

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised 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 1300 Midland, Texas 79701	Telephone No. (432) 230-0077	
Facility Name Moe Federal Tank Battery	Facility Type Tank Battery	
Surface Owner: Federal	Mineral Owner	Lease No. (API#) 30-025-36655

LOCATION OF RELEASE

Unit Letter M	Section 34	Township 17S	Range 32E	Feet from the	North/South Line	Feet from the	East/West Line	County Lea
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Latitude N32.78466 ° Longitude W 103.75958°

NATURE OF RELEASE

Type of Release: Produced Fluid	Volume of Release 10bbls	Volume Recovered 8 bbls
Source of Release: Oil Tanks	Date and Hour of Occurrence 08/30/2011	Date and Hour of Discovery 08/30/2011 10:00 a.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. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

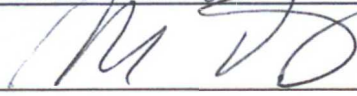
Describe Cause of Problem and Remedial Action Taken.*

The water dump failed on the production heater causing water to be pushed into the oil tanks. The water dump has been repaired.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personal inspected the site and collected soil samples to define the spill extents. Soil that exceeded RRAL was removed and hauled to proper disposal. Once excavated to the appropriate depths, confirmation samples were collected for the excavation bottoms. Based on the results, the excavation was backfilled with clean soil. Tetra Tech prepared and submitted a closure report for the 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: Senior Project Manager		Approval Date:	Expiration Date:
E-mail Address: ike.tavarez@tetrattech.com		Conditions of Approval:	
Date: 2-16-12 Phone: (432) 682-4559		Attached ☐	

* Attach Additional Sheets If Necessary

PJXK16080756547
4892

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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	Moe Federal Tank Battery	Facility Type	Tank Battery
Surface Owner	Federal	Mineral Owner	
		Lease No. (API#) 30-025-36655	

LOCATION OF RELEASE

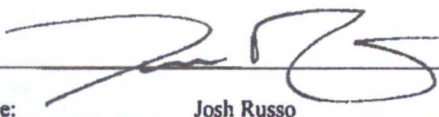
Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	34	17S	32E					Lea

Latitude 32.78466 Longitude 103.75958

NATURE OF RELEASE

Type of Release	Produced Fluid	Volume of Release	10bbls	Volume Recovered	8bbls
Source of Release	Oil Tanks	Date and Hour of Occurrence	08/30/2011	Date and Hour of Discovery	08/30/2011 10:00 a.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.*					
The water dump failed on the production heater causing water to be pushed into the oil tanks. The water dump has been repaired.					
Describe Area Affected and Cleanup Action Taken.*					
Initially 10bbls were released from the oil tanks and we were able to recover 8bbls with a vacuum truck. All fluid was contained inside the facility walls at the tank battery. The spill area measured roughly 15' x 30' around the tanks. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the BLM/NMOCD 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.					

OIL CONSERVATION DIVISION

Signature:			
Printed Name:	Josh Russo		
Title:	HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address:	jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date:	09/15/2011	Phone:	432-212-2399

* Attach Additional Sheets If Necessary

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Moe Federal Tank Battery					
Company:	COG Operating LLC					
Section, Township and Range	Sec 34	T17S	R32E			
Lease Number:	API-30-025-36655					
County:	Lea County					
GPS:	32.78466° N			103.75958° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of Hwy 529 and CR 126, travel south on CR 126 for 0.2 miles, turn left and travel 0.1 miles, turn right and travel 500' to location.					

Release Data:

Date Released:	8/30/2011
Type Release:	Produced Fluid
Source of Contamination:	Oil Tanks
Fluid Released:	10 bbls
Fluids Recovered:	8 bbls

Official Communication:

Name:	Pat Ellis	Ike Tavaréz
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@tetrattech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	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:	0	

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5,000

HOBBS OCD

FEB 27 2012

RECEIVED



TETRA TECH

February 9, 2012

HOBBS OCD

FEB 27 2012

RECEIVED

Mr. Geoffrey Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Closure Report for the COG Operating LLC., Moe Federal Tank Battery, Unit M, Section 34, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Moe Federal Tank Battery, Unit M, Section 34, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.78466°, W 103.75958°. 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 August 30, 2011, and released approximately ten (10) barrels of produced fluid due to an inoperable water dump. To alleviate the problem, COG personnel repaired the water dump. Eight (8) barrels of standing fluids were recovered. The spill measured approximately 35' x 95' and was contained inside the facilities firewalls. The initial C-141 form is enclosed in Appendix C.

Groundwater

According to the OCD groundwater map, the area of concern does show a shallow groundwater depth. During previous completed projects, Tetra Tech has installed temporary wells in the area to establish groundwater depth. The closest temporary wells were installed in Section 30, T17S, R32E and Section 11, T18S, R32E to a total depth of 130' below surface and did not encounter any groundwater in these areas. Based on

Tetra Tech

1910 North Big Spring, Midland, TX 79705

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www.tetrattech.com



the data, the depth to groundwater in this area appears to be greater than 100' below surface. The temporary well logs and groundwater data are shown in Appendix A.

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 5,000 mg/kg.

Soil Assessment and Analytical Results

On November 2, 2011, Tetra Tech personnel inspected and sampled the spill area, which measured approximately 35' x 95'. Three (3) auger holes (AH-1 and AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Select 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 B. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, auger holes (AH-1 and AH-3) showed a shallow hydrocarbon impact to the soils. The soil samples at 0-1' exceeded the RRAL for TPH and total BTEX and declined below the RRAL at 1-1.5' below surface. Auger holes (AH-2) showed a deeper impact to the soils, but declined below the RRAL at a depth of 3.0-3.5' below surface. The chloride concentrations do not appear to an environmental concern.

Remediation and Closure Activities

Based on the auger hole results, Tetra Tech supervised the removal of impacted soil above the RRAL. In the areas of AH-1 and AH-3, the impacted soils were excavated to a depth of approximately 1.0' below surface and 3.0' in the area of AH-2. A total of 80 cubic yards of soil were removed and hauled to proper disposal.



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Once excavated to the appropriate depths, confirmation samples were collected from the excavation bottoms for TPH and BTEX on January 26, 2012. The confirmation results are summarized in Table 1. Referring to Table 1, all of the confirmation samples were below the RRAL. Based on the results, the excavation was backfilled with clean soil.

