Sample: 294750 - BH-1 @ AH-1 (west of trench) 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90493	Date Analyzed:	2012-04-23	Analyzed By:	DA
Prep Batch:	76782	Sample Preparation:	2012-04-23	Prepared By:	DA

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**464**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	222	mg/Kg	1	100	222	49.3 - 157.5

Sample: 294750 - BH-1 @ AH-1 (west of trench) 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90454	Date Analyzed:	2012-04-20	Analyzed By:	tc
Prep Batch:	76742	Sample Preparation:	2012-04-20	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**158**	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.64	mg/Kg	1	2.00	132	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.82	mg/Kg	1	2.00	141	45.1 - 162.2

Sample: 294752 - BH-1 @ AH-1 (west of trench) 4-5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90453	Date Analyzed:	2012-04-20	Analyzed By:	tc
Prep Batch:	76742	Sample Preparation:	2012-04-20	Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.14	mg/Kg	1	2.00	107	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	63.6 - 158.9

Sample: 294752 - BH-1 @ AH-1 (west of trench) 4-5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90493	Date Analyzed:	2012-04-23	Analyzed By:	DA
Prep Batch:	76782	Sample Preparation:	2012-04-23	Prepared By:	DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**221**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	164	mg/Kg	1	100	164	49.3 - 157.5

Sample: 294752 - BH-1 @ AH-1 (west of trench) 4-5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90454	Date Analyzed:	2012-04-20	Analyzed By:	tc
Prep Batch:	76742	Sample Preparation:	2012-04-20	Prepared By:	tc

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**45.8**	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.19	mg/Kg	1	2.00	110	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	45.1 - 162.2

Sample: 294754 - BH-1 @ AH-1 (west of trench) 9-10'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90453	Date Analyzed:	2012-04-20	Analyzed By:	tc
Prep Batch:	76742	Sample Preparation:	2012-04-20	Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.83	mg/Kg	1	2.00	92	75 - 135.4
4-Bromofluorobenzene (4-BFB)			1.75	mg/Kg	1	2.00	88	63.6 - 158.9

Sample: 294754 - BH-1 @ AH-1 (west of trench) 9-10'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90493	Date Analyzed:	2012-04-23	Analyzed By:	DA
Prep Batch:	76782	Sample Preparation:	2012-04-23	Prepared By:	DA

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			131	mg/Kg	1	100	131	49.3 - 157.5

Sample: 294754 - BH-1 @ AH-1 (west of trench) 9-10'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90454	Date Analyzed:	2012-04-20	Analyzed By:	tc
Prep Batch:	76742	Sample Preparation:	2012-04-20	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**6.02**	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.83	mg/Kg	1	2.00	92	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.65	mg/Kg	1	2.00	82	45.1 - 162.2

Sample: 294757 - BH-2 @ AH-1 (east of trench) 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90453	Date Analyzed:	2012-04-20	Analyzed By:	tc
Prep Batch:	76742	Sample Preparation:	2012-04-20	Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.13	mg/Kg	1	2.00	106	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	63.6 - 158.9

Sample: 294757 - BH-2 @ AH-1 (east of trench) 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90493	Date Analyzed:	2012-04-23	Analyzed By:	DA
Prep Batch:	76782	Sample Preparation:	2012-04-23	Prepared By:	DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**1680**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	365	mg/Kg	1	100	365	49.3 - 157.5

Sample: 294757 - BH-2 @ AH-1 (east of trench) 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90454	Date Analyzed:	2012-04-20	Analyzed By:	tc
Prep Batch:	76742	Sample Preparation:	2012-04-20	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**95.1**	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	45.1 - 162.2

Sample: 294758 - BH-2 @ AH-1 (east of trench) 2-3'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90553	Date Analyzed:	2012-04-24	Analyzed By:	DA
Prep Batch:	76815	Sample Preparation:	2012-04-24	Prepared By:	DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**1360**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	293	mg/Kg	1	100	293	49.3 - 157.5