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

Respectfully submitted,
TETRA TECH

Ike Tavaréz
Senior Project Manager

cc: Pat Ellis – COG
cc: Geoffrey Leking - OCD

Table 1

COG Operating LLC

Moe Federal Tank Battery

Lea County, New Mexico

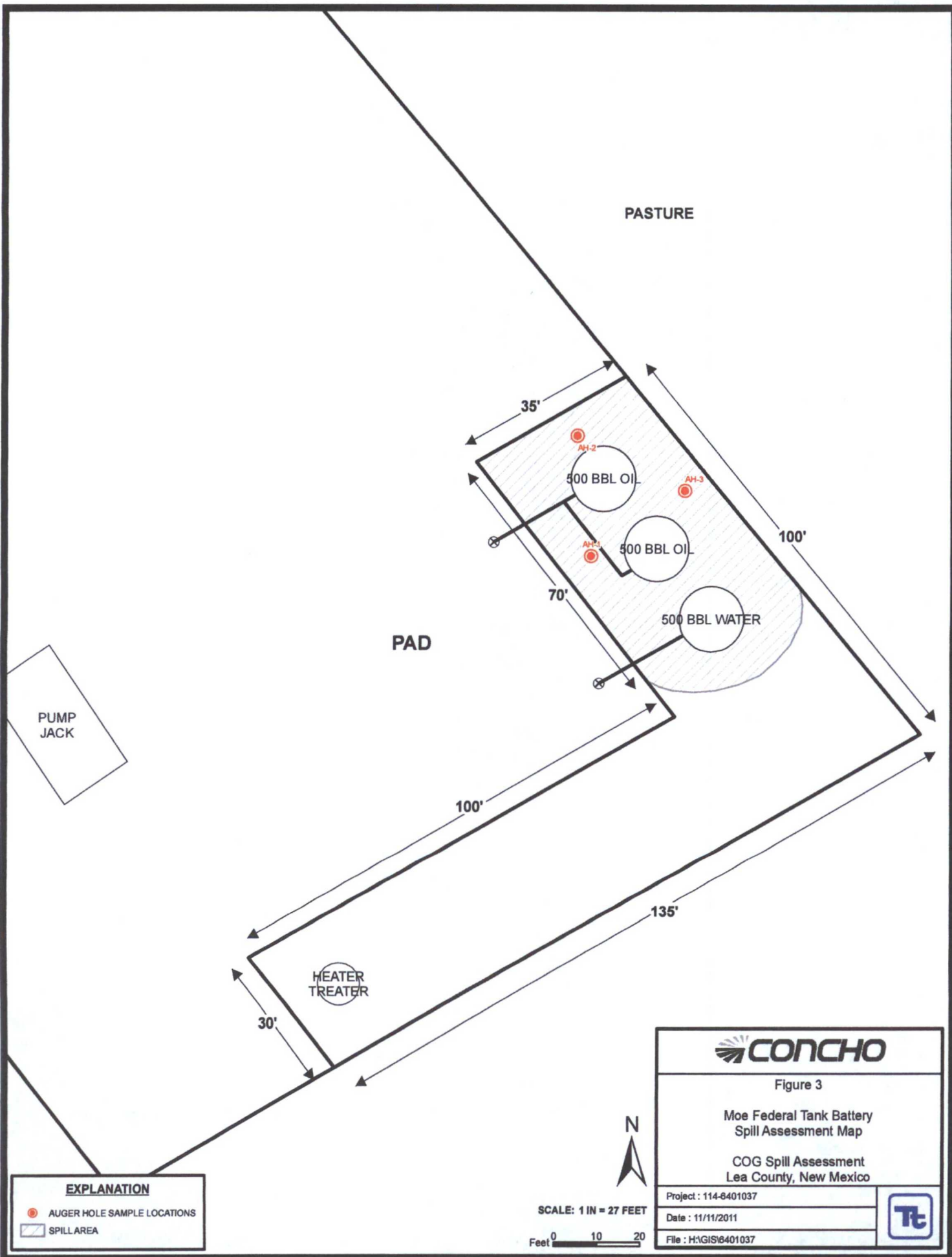
Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	11/2/2011	0-1'	-		X	3,320	8,070	11,390	2.94	32.6	31.8	92.0	159	<200
	"	1-1.5'	-	X		34.1	367	401	<0.0200	<0.0200	0.152	0.622	0.774	<200
	"	2-2.5'	-	X		-	-	-	-	-	-	-	-	<200
CS-1 Bottom Hole	1/26/2012	1'	-	X		8.71	1,260	1,269	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
AH-2	11/2/2011	0-1'	-		X	5,510	6,510	12,020	33.0	170	86.3	156	445	<200
	"	1-1.5'	-		X	4,320	6,140	10,460	26.0	139	68.9	122	356	<200
	"	2-2.5'	-		X	1,890	2,400	4,290	1.26	30.5	23.5	51.8	107	<200
	"	3-3.5'	-	X		-	-	-	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<200
CS-2 Bottom Hole	1/26/2012	3'	-	X		7.17	66.8	74.0	<0.0200	<0.0200	<0.0200	0.118	0.118	-
AH-3	11/2/2011	0-1'	-		X	2,260	2,950	5,210	1.51	28.4	25.1	62.6	118	773
	"	1-1.5'	-	X		2.72	<50.0	2.72	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	820
	"	2-2.5'	-	X		-	-	-	-	-	-	-	-	788
	"	3-3.5'	-	X		-	-	-	-	-	-	-	-	394
	"	4-4.5'	-	X		-	-	-	-	-	-	-	-	240
CS-3 Bottom Hole	1/26/2012	1'	-	X		4.81	492	497	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-

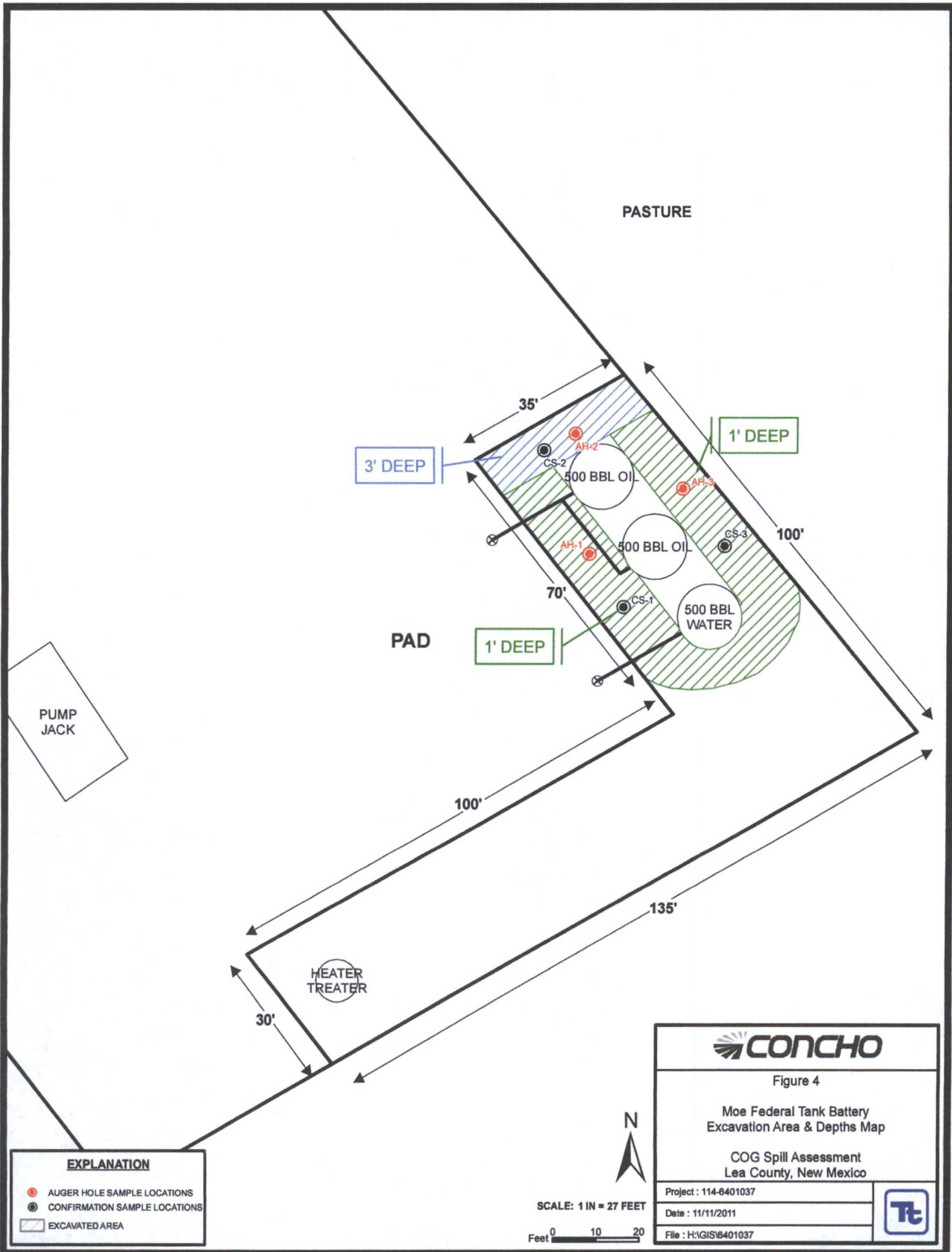
(-) Not Analyzed

Excavation Depths









COG Operating LLC
Moe Federal Tank Battery
Lea County, New Mexico



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View North – Area of AH-1



View East – Area of AH-2

COG Operating LLC
Moe Federal Tank Battery
Lea County, New Mexico



TETRA TECH



View South – Area of AH-3

Water Well Data
Average Depth to Groundwater (ft)
COG - Moe Federal Tank Battery
Lea County, New Mexico

16 South 31 East					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
290					

17 South 31 East					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
			271		

18 South 31 East					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				261	

16 South 32 East					
6	5	4	3	85	2 265 1 265
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				260	

17 South 32 East					
6	5	4	3	2	1 225
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
			34		
			SITE		

18 South 32 East					
6	5	4	65	3	2 1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
			117		

16 South 33 East					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
190	188		180		

17 South 33 East					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				155	

18 South 33 East					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				177	

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Field water level
- New Mexico Water and Infrastructure Data System
- Site
- Tetra Tech Temporary well

SAMPLE LOG

Boring/Well: TMW-1
 Project Number: 114-6400438
 Client: COG
 Site Location: Rhino
 Location: Lea Co., NM
 Legals: T-17S R-32E Sec35
 Total Depth: 130
 Date Installed: 03/16/11
 Gauged: 3/23/11 - 133' Dry Well TOC

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
5	--	Very loose brown sand - dry blow sand
10	--	Very soft white clay - dry caliche powder
15	--	Loose tan sand w/ 1mm gravel - very dry
20	--	Loose tan sand w/ 2.5mm gravel - very dry
25	--	Loose reddish sand well sorted - very dry
30	--	Soft silty clay brown/reddish - dry
35	--	Soft reddish silty clay - dry
40	--	Soft tan silty clay - dry
45	--	Soft red silty clay - dry
50	--	Stiff brown/reddish clay - dry
55	--	Stiff brown/reddish clay - dry
60	--	Stiff brown/reddish clay - dry
65	--	Stiff red clay - dry (Redbed)
70	--	Medium stiff red silty clay powder - very dry
75	--	Medium stiff red silty clay powder - very dry
80	--	Medium stiff red silty clay powder - very dry
85	--	Medium stiff red silty clay powder - very dry
90	--	Medium stiff red silty clay powder - very dry
95	--	Medium stiff red silty clay powder - very dry
100	--	Medium stiff red silty clay powder - very dry
105	--	Medium stiff red silty clay powder - very dry
110	--	Medium stiff red silty clay powder - very dry
115	--	Medium dense silty sandy clay
120	--	Medium stiff red clay - very dry
125	--	Medium stiff red clay - very dry
130	--	Medium stiff red clay - very dry

Total Depth 130' Groundwater was not encountered

SAMPLE LOG

Boring/Well: TMW-1
 Project Number: 114-6400224
 Client: COG
 Site Location: Pronghorn Section 30
 Location: Lea County, New Mexico
 Legals: Township 17S Range 32E Section 30
 Total Depth: 180
 Date Installed: 07/14/09

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
5-6	--	Brown fine grain sand
10-11	--	Buff limestone
15-16	--	Tan to buff calcareous sand with chert intermixed.
20-21	--	Tan calcareous sand
25-26	--	Tan fine grain sand
30-31	--	Tan to yellow sandy clay
35-36	--	Reddish clayey sand with gravel
40-41	--	Red gravelly fine grain sand
45-46	--	Red to buff gravelly calcareous sand
50-51	--	Red fine grain sand
55-56	--	Red sandy silt
60-61	--	Red silty clay (dry)
65-66	--	Red coarse grain sandy clay
70-71	--	Red fine grain sand
75-76	--	Red fine grain sand
80-81	--	Red gravelly sand
85-86	--	Red fine grain silty clay with some sand intermixed
90-91	--	Red fine grain silty clay with some sand intermixed
95-96	--	Red fine grain silty clay with some sand intermixed
100-101	--	Red fine grain silty clay with some sand intermixed
105-106	--	Tan red fine grain sand
110-111	--	Tan fine grain sand
115-116	--	Tan fine grain sand
120-121	--	Tan to red fine grain sand
130-131	--	Red clay of high plasticity (Red bed)
140-141	--	Red clay of high plasticity (Red bed)
150-151	--	Red clay of high plasticity (Red bed) intermixed with gravel
160-161	--	Red clay of high plasticity (Red bed) intermixed with gravel
170-171	--	Red clay of high plasticity (Red bed) intermixed with gravel
180-181	--	Red clay of high plasticity (Red bed)

Total Depth 181' Groundwater was not encountered

SAMPLE LOG

Boring/Well: TMW-1
 Project Number:
 Client: COG
 Site Location: Pronghorn 1/2 Mile Leak
 Location: Lea Co., NM
 Legals: T-18S R-32E Sec 11
 Total Depth: 130
 Date Installed: 03/16/11
 Gauged: 3/23/11 - 133' Dry Well

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
5	--	Soft white caliche powder
10	--	Stiff sandy clay
15	--	Stiff sandy clay
20	--	Tan loose silty sand
25	--	Medium stiff silty clay with some sand
30	--	Tan loose coarse sand with gravel 10-20mm
35	--	Lighter loose sand and gravel - dry
40	--	Well sorted loose sand - very fine silty - dry
45	--	Well sorted loose sand - very fine silty - dry
50	--	Loose reddish/brown well sorted sand - dry
55	--	Loose coarse sand small gravel 0.5mm
60	--	Silty reddish sandy clay with some gravel 1mm
65	--	Silty reddish sandy clay with some gravel 1mm
70	--	Silty reddish sandy clay with some gravel 1mm
75	--	Soft red silty clay - dry
80	--	Soft red silty clay - dry
85	--	Soft red silty clay - dry
90	--	Soft red silty clay - dry
95	--	Soft brown silty clay - dry
100	--	Soft brown silty clay - dry
105	--	Soft brown silty clay - dry
110	--	Soft brown silty clay - dry
115	--	Soft brown silty clay - dry
120	--	Loose brown sand - well sorted silty - dry
125	--	Loose brown sand - well sorted silty - dry
130	--	Loose silty clay - gray color - shale

Total Depth 130' Groundwater was not encountered

Summary Report

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

Report Date: February 8, 2012

Work Order: 12013119



Project Location: Lea County, NM
Project Name: COG/Moe Federal Tank Battery
Project Number: 114-6401037

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
287907	CS-1 Bottomhole 1' AH-1)	soil	2012-01-26	00:00	2012-01-31
287908	CS-2 Bottomhole 3' (AH-2)	soil	2012-01-26	00:00	2012-01-31
287909	CS-3 Bottomhole 1' (AH-3)	soil	2012-01-26	00:00	2012-01-31

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
287907 - CS-1 Bottomhole 1' AH-1)	<0.0200	<0.0200	<0.0200	<0.0200	1260	8.71 Qs
287908 - CS-2 Bottomhole 3' (AH-2)	<0.0200	<0.0200	<0.0200	0.118	66.8	7.17 Qs
287909 - CS-3 Bottomhole 1' (AH-3)	<0.0200	<0.0200	<0.0200	<0.0200	492	4.81



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: February 8, 2012

Work Order: 12013119



Project Location: Lea County, NM
Project Name: COG/Moe Federal Tank Battery
Project Number: 114-6401037

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
287907	CS-1 Bottomhole 1' AH-1)	soil	2012-01-26	00:00	2012-01-31
287908	CS-2 Bottomhole 3' (AH-2)	soil	2012-01-26	00:00	2012-01-31
287909	CS-3 Bottomhole 1' (AH-3)	soil	2012-01-26	00:00	2012-01-31

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 19 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

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Case Narrative

Samples for project COG/Moe Federal Tank Battery were received by TraceAnalysis, Inc. on 2012-01-31 and assigned to work order 12013119. Samples for work order 12013119 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	74935	2012-02-02 at 14:14	88263	2012-02-02 at 14:20
BTEX	S 8021B	74984	2012-02-03 at 09:15	88313	2012-02-03 at 16:56
TPH DRO - NEW	S 8015 D	74990	2012-02-03 at 15:00	88324	2012-02-06 at 10:04
TPH GRO	S 8015 D	74935	2012-02-02 at 14:14	88262	2012-02-02 at 14:16
TPH GRO	S 8015 D	74984	2012-02-03 at 09:15	88317	2012-02-03 at 17:23

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12013119 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.