Sample: 294758 - BH-2 @ AH-1 (east of trench) 2-3'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90612	Date Analyzed:	2012-04-25	Analyzed By:	tc
Prep Batch:	76879	Sample Preparation:	2012-04-25	Prepared By:	tc

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	Qr,Qs	1	**1220**		mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			10.2	mg/Kg	10	10.0	102	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			13.1	mg/Kg	10	10.0	131	45.1 - 162.2

Sample: 294759 - BH-2 @ AH-1 (east of trench) 4-5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90453	Date Analyzed:	2012-04-20	Analyzed By:	tc
Prep Batch:	76742	Sample Preparation:	2012-04-20	Prepared By:	tc

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		1	**0.316**		mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	75 - 135.4
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	63.6 - 158.9

Sample: 294759 - BH-2 @ AH-1 (east of trench) 4-5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90493	Date Analyzed:	2012-04-23	Analyzed By:	DA
Prep Batch:	76782	Sample Preparation:	2012-04-23	Prepared By:	DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**209**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	164	mg/Kg	1	100	164	49.3 - 157.5

Sample: 294759 - BH-2 @ AH-1 (east of trench) 4-5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90454	Date Analyzed:	2012-04-20	Analyzed By:	tc
Prep Batch:	76742	Sample Preparation:	2012-04-20	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**81.1**	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.85	mg/Kg	1	2.00	92	45.1 - 162.2

Sample: 294761 - BH-2 @ AH-1 (east of trench) 9-10'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	90514	Date Analyzed:	2012-04-23	Analyzed By:	tc
Prep Batch:	76795	Sample Preparation:	2012-04-23	Prepared By:	tc

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

continued ...

sample 294761 continued ...

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.31	mg/Kg	1	2.00	116	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.23	mg/Kg	1	2.00	112	63.6 - 158.9

Sample: 294761 - BH-2 @ AH-1 (east of trench) 9-10'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	90493	Date Analyzed:	2012-04-23	Analyzed By:	DA
Prep Batch:	76782	Sample Preparation:	2012-04-23	Prepared By:	DA

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			134	mg/Kg	1	100	134	49.3 - 157.5

Sample: 294761 - BH-2 @ AH-1 (east of trench) 9-10'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	90515	Date Analyzed:	2012-04-23	Analyzed By:	tc
Prep Batch:	76795	Sample Preparation:	2012-04-23	Prepared By:	tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.42	mg/Kg	1	2.00	121	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.12	mg/Kg	1	2.00	106	45.1 - 162.2

Method Blanks

Method Blank (1) QC Batch: 90453

QC Batch: 90453 | Date Analyzed: 2012-04-20 | Analyzed By: tc
Prep Batch: 76742 | QC Preparation: 2012-04-20 | Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00470	mg/Kg	0.02
Toluene		1	<0.00980	mg/Kg	0.02
Ethylbenzene		1	<0.00500	mg/Kg	0.02
Xylene		1	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	55.9 - 112.4

Method Blank (1) QC Batch: 90454

QC Batch: 90454 | Date Analyzed: 2012-04-20 | Analyzed By: tc
Prep Batch: 76742 | QC Preparation: 2012-04-20 | Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.03	mg/Kg	1	2.00	102	78.6 - 111
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	90	55 - 100

Method Blank (1) QC Batch: 90493

QC Batch: 90493 | Date Analyzed: 2012-04-23 | Analyzed By: DA
Prep Batch: 76782 | QC Preparation: 2012-04-23 | Prepared By: DA

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	52 - 140.8

Method Blank (1) QC Batch: 90514

QC Batch: 90514 | Date Analyzed: 2012-04-23 | Analyzed By: tc
Prep Batch: 76795 | QC Preparation: 2012-04-23 | Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00470	mg/Kg	0.02
Toluene		1	<0.00980	mg/Kg	0.02
Ethylbenzene		1	<0.00500	mg/Kg	0.02
Xylene		1	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.16	mg/Kg	1	2.00	108	78 - 123.6
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	55.9 - 112.4