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Analytical Report

Sample: 287907 - CS-1 Bottomhole 1' AH-1)

Laboratory: Midland
Analysis: BTEX
QC Batch: 88263
Prep Batch: 74935

Analytical Method: S 8021B
Date Analyzed: 2012-02-02
Sample Preparation: 2012-02-02

Prep Method: S 5035
Analyzed By: tc
Prepared By: tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	2	<0.0200	mg/Kg	1	0.0200
Toluene	u	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	2	<0.0200	mg/Kg	1	0.0200
Xylene	u	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.02	mg/Kg	1	2.00	101	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	70.6 - 179

Sample: 287907 - CS-1 Bottomhole 1' AH-1)

Laboratory: Lubbock
Analysis: TPH DRO - NEW
QC Batch: 88324
Prep Batch: 74990

Analytical Method: S 8015 D
Date Analyzed: 2012-02-06
Sample Preparation: 2012-02-03

Prep Method: N/A
Analyzed By: CM
Prepared By: CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	1260	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qcr	Qcr	180	mg/Kg	1	100	180	61.5 - 159

Sample: 287907 - CS-1 Bottomhole 1' AH-1)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 88262
Prep Batch: 74935

Analytical Method: S 8015 D
Date Analyzed: 2012-02-02
Sample Preparation: 2012-02-02

Prep Method: S 5035
Analyzed By: tc
Prepared By: tc

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	2	8.71	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.37	mg/Kg	1	2.00	118	22.4 - 149

Sample: 287908 - CS-2 Bottomhole 3' (AH-2)

Laboratory: Midland

Analysis: BTEX

QC Batch: 88263

Prep Batch: 74935

Analytical Method: S 8021B

Date Analyzed: 2012-02-02

Sample Preparation: 2012-02-02

Prep Method: S 5035

Analyzed By: tc

Prepared By: tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	2	<0.0200	mg/Kg	1	0.0200
Toluene	u	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	2	<0.0200	mg/Kg	1	0.0200
Xylene		2	0.118	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	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	1	2.00	98	70.6 - 179

Sample: 287908 - CS-2 Bottomhole 3' (AH-2)

Laboratory: Lubbock

Analysis: TPH DRO - NEW

QC Batch: 88324

Prep Batch: 74990

Analytical Method: S 8015 D

Date Analyzed: 2012-02-06

Sample Preparation: 2012-02-03

Prep Method: N/A

Analyzed By: CM

Prepared By: CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	66.8	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	61.5 - 159

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Sample: 287908 - CS-2 Bottomhole 3' (AH-2)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 88262
Prep Batch: 74935

Analytical Method: S 8015 D
Date Analyzed: 2012-02-02
Sample Preparation: 2012-02-02

Prep Method: S 5035
Analyzed By: tc
Prepared By: tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q*	2	7.17	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.02	mg/Kg	1	2.00	101	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.39	mg/Kg	1	2.00	120	22.4 - 149

Sample: 287909 - CS-3 Bottomhole 1' (AH-3)

Laboratory: Midland
Analysis: BTEX
QC Batch: 88313
Prep Batch: 74984

Analytical Method: S 8021B
Date Analyzed: 2012-02-03
Sample Preparation: 2012-02-03

Prep Method: S 5035
Analyzed By: tc
Prepared By: tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<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	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	1	2.00	103	63.6 - 158.9

Sample: 287909 - CS-3 Bottomhole 1' (AH-3)

Laboratory: Lubbock
Analysis: TPH DRO - NEW
QC Batch: 88324
Prep Batch: 74990

Analytical Method: S 8015 D
Date Analyzed: 2012-02-06
Sample Preparation: 2012-02-03

Prep Method: N/A
Analyzed By: CM
Prepared By: CM

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	492	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			144	mg/Kg	1	100	144	61.5 - 159

Sample: 287909 - CS-3 Bottomhole 1' (AH-3)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 88317
Prep Batch: 74984

Analytical Method: S 8015 D
Date Analyzed: 2012-02-03
Sample Preparation: 2012-02-03

Prep Method: S 5035
Analyzed By: tc
Prepared By: tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		2	4.81	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.09	mg/Kg	1	2.00	104	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.33	mg/Kg	1	2.00	116	45.1 - 162.2

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Method Blanks

Method Blank (1) QC Batch: 88262

QC Batch: 88262
Prep Batch: 74935

Date Analyzed: 2012-02-02
QC Preparation: 2012-02-02

Analyzed By: tc
Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		2	<0.753	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.99	mg/Kg	1	2.00	100	67.6 - 150
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	52.4 - 130

Method Blank (1) QC Batch: 88263

QC Batch: 88263
Prep Batch: 74935

Date Analyzed: 2012-02-02
QC Preparation: 2012-02-02

Analyzed By: tc
Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.0118	mg/Kg	0.02
Toluene		2	<0.00600	mg/Kg	0.02
Ethylbenzene		2	<0.00850	mg/Kg	0.02
Xylene		2	<0.00613	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.98	mg/Kg	1	2.00	99	65.9 - 111.8
4-Bromofluorobenzene (4-BFB)			1.72	mg/Kg	1	2.00	86	48.4 - 123.1

Method Blank (1) QC Batch: 88313

QC Batch: 88313
Prep Batch: 74984

Date Analyzed: 2012-02-03
QC Preparation: 2012-02-03

Analyzed By: tc
Prepared By: tc

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Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.00470	mg/Kg	0.02
Toluene		2	<0.00980	mg/Kg	0.02
Ethylbenzene		2	<0.00500	mg/Kg	0.02
Xylene		2	<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 - 113.6
4-Bromofluorobenzene (4-BFB)			1.64	mg/Kg	1	2.00	82	55.9 - 112.4

Method Blank (1) QC Batch: 88317

QC Batch: 88317
Prep Batch: 74984

Date Analyzed: 2012-02-03
QC Preparation: 2012-02-03

Analyzed By: tc
Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	78.6 - 109
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	58 - 100

Method Blank (1) QC Batch: 88324

QC Batch: 88324
Prep Batch: 74990

Date Analyzed: 2012-02-06
QC Preparation: 2012-02-03

Analyzed By: CM
Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<17.1	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			109	mg/Kg	1	100	109	61.5 - 159

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 88262
Prep Batch: 74935

Date Analyzed: 2012-02-02
QC Preparation: 2012-02-02

Analyzed By: tc
Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	18.5	mg/Kg	1	20.0	<0.753	92	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		2	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)	1.94	1.86	mg/Kg	1	2.00	97	93	61.9 - 142
4-Bromofluorobenzene (4-BFB)	2.14	2.08	mg/Kg	1	2.00	107	104	56.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 88263
Prep Batch: 74935

Date Analyzed: 2012-02-02
QC Preparation: 2012-02-02

Analyzed By: tc
Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	1.92	mg/Kg	1	2.00	<0.0118	96	77.4 - 121.7
Toluene		2	1.83	mg/Kg	1	2.00	<0.00600	92	88.6 - 121.6
Ethylbenzene		2	1.69	mg/Kg	1	2.00	<0.00850	84	74.3 - 117.9
Xylene		2	5.00	mg/Kg	1	6.00	<0.00613	83	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		2	1.83	mg/Kg	1	2.00	<0.0118	92	77.4 - 121.7	5	20
Toluene		2	1.81	mg/Kg	1	2.00	<0.00600	90	88.6 - 121.6	1	20
Ethylbenzene		2	1.76	mg/Kg	1	2.00	<0.00850	88	74.3 - 117.9	4	20

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control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Xylene		2	5.26	mg/Kg	1	6.00	<0.00613	88	73.4 - 118.8	5	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.24	1.83	mg/Kg	1	2.00	112	92	65.5 - 116.7
4-Bromofluorobenzene (4-BFB)	1.79	1.76	mg/Kg	1	2.00	90	88	56.2 - 132.1

Laboratory Control Spike (LCS-1)

QC Batch: 88313
Prep Batch: 74984

Date Analyzed: 2012-02-03
QC Preparation: 2012-02-03

Analyzed By: tc
Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	2.27	mg/Kg	1	2.00	<0.00470	114	86.5 - 118.9
Toluene		2	2.19	mg/Kg	1	2.00	<0.00980	110	84.7 - 112.5
Ethylbenzene		2	2.10	mg/Kg	1	2.00	<0.00500	105	79.4 - 108.9
Xylene		2	6.28	mg/Kg	1	6.00	<0.0170	105	79.5 - 108.9

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	2.17	mg/Kg	1	2.00	<0.00470	108	86.5 - 118.9	4	20
Toluene		2	2.14	mg/Kg	1	2.00	<0.00980	107	84.7 - 112.5	2	20
Ethylbenzene		2	2.05	mg/Kg	1	2.00	<0.00500	102	79.4 - 108.9	2	20
Xylene		2	6.10	mg/Kg	1	6.00	<0.0170	102	79.5 - 108.9	3	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.10	2.03	mg/Kg	1	2.00	105	102	73.9 - 117
4-Bromofluorobenzene (4-BFB)	1.92	1.86	mg/Kg	1	2.00	96	93	70.4 - 119

Laboratory Control Spike (LCS-1)

QC Batch: 88317
Prep Batch: 74984

Date Analyzed: 2012-02-03
QC Preparation: 2012-02-03

Analyzed By: tc
Prepared By: tc

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	17.2	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		2	18.4	mg/Kg	1	20.0	<1.22	92	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)	2.01	1.88	mg/Kg	1	2.00	100	94	80 - 111.2
4-Bromofluorobenzene (4-BFB)	1.82	2.01	mg/Kg	1	2.00	91	100	66.4 - 106.6

Laboratory Control Spike (LCS-1)

QC Batch: 88324
Prep Batch: 74990

Date Analyzed: 2012-02-06
QC Preparation: 2012-02-03

Analyzed By: CM
Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	211	mg/Kg	1	250	<17.1	84	75.6 - 120

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	217	mg/Kg	1	250	<17.1	87	75.6 - 120	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	99.7	102	mg/Kg	1	100	100	102	61.5 - 159

Matrix Spike (MS-1) Spiked Sample: 287908

QC Batch: 88262
Prep Batch: 74935

Date Analyzed: 2012-02-02
QC Preparation: 2012-02-02

Analyzed By: tc
Prepared By: tc

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matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	2	46.4	mg/Kg	1	20.0	7.1711	196 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	Qs	Qs	2	47.2	mg/Kg	1	20.0	7.1711	200 61.8 - 114	2	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)	2.03	2.02	mg/Kg	1	2	102	101	29.4 - 161.7
4-Bromofluorobenzene (4-BFB)	2.43	2.47	mg/Kg	1	2	122	124	37.3 - 162

Matrix Spike (MS-1) Spiked Sample: 287907

QC Batch: 88263
Prep Batch: 74935

Date Analyzed: 2012-02-02
QC Preparation: 2012-02-02

Analyzed By: tc
Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	2.03	mg/Kg	1	2.00	<0.0118	102	69.4 - 123.6
Toluene		2	1.96	mg/Kg	1	2.00	<0.00600	98	75.4 - 134.3
Ethylbenzene		2	2.02	mg/Kg	1	2.00	<0.00850	101	58.8 - 133.7
Xylene		2	6.02	mg/Kg	1	6.00	<0.00613	100	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		2	2.03	mg/Kg	1	2.00	<0.0118	102	69.4 - 123.6	0	20
Toluene		2	2.02	mg/Kg	1	2.00	<0.00600	101	75.4 - 134.3	3	20
Ethylbenzene		2	2.03	mg/Kg	1	2.00	<0.00850	102	58.8 - 133.7	0	20
Xylene		2	6.08	mg/Kg	1	6.00	<0.00613	101	57 - 134.2	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)	2.09	2.01	mg/Kg	1	2	104	100	79.4 - 141.1
4-Bromofluorobenzene (4-BFB)	2.07	2.04	mg/Kg	1	2	104	102	71 - 167

Report Date: February 8, 2012
114-6401037

Work Order: 12013119
COG/Moe Federal Tank Battery

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Matrix Spike (MS-1) Spiked Sample: 288061

QC Batch: 88313
Prep Batch: 74984

Date Analyzed: 2012-02-03
QC Preparation: 2012-02-03

Analyzed By: tc
Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	2.38	mg/Kg	1	2.00	<0.00470	119	69.3 - 159.2
Toluene		2	2.40	mg/Kg	1	2.00	<0.00980	120	68.7 - 157
Ethylbenzene		2	2.48	mg/Kg	1	2.00	<0.00500	124	71.6 - 158.2
Xylene		2	7.41	mg/Kg	1	6.00	<0.0170	124	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		2	2.43	mg/Kg	1	2.00	<0.00470	122	69.3 - 159.2	2	20
Toluene		2	2.45	mg/Kg	1	2.00	<0.00980	122	68.7 - 157	2	20
Ethylbenzene		2	2.55	mg/Kg	1	2.00	<0.00500	128	71.6 - 158.2	3	20
Xylene		2	7.63	mg/Kg	1	6.00	<0.0170	127	70.8 - 159.8	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.11	2.10	mg/Kg	1	2	106	105	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	2.03	2.04	mg/Kg	1	2	102	102	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 287470

QC Batch: 88317
Prep Batch: 74984

Date Analyzed: 2012-02-03
QC Preparation: 2012-02-03

Analyzed By: tc
Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	20.5	mg/Kg	1	20.0	2.2214	91	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		2	19.6	mg/Kg	1	20.0	2.2214	87	28.2 - 157.2	4	20

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

continued ...

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matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.95	2.05	mg/Kg	1	2	98	102	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	2.27	2.40	mg/Kg	1	2	114	120	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 287884

QC Batch: 88324
Prep Batch: 74990

Date Analyzed: 2012-02-06
QC Preparation: 2012-02-03

Analyzed By: CM
Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	298	mg/Kg	1	250	<17.1	119	58 - 129

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	306	mg/Kg	1	250	<17.1	122	58 - 129	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	99.3	98.5	mg/Kg	1	100	99	98	61.5 - 159

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114-6401037

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COG/Moe Federal Tank Battery

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Calibration Standards

Standard (CCV-2)

QC Batch: 88262

Date Analyzed: 2012-02-02

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.11	111	80 - 120	2012-02-02

Standard (CCV-3)

QC Batch: 88262

Date Analyzed: 2012-02-02

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.07	107	80 - 120	2012-02-02

Standard (CCV-2)

QC Batch: 88263

Date Analyzed: 2012-02-02

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/Kg	0.100	0.0992	99	80 - 120	2012-02-02
Toluene		2	mg/Kg	0.100	0.0956	96	80 - 120	2012-02-02
Ethylbenzene		2	mg/Kg	0.100	0.0903	90	80 - 120	2012-02-02
Xylene		2	mg/Kg	0.300	0.270	90	80 - 120	2012-02-02

Standard (CCV-3)

QC Batch: 88263

Date Analyzed: 2012-02-02

Analyzed By: tc

Report Date: February 8, 2012
114-6401037

Work Order: 12013119
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Lea County, NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/Kg	0.100	0.102	102	80 - 120	2012-02-02
Toluene		2	mg/Kg	0.100	0.0987	99	80 - 120	2012-02-02
Ethylbenzene		2	mg/Kg	0.100	0.0933	93	80 - 120	2012-02-02
Xylene		2	mg/Kg	0.300	0.279	93	80 - 120	2012-02-02

Standard (CCV-1)