Method Blank (1) QC Batch: 90515

QC Batch: 90515 | Date Analyzed: 2012-04-23 | Analyzed By: tc
Prep Batch: 76795 | QC Preparation: 2012-04-23 | Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.22	mg/Kg	1	2.00	111	78.6 - 111
4-Bromofluorobenzene (4-BFB)			1.97	mg/Kg	1	2.00	98	55 - 100

Method Blank (1) QC Batch: 90553

QC Batch:	90553	Date Analyzed:	2012-04-24	Analyzed By:	DA
Prep Batch:	76815	QC Preparation:	2012-04-24	Prepared By:	DA

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	52 - 140.8

Method Blank (1) QC Batch: 90612

QC Batch:	90612	Date Analyzed:	2012-04-25	Analyzed By:	tc
Prep Batch:	76879	QC Preparation:	2012-04-25	Prepared By:	tc

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	78.6 - 111
4-Bromofluorobenzene (4-BFB)			1.52	mg/Kg	1	2.00	76	55 - 100

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 90453 | Date Analyzed: 2012-04-20 | Analyzed By: tc
Prep Batch: 76742 | QC Preparation: 2012-04-20 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.14	mg/Kg	1	2.00	<0.00470	107	86.5 - 124.9
Toluene		1	2.16	mg/Kg	1	2.00	<0.00980	108	84.7 - 122.5
Ethylbenzene		1	2.17	mg/Kg	1	2.00	<0.00500	108	79.4 - 118.9
Xylene		1	6.49	mg/Kg	1	6.00	<0.0170	108	79.5 - 118.9

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
Benzene		1	2.09	mg/Kg	1	2.00	<0.00470	104	86.5 - 124.9	2	20
Toluene		1	2.09	mg/Kg	1	2.00	<0.00980	104	84.7 - 122.5	3	20
Ethylbenzene		1	2.09	mg/Kg	1	2.00	<0.00500	104	79.4 - 118.9	4	20
Xylene		1	6.29	mg/Kg	1	6.00	<0.0170	105	79.5 - 118.9	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)	1.76	1.95	mg/Kg	1	2.00	88	98	73.9 - 127
4-Bromofluorobenzene (4-BFB)	1.74	1.93	mg/Kg	1	2.00	87	96	70.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 90454 | Date Analyzed: 2012-04-20 | Analyzed By: tc
Prep Batch: 76742 | QC Preparation: 2012-04-20 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.8	mg/Kg	1	20.0	<1.22	89	68.3 - 105.7

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		1	17.6	mg/Kg	1	20.0	<1.22	88	68.3 - 105.7	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)	1.98	1.83	mg/Kg	1	2.00	99	92	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.85	1.74	mg/Kg	1	2.00	92	87	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 90493 | Date Analyzed: 2012-04-23 | Analyzed By: DA
Prep Batch: 76782 | QC Preparation: 2012-04-23 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	255	mg/Kg	1	250	<14.5	102	62 - 128.3

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	252	mg/Kg	1	250	<14.5	101	62 - 128.3	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	134	127	mg/Kg	1	100	134	127	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 90514 | Date Analyzed: 2012-04-23 | Analyzed By: tc
Prep Batch: 76795 | QC Preparation: 2012-04-23 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.22	mg/Kg	1	2.00	<0.00470	111	86.5 - 124.9

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Toluene		1	2.22	mg/Kg	1	2.00	<0.00980	111	84.7 - 122.5
Ethylbenzene		1	2.18	mg/Kg	1	2.00	<0.00500	109	79.4 - 118.9
Xylene		1	6.54	mg/Kg	1	6.00	<0.0170	109	79.5 - 118.9

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
Benzene		1	2.22	mg/Kg	1	2.00	<0.00470	111	86.5 - 124.9	0	20
Toluene		1	2.20	mg/Kg	1	2.00	<0.00980	110	84.7 - 122.5	1	20
Ethylbenzene		1	2.20	mg/Kg	1	2.00	<0.00500	110	79.4 - 118.9	1	20
Xylene		1	6.56	mg/Kg	1	6.00	<0.0170	109	79.5 - 118.9	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)	1.85	1.74	mg/Kg	1	2.00	92	87	73.9 - 127
4-Bromofluorobenzene (4-BFB)	1.87	1.78	mg/Kg	1	2.00	94	89	70.4 - 119.9