QC Batch: 88313

Date Analyzed: 2012-02-03

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/Kg	0.100	0.0912	91	80 - 120	2012-02-03
Toluene		2	mg/Kg	0.100	0.0877	88	80 - 120	2012-02-03
Ethylbenzene		2	mg/Kg	0.100	0.0857	86	80 - 120	2012-02-03
Xylene		2	mg/Kg	0.300	0.256	85	80 - 120	2012-02-03

Standard (CCV-2)

QC Batch: 88313

Date Analyzed: 2012-02-03

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/Kg	0.100	0.105	105	80 - 120	2012-02-03
Toluene		2	mg/Kg	0.100	0.102	102	80 - 120	2012-02-03
Ethylbenzene		2	mg/Kg	0.100	0.0985	98	80 - 120	2012-02-03
Xylene		2	mg/Kg	0.300	0.293	98	80 - 120	2012-02-03

Standard (CCV-1)

QC Batch: 88317

Date Analyzed: 2012-02-03

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.05	105	80 - 120	2012-02-03

Report Date: February 8, 2012
114-6401037

Work Order: 12013119
COG/Moe Federal Tank Battery

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Lea County, NM

Standard (CCV-2)

QC Batch: 88317

Date Analyzed: 2012-02-03

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.11	111	80 - 120	2012-02-03

Standard (CCV-2)

QC Batch: 88324

Date Analyzed: 2012-02-06

Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	216	86	80 - 120	2012-02-06

Standard (CCV-3)

QC Batch: 88324

Date Analyzed: 2012-02-06

Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	211	84	80 - 120	2012-02-06

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-11-5	Lubbock
2	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 than 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.

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: <u>606</u>		SITE MANAGER: <u>TKC Turner</u>	
PROJECT NO.: <u>114-6440037</u>		PROJECT NAME: <u>016 / Ave 1st Rd T-3</u>	
LAB I.D. NUMBER		SAMPLE IDENTIFICATION	
DATE	TIME	MATRIX	GRAB
30.2			
1/26		S	X
1/26		S	X
1/26		S	X

NUMBER OF CONTAINERS	1 (AD 1)	3 (AD 2)	1 (AD 3)
HCL			
HNO3	X	X	X
ICE			
NONE			

PAH 8270	TCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCRP Metals Ag As Ba Cd Vr Pd Hg Se	TCRP Volatiles	TCRP 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
TPH 8015 MOD. TX1005 (Ext. to C35)														
BTEX 8021B														

RELINQUISHED BY: (Signature)	Date: <u>1/27/12</u>	RECEIVED BY: (Signature)	Date: <u>1/27/12</u>
RELINQUISHED BY: (Signature)	Date: <u>1/27/12</u>	RECEIVED BY: (Signature)	Date: <u>1/27/12</u>
RELINQUISHED BY: (Signature)	Date: <u>1/27/12</u>	RECEIVED BY: (Signature)	Date: <u>1/27/12</u>
RECEIVING LABORATORY: <u>Tetra Tech</u>	STATE: <u>TX</u>	ZIP: <u>79705</u>	PHONE: <u>(432) 682-4559</u>
CITY: <u>Midland</u>	REMARKS: <u>Added - BTEX / TPH / PCB's / Lead / Cadmium</u>		
SAMPLE CONDITION WHEN RECEIVED: <u>in intact</u>			

RELINQUISHED BY: (Signature)	Date: <u>1/27/12</u>	RECEIVED BY: (Signature)	Date: <u>1/27/12</u>
RELINQUISHED BY: (Signature)	Date: <u>1/27/12</u>	RECEIVED BY: (Signature)	Date: <u>1/27/12</u>
RELINQUISHED BY: (Signature)	Date: <u>1/27/12</u>	RECEIVED BY: (Signature)	Date: <u>1/27/12</u>
RECEIVING LABORATORY: <u>Tetra Tech</u>	STATE: <u>TX</u>	ZIP: <u>79705</u>	PHONE: <u>(432) 682-4559</u>
CITY: <u>Midland</u>	REMARKS: <u>Added - BTEX / TPH / PCB's / Lead / Cadmium</u>		
SAMPLE CONDITION WHEN RECEIVED: <u>in intact</u>			

RELINQUISHED BY: (Signature)	Date: <u>1/27/12</u>	RECEIVED BY: (Signature)	Date: <u>1/27/12</u>
RELINQUISHED BY: (Signature)	Date: <u>1/27/12</u>	RECEIVED BY: (Signature)	Date: <u>1/27/12</u>
RELINQUISHED BY: (Signature)	Date: <u>1/27/12</u>	RECEIVED BY: (Signature)	Date: <u>1/27/12</u>
RECEIVING LABORATORY: <u>Tetra Tech</u>	STATE: <u>TX</u>	ZIP: <u>79705</u>	PHONE: <u>(432) 682-4559</u>
CITY: <u>Midland</u>	REMARKS: <u>Added - BTEX / TPH / PCB's / Lead / Cadmium</u>		
SAMPLE CONDITION WHEN RECEIVED: <u>in intact</u>			

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

PAGE: , OF:

ANALYSIS REQUEST
(Circle or Specify Method No.)

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

[illegible]

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:
Added - BTEx/Gr⁺ - Subacid - TP4-120

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

Summary Report

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

Report Date: November 15, 2011

Work Order: 11110414



Project Location: Lea County, NM
Project Name: Moe Federal Tank Battery
Project Number: 114-6401037

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
281568	AH-1 0-1'	soil	2011-11-02	00:00	2011-11-03
281569	AH-1 1-1.5'	soil	2011-11-02	00:00	2011-11-03
281570	AH-1 2-2.5'	soil	2011-11-02	00:00	2011-11-03
281571	AH-2 0-1'	soil	2011-11-02	00:00	2011-11-03
281572	AH-2 1-1.5'	soil	2011-11-02	00:00	2011-11-03
281573	AH-2 2-2.5'	soil	2011-11-02	00:00	2011-11-03
281574	AH-2 3-3.5'	soil	2011-11-02	00:00	2011-11-03
281578	AH-3 0-1'	soil	2011-11-02	00:00	2011-11-03
281579	AH-3 1-1.5'	soil	2011-11-02	00:00	2011-11-03
281580	AH-3 2-2.5'	soil	2011-11-02	00:00	2011-11-03
281581	AH-3 3-3.5'	soil	2011-11-02	00:00	2011-11-03
281582	AH-3 4-4.5'	soil	2011-11-02	00:00	2011-11-03

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
281568 - AH-1 0-1'	2.94 Qr	32.6 Qr	31.8 Qr	92.0 Qr	8070	3320
281569 - AH-1 1-1.5'	<0.0200	<0.0200	0.152	0.622	367	34.1
281571 - AH-2 0-1'	33.0 Qr	170 Qr	86.3 Qr	156 Qr	6510	5510
281572 - AH-2 1-1.5'	26.0	139	68.9	122	6140	4320
281573 - AH-2 2-2.5'	1.26 Qr	30.5 Qr	23.5 Qr	51.8 Qr	2400	1890
281574 - AH-2 3-3.5'	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs		
281578 - AH-3 0-1'	1.51 Qr	28.4 Qr	25.1 Qr	62.6 Qr	2950	2260
281579 - AH-3 1-1.5'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	2.72

Sample: 281568 - AH-1 0-1'

continued ...

sample 281568 continued ...