Laboratory Control Spike (LCS-1)

QC Batch: 90515 | Date Analyzed: 2012-04-23 | Analyzed By: tc
Prep Batch: 76795 | QC Preparation: 2012-04-23 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.5	mg/Kg	1	20.0	<1.22	92	68.3 - 105.7

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	17.3	mg/Kg	1	20.0	<1.22	86	68.3 - 105.7	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)	2.05	1.98	mg/Kg	1	2.00	102	99	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.88	1.85	mg/Kg	1	2.00	94	92	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 90553 | Date Analyzed: 2012-04-24 | Analyzed By: DA
Prep Batch: 76815 | QC Preparation: 2012-04-24 | Prepared By: DA

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	242	mg/Kg	1	250	<14.5	97	62 - 128.3

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	262	mg/Kg	1	250	<14.5	105	62 - 128.3	8	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	117	125	mg/Kg	1	100	117	125	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 90612 | Date Analyzed: 2012-04-25 | Analyzed By: tc
Prep Batch: 76879 | QC Preparation: 2012-04-25 | Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.1	mg/Kg	1	20.0	<1.22	86	68.3 - 105.7

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	17.3	mg/Kg	1	20.0	<1.22	86	68.3 - 105.7	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)	1.91	1.97	mg/Kg	1	2.00	96	98	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.78	1.83	mg/Kg	1	2.00	89	92	66.4 - 106.6

Matrix Spike (MS-1) Spiked Sample: 294696

QC Batch: 90453 | Date Analyzed: 2012-04-20 | Analyzed By: tc
Prep Batch: 76742 | QC Preparation: 2012-04-20 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.72	mg/Kg	1	2.00	<0.00470	86	69.3 - 159.2
Toluene		1	1.76	mg/Kg	1	2.00	<0.00980	88	68.7 - 157
Ethylbenzene		1	1.82	mg/Kg	1	2.00	<0.00500	91	71.6 - 158.2
Xylene		1	5.43	mg/Kg	1	6.00	<0.0170	90	70.8 - 159.8

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	2.01	mg/Kg	1	2.00	<0.00470	100	69.3 - 159.2	16	20
Toluene		1	2.04	mg/Kg	1	2.00	<0.00980	102	68.7 - 157	15	20
Ethylbenzene		1	2.12	mg/Kg	1	2.00	<0.00500	106	71.6 - 158.2	15	20
Xylene		1	6.32	mg/Kg	1	6.00	<0.0170	105	70.8 - 159.8	15	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)	1.94	2.06	mg/Kg	1	2	97	103	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	1.89	2.02	mg/Kg	1	2	94	101	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 294448

QC Batch: 90454 | Date Analyzed: 2012-04-20 | Analyzed By: tc
Prep Batch: 76742 | QC Preparation: 2012-04-20 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	23.0	mg/Kg	1	20.0	<1.22	115	28.2 - 157.2

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	19.6	mg/Kg	1	20.0	<1.22	98	28.2 - 157.2	16	20

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

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.40	2.08	mg/Kg	1	2	120	104	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	2.24	1.98	mg/Kg	1	2	112	99	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 294761

QC Batch: 90493 | Date Analyzed: 2012-04-23 | Analyzed By: DA
Prep Batch: 76782 | QC Preparation: 2012-04-23 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	253	mg/Kg	1	250	<14.5	101	45.5 - 127

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	255	mg/Kg	1	250	<14.5	102	45.5 - 127	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
n-Tricosane	127	125	mg/Kg	1	100	127	125	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 294840

QC Batch: 90514 | Date Analyzed: 2012-04-23 | Analyzed By: tc
Prep Batch: 76795 | QC Preparation: 2012-04-23 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.24	mg/Kg	1	2.00	<0.00470	112	69.3 - 159.2
Toluene		1	2.25	mg/Kg	1	2.00	<0.00980	112	68.7 - 157
Ethylbenzene		1	2.32	mg/Kg	1	2.00	<0.00500	116	71.6 - 158.2
Xylene		1	7.01	mg/Kg	1	6.00	<0.0170	117	70.8 - 159.8

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	2.25	mg/Kg	1	2.00	<0.00470	112	69.3 - 159.2	0	20
Toluene		1	2.28	mg/Kg	1	2.00	<0.00980	114	68.7 - 157	1	20
Ethylbenzene		1	2.35	mg/Kg	1	2.00	<0.00500	118	71.6 - 158.2	1	20
Xylene		1	7.06	mg/Kg	1	6.00	<0.0170	118	70.8 - 159.8	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)	2.17	2.30	mg/Kg	1	2	108	115	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	2.17	2.30	mg/Kg	1	2	108	115	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 294761

QC Batch: 90515 | Date Analyzed: 2012-04-23 | Analyzed By: tc
Prep Batch: 76795 | QC Preparation: 2012-04-23 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.5	mg/Kg	1	20.0	<1.22	98	28.2 - 157.2

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	21.6	mg/Kg	1	20.0	<1.22	108	28.2 - 157.2	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
Trifluorotoluene (TFT)	2.15	2.24	mg/Kg	1	2	108	112	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	2.00	2.09	mg/Kg	1	2	100	104	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 295039

QC Batch: 90553 | Date Analyzed: 2012-04-24 | Analyzed By: DA
Prep Batch: 76815 | QC Preparation: 2012-04-24 | Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	2340	mg/Kg	5	250	2210	52	45.5 - 127

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	2700	mg/Kg	5	250	2210	196	45.5 - 127	14	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	378	411	mg/Kg	5	100	378	411	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 295158

QC Batch: 90612 | Date Analyzed: 2012-04-25 | Analyzed By: tc
Prep Batch: 76879 | QC Preparation: 2012-04-25 | Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	6340	mg/Kg	50	500	5925.95	83	28.2 - 157.2

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	Qr,Qs	Qr,Qs	7790	mg/Kg	50	500	5925.95	373	28.2 - 157.2	20	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)			51.2	51.0	mg/Kg	50	50	102	102	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	66.2	65.4	mg/Kg	50	50	132	131	77.9 - 122.4

Calibration Standards

Standard (CCV-1)

QC Batch: 90453 | Date Analyzed: 2012-04-20 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.105	105	80 - 120	2012-04-20
Toluene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-20
Ethylbenzene		1	mg/kg	0.100	0.108	108	80 - 120	2012-04-20
Xylene		1	mg/kg	0.300	0.324	108	80 - 120	2012-04-20

Standard (CCV-2)

QC Batch: 90453 | Date Analyzed: 2012-04-20 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.108	108	80 - 120	2012-04-20
Toluene		1	mg/kg	0.100	0.107	107	80 - 120	2012-04-20
Ethylbenzene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-20
Xylene		1	mg/kg	0.300	0.315	105	80 - 120	2012-04-20

Standard (CCV-3)

QC Batch: 90453 | Date Analyzed: 2012-04-20 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0998	100	80 - 120	2012-04-20
Toluene		1	mg/kg	0.100	0.0991	99	80 - 120	2012-04-20
Ethylbenzene		1	mg/kg	0.100	0.0974	97	80 - 120	2012-04-20
Xylene		1	mg/kg	0.300	0.289	96	80 - 120	2012-04-20

Standard (CCV-1)

QC Batch: 90454 | Date Analyzed: 2012-04-20 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.996	100	80 - 120	2012-04-20

Standard (CCV-2)

QC Batch: 90454 | Date Analyzed: 2012-04-20 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.03	103	80 - 120	2012-04-20

Standard (CCV-3)