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

Sample: 281569 - AH-1 1-1.5'

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

Sample: 281570 - AH-1 2-2.5'

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

Sample: 281571 - AH-2 0-1'

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

Sample: 281572 - AH-2 1-1.5'

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

Sample: 281573 - AH-2 2-2.5'

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

Sample: 281574 - AH-2 3-3.5'

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

Sample: 281578 - AH-3 0-1'

Report Date: November 15, 2011

Work Order: 11110414

Page Number: 3 of 3

Param	Flag	Result	Units	RL
Chloride		773	mg/Kg	4

Sample: 281579 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		820	mg/Kg	4

Sample: 281580 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		788	mg/Kg	4

Sample: 281581 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		394	mg/Kg	4

Sample: 281582 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		240	mg/Kg	4



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: 11110414



Project Location: Lea County, NM
Project Name: Moe Federal Tank Battery
Project Number: 114-6401037

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
281568	AH-1 0-1'	soil	2011-11-02	00:00	2011-11-03
281569	AH-1 1-1.5'	soil	2011-11-02	00:00	2011-11-03
281570	AH-1 2-2.5'	soil	2011-11-02	00:00	2011-11-03
281571	AH-2 0-1'	soil	2011-11-02	00:00	2011-11-03
281572	AH-2 1-1.5'	soil	2011-11-02	00:00	2011-11-03
281573	AH-2 2-2.5'	soil	2011-11-02	00:00	2011-11-03
281574	AH-2 3-3.5'	soil	2011-11-02	00:00	2011-11-03
281578	AH-3 0-1'	soil	2011-11-02	00:00	2011-11-03
281579	AH-3 1-1.5'	soil	2011-11-02	00:00	2011-11-03
281580	AH-3 2-2.5'	soil	2011-11-02	00:00	2011-11-03
281581	AH-3 3-3.5'	soil	2011-11-02	00:00	2011-11-03
281582	AH-3 4-4.5'	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 46 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael Abel

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

Case Narrative

Samples for project Moe Federal Tank Battery were received by TraceAnalysis, Inc. on 2011-11-03 and assigned to work order 11110414. Samples for work order 11110414 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
BTEX	S 8021B	73217	2011-11-08 at 09:45	86281	2011-11-09 at 13:49
BTEX	S 8021B	73286	2011-11-10 at 13:55	86315	2011-11-10 at 15:39
BTEX	S 8021B	73337	2011-11-11 at 11:35	86360	2011-11-11 at 12:15
Chloride (Titration)	SM 4500-Cl B	73222	2011-11-07 at 09:37	86237	2011-11-09 at 11:01
Chloride (Titration)	SM 4500-Cl B	73222	2011-11-07 at 09:37	86238	2011-11-09 at 11:02
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 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

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 11110414 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.

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Analytical Report

Sample: 281568 - AH-1 0-1'

Laboratory: Midland

Analysis: BTEX

QC Batch: 86134

Prep Batch: 73143

Analytical Method: S 8021B

Date Analyzed: 2011-11-05

Sample Preparation: 2011-11-04

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

				RL			
Parameter		Flag	Cert	Result	Units	Dilution	RL
Benzene	Qr	Qr	1	2.94	mg/Kg	50	0.0200
Toluene	Qr	Qr	1	32.6	mg/Kg	50	0.0200
Ethylbenzene	Qr	Qr	1	31.8	mg/Kg	50	0.0200
Xylene	Qr	Qr	1	92.0	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			49.3	mg/Kg	50	50.0	99	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			59.9	mg/Kg	50	50.0	120	70.6 - 179

Sample: 281568 - AH-1 0-1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 86237

Prep Batch: 73222

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-11-09

Sample Preparation: 2011-11-07

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

Sample: 281568 - AH-1 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 86234

Prep Batch: 73224

Analytical Method: S 8015 D

Date Analyzed: 2011-11-08

Sample Preparation: 2011-11-08

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	8070	mg/Kg	5	50.0

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	500	mg/Kg	5	100	500	67.5 - 147.1

Sample: 281568 - AH-1 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 86135
Prep Batch: 73143

Analytical Method: S 8015 D
Date Analyzed: 2011-11-05
Sample Preparation: 2011-11-04

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	3320	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			49.1	mg/Kg	50	50.0	98	30 - 134.6
4-Bromofluorobenzene (4-BFB)			66.4	mg/Kg	50	50.0	133	22.4 - 149

Sample: 281569 - AH-1 1-1.5'

Laboratory: Midland
Analysis: BTEX
QC Batch: 86281
Prep Batch: 73217

Analytical Method: S 8021B
Date Analyzed: 2011-11-09
Sample Preparation: 2011-11-09

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

Parameter		Flag	Cert	RL			
				Result	Units	Dilution	RL
Benzene	U	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene			1	0.152	mg/Kg	1	0.0200
Xylene			1	0.622	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			2.11	mg/Kg	1	2.00	106	70.6 - 179

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Sample: 281569 - AH-1 1-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2011-11-09	Analyzed By:	AR
QC Batch:	86237	Sample Preparation:	2011-11-07	Prepared By:	AR
Prep Batch:	73222				

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

Sample: 281569 - AH-1 1-1.5'

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	367	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	67.5 - 147.1

Sample: 281569 - AH-1 1-1.5'

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	34.1	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.95	mg/Kg	1	2.00	98	30 - 134.6
4-Bromofluorobenzene (4-BFB)			1.41	mg/Kg	1	2.00	70	22.4 - 149

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Sample: 281570 - AH-1 2-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 86238
Prep Batch: 73222

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-11-09
Sample Preparation: 2011-11-07

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

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

Sample: 281571 - AH-2 0-1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 86134
Prep Batch: 73143

Analytical Method: S 8021B
Date Analyzed: 2011-11-05
Sample Preparation: 2011-11-04

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	Qr	1 33.0	mg/Kg	50	0.0200
Toluene	Qr	Qr	1 170	mg/Kg	50	0.0200
Ethylbenzene	Qr	Qr	1 86.3	mg/Kg	50	0.0200
Xylene	Qr	Qr	1 156	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			48.0	mg/Kg	50	50.0	96	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			66.3	mg/Kg	50	50.0	133	70.6 - 179

Sample: 281571 - AH-2 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 86238
Prep Batch: 73222

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-11-09
Sample Preparation: 2011-11-07

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

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

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Sample: 281571 - AH-2 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 86234

Prep Batch: 73224

Analytical Method: S 8015 D

Date Analyzed: 2011-11-08

Sample Preparation: 2011-11-08

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	6510	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	468	mg/Kg	5	100	468	67.5 - 147.1

Sample: 281571 - AH-2 0-1'

Laboratory: Midland

Analysis: TPH GRO

QC Batch: 86282

Prep Batch: 73217

Analytical Method: S 8015 D

Date Analyzed: 2011-11-09

Sample Preparation: 2011-11-09

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	5510	mg/Kg	200	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			193	mg/Kg	200	200	96	30 - 134.6
4-Bromofluorobenzene (4-BFB)			214	mg/Kg	200	200	107	22.4 - 149

Sample: 281572 - AH-2 1-1.5'

Laboratory: Midland

Analysis: BTEX

QC Batch: 86281

Prep Batch: 73217

Analytical Method: S 8021B

Date Analyzed: 2011-11-09

Sample Preparation: 2011-11-09

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	26.0	mg/Kg	50	0.0200
Toluene		1	139	mg/Kg	50	0.0200
Ethylbenzene		1	68.9	mg/Kg	50	0.0200
Xylene		1	122	mg/Kg	50	0.0200

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			48.8	mg/Kg	50	50.0	98	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			62.0	mg/Kg	50	50.0	124	70.6 - 179

Sample: 281572 - AH-2 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 86238

Prep Batch: 73222

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-11-09

Sample Preparation: 2011-11-07

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

Sample: 281572 - AH-2 1-1.5'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 86366

Prep Batch: 73341

Analytical Method: S 8015 D

Date Analyzed: 2011-11-11

Sample Preparation: 2011-11-11

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	6140	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	403	mg/Kg	1	100	403	67.5 - 147.1

Sample: 281572 - AH-2 1-1.5'

Laboratory: Midland

Analysis: TPH GRO

QC Batch: 86282

Prep Batch: 73217

Analytical Method: S 8015 D

Date Analyzed: 2011-11-09

Sample Preparation: 2011-11-09

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	4320	mg/Kg	50	2.00

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			47.8	mg/Kg	50	50.0	96	30 - 134.6
4-Bromofluorobenzene (4-BFB)			66.6	mg/Kg	50	50.0	133	22.4 - 149

Sample: 281573 - AH-2 2-2.5'