QC Batch: 90454 | Date Analyzed: 2012-04-20 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.875	88	80 - 120	2012-04-20

Standard (CCV-1)

QC Batch: 90493 | Date Analyzed: 2012-04-23 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	238	95	80 - 120	2012-04-23

Standard (CCV-2)

QC Batch: 90493 | Date Analyzed: 2012-04-23 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	247	99	80 - 120	2012-04-23

Standard (CCV-1)

QC Batch: 90514 Date Analyzed: 2012-04-23 Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.110	110	80 - 120	2012-04-23
Toluene		1	mg/kg	0.100	0.109	109	80 - 120	2012-04-23
Ethylbenzene		1	mg/kg	0.100	0.107	107	80 - 120	2012-04-23
Xylene		1	mg/kg	0.300	0.320	107	80 - 120	2012-04-23

Standard (CCV-2)

QC Batch: 90514 Date Analyzed: 2012-04-23 Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.106	106	80 - 120	2012-04-23
Toluene		1	mg/kg	0.100	0.104	104	80 - 120	2012-04-23
Ethylbenzene		1	mg/kg	0.100	0.103	103	80 - 120	2012-04-23
Xylene		1	mg/kg	0.300	0.308	103	80 - 120	2012-04-23

Standard (CCV-1)

QC Batch: 90515 Date Analyzed: 2012-04-23 Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.03	103	80 - 120	2012-04-23

Standard (CCV-2)

QC Batch: 90515 | Date Analyzed: 2012-04-23 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.08	108	80 - 120	2012-04-23

Standard (CCV-2)

QC Batch: 90553 | Date Analyzed: 2012-04-24 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	236	94	80 - 120	2012-04-24

Standard (CCV-3)

QC Batch: 90553 | Date Analyzed: 2012-04-24 | Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	253	101	80 - 120	2012-04-24

Standard (CCV-1)

QC Batch: 90612 | Date Analyzed: 2012-04-25 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.07	107	80 - 120	2012-04-25

Standard (CCV-2)

QC Batch: 90612 | Date Analyzed: 2012-04-25 | Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.18	118	80 - 120	2012-04-25

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	T104704392-11-3	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.
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.

1204013

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114640 1071

PROJECT NAME: Pickett / Exxon Common 8 Fed #1
Eddy Co., NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
29475	4/17		S		X	BH-1 @ AH-1 (West of trench) 0-1'	1				X		X	X														
751						2-3'	1				X																	
752						4-5'	1				X		X	X														
753						6-7'	1				X																	
754						9-10'	1				X		X	X														
755						14-15'	1				X																	
756						19-20'	1				X																	
757						BH-2 @ AH-1 (East of trench) 0-1'	1				X		X	X														
758						2-3'	1				X																	
759						4-5'	1				X		X	X														

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: 4-18-12 Time: 0800

RELINQUISHED BY: (Signature) Jesse Fitch Date: 4-20-12 Time: 1053
RECEIVED BY: (Signature) Date: 4/20/12 Time: 10:53

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Kim Date: 4/17/12 Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #:
OTHER:

RECEIVING LABORATORY: TRACE
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4.90 intact

REMARKS: RUH deepest depths of TPH exceeds 1,000 mg/kg or

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

benzene exceed 10 mg/kg or total BTEX exceed 50 mg/kg

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401071

PROJECT NAME: Pickett/Exxon Comm 8 Fed #1

Eddy Co., NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
760	4/17		S		X	BH-2 @ AH-1 (East of track) 6-7'	1				X	
761						9-10'	1				X	
762						14-15'	1				X	
763						19-20'	1				X	
764						24-25'	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
X	X															

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Jeanne Fitch Date: 4/18/12 Time: 0900

SAMPLED BY: (Print & Initial) Kim Date: Time:

RELINQUISHED BY: (Signature) Jeanne Fitch Date: 4-20-12 Time: 1053

RECEIVED BY: (Signature) Date: 4/20/12 Time: 10:53

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: TRACE

ADDRESS:

CITY: MIDLAND STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 90 Intact

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.