Laboratory: Midland

Analysis: BTEX

QC Batch: 86315

Prep Batch: 73286

Analytical Method: S 8021B

Date Analyzed: 2011-11-10

Sample Preparation: 2011-11-10

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

		RL					
Parameter		Flag	Cert	Result	Units	Dilution	RL
Benzene	Qr	Qr	1	1.26	mg/Kg	20	0.0200
Toluene	Qr	Qr	1	30.5	mg/Kg	20	0.0200
Ethylbenzene	Qr	Qr	1	23.5	mg/Kg	20	0.0200
Xylene	Qr	Qr	1	51.8	mg/Kg	20	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			19.6	mg/Kg	20	20.0	98	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			26.2	mg/Kg	20	20.0	131	70.6 - 179

Sample: 281573 - AH-2 2-2.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 86238

Prep Batch: 73222

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-11-09

Sample Preparation: 2011-11-07

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

Sample: 281573 - AH-2 2-2.5'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 86366

Prep Batch: 73341

Analytical Method: S 8015 D

Date Analyzed: 2011-11-11

Sample Preparation: 2011-11-11

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	2400	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	67.5 - 147.1

Sample: 281573 - AH-2 2-2.5'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 86316
Prep Batch: 73286

Analytical Method: S 8015 D
Date Analyzed: 2011-11-10
Sample Preparation: 2011-11-10

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	1890	mg/Kg	20	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			19.6	mg/Kg	20	20.0	98	30 - 134.6
4-Bromofluorobenzene (4-BFB)			28.7	mg/Kg	20	20.0	144	22.4 - 149

Sample: 281574 - AH-2 3-3.5'

Laboratory: Midland
Analysis: BTEX
QC Batch: 86360
Prep Batch: 73337

Analytical Method: S 8021B
Date Analyzed: 2011-11-11
Sample Preparation: 2011-11-11

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	1	2.00	96	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	70.6 - 179

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Sample: 281574 - AH-2 3-3.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 86238

Prep Batch: 73222

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-11-09

Sample Preparation: 2011-11-07

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

Sample: 281578 - AH-3 0-1'

Laboratory: Midland

Analysis: BTEX

QC Batch: 86134

Prep Batch: 73143

Analytical Method: S 8021B

Date Analyzed: 2011-11-05

Sample Preparation: 2011-11-04

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	Qr	1	1.51 mg/Kg	50	0.0200
Toluene	Qr	Qr	1	28.4 mg/Kg	50	0.0200
Ethylbenzene	Qr	Qr	1	25.1 mg/Kg	50	0.0200
Xylene	Qr	Qr	1	62.6 mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			49.2	mg/Kg	50	50.0	98	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			56.3	mg/Kg	50	50.0	113	70.6 - 179

Sample: 281578 - AH-3 0-1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 86238

Prep Batch: 73222

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-11-09

Sample Preparation: 2011-11-07

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			773	mg/Kg	50	4.00

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Sample: 281578 - AH-3 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 86138
Prep Batch: 73148

Analytical Method: S 8015 D
Date Analyzed: 2011-11-04
Sample Preparation: 2011-11-04

Prep Method: N/A
Analyzed By: kg
Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	2950	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	223	mg/Kg	1	100	223	67.5 - 147.1

Sample: 281578 - AH-3 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 86135
Prep Batch: 73143

Analytical Method: S 8015 D
Date Analyzed: 2011-11-05
Sample Preparation: 2011-11-04

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	2260	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			49.4	mg/Kg	50	50.0	99	30 - 134.6
4-Bromofluorobenzene (4-BFB)			59.4	mg/Kg	50	50.0	119	22.4 - 149

Sample: 281579 - AH-3 1-1.5'

Laboratory: Midland
Analysis: BTEX
QC Batch: 86281
Prep Batch: 73217

Analytical Method: S 8021B
Date Analyzed: 2011-11-09
Sample Preparation: 2011-11-09

Prep Method: S 5035
Analyzed By: AG
Prepared By: AG

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

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.01	mg/Kg	1	2.00	100	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	70.6 - 179

Sample: 281579 - AH-3 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 86238

Prep Batch: 73222

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-11-09

Sample Preparation: 2011-11-07

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			820	mg/Kg	100	4.00

Sample: 281579 - AH-3 1-1.5'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 86234

Prep Batch: 73224

Analytical Method: S 8015 D

Date Analyzed: 2011-11-08

Sample Preparation: 2011-11-08

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			105	mg/Kg	1	100	105	67.5 - 147.1

Sample: 281579 - AH-3 1-1.5'

Laboratory: Midland

Analysis: TPH GRO

QC Batch: 86282

Prep Batch: 73217

Analytical Method: S 8015 D

Date Analyzed: 2011-11-09

Sample Preparation: 2011-11-09

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	2.72	mg/Kg	1	2.00

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.95	mg/Kg	1	2.00	98	30 - 134.6
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	22.4 - 149

Sample: 281580 - AH-3 2-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 86238
Prep Batch: 73222

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-11-09
Sample Preparation: 2011-11-07

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			788	mg/Kg	100	4.00

Sample: 281581 - AH-3 3-3.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 86238
Prep Batch: 73222

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-11-09
Sample Preparation: 2011-11-07

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			394	mg/Kg	50	4.00

Sample: 281582 - AH-3 4-4.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 86238
Prep Batch: 73222

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-11-09
Sample Preparation: 2011-11-07

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			240	mg/Kg	50	4.00

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Method Blanks

Method Blank (1) QC Batch: 86134

QC Batch: 86134
Prep Batch: 73143

Date Analyzed: 2011-11-05
QC Preparation: 2011-11-04

Analyzed By: AG
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
Prep Batch: 73143

Date Analyzed: 2011-11-05
QC Preparation: 2011-11-04

Analyzed By: AG
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
Prep Batch: 73148

Date Analyzed: 2011-11-04
QC Preparation: 2011-11-04

Analyzed By: kg
Prepared By: kg

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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
Prep Batch: 73224

Date Analyzed: 2011-11-08
QC Preparation: 2011-11-08

Analyzed By: kg
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: 86237

QC Batch: 86237
Prep Batch: 73222

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-07

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 86238

QC Batch: 86238
Prep Batch: 73222

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-07

Analyzed By: AR
Prepared By: AR

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

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Method Blank (1) QC Batch: 86281

QC Batch: 86281
Prep Batch: 73217

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-08

Analyzed By: AG
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)			1.94	mg/Kg	1	2.00	97	65.9 - 111.8
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	48.4 - 123.1

Method Blank (1) QC Batch: 86282

QC Batch: 86282
Prep Batch: 73217

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-08

Analyzed By: AG
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
Prep Batch: 73262

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-09

Analyzed By: kg
Prepared By: kg

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

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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: 86315

QC Batch: 86315
Prep Batch: 73286

Date Analyzed: 2011-11-10
QC Preparation: 2011-11-10

Analyzed By: AG
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)			1.97	mg/Kg	1	2.00	98	65.9 - 111.8
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	48.4 - 123.1

Method Blank (1) QC Batch: 86316

QC Batch: 86316
Prep Batch: 73286

Date Analyzed: 2011-11-10
QC Preparation: 2011-11-10

Analyzed By: AG
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: 86360

QC Batch: 86360
Prep Batch: 73337

Date Analyzed: 2011-11-11
QC Preparation: 2011-11-11

Analyzed By: AG
Prepared By: AG

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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)			1.89	mg/Kg	1	2.00	94	65.9 - 111.8
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	48.4 - 123.1

Method Blank (1) QC Batch: 86366

QC Batch: 86366
Prep Batch: 73341

Date Analyzed: 2011-11-11
QC Preparation: 2011-11-11

Analyzed By: kg
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

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 86134
Prep Batch: 73143

Date Analyzed: 2011-11-05
QC Preparation: 2011-11-04

Analyzed By: AG
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
Prep Batch: 73143

Date Analyzed: 2011-11-05
QC Preparation: 2011-11-04

Analyzed By: AG
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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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
Prep Batch: 73148

Date Analyzed: 2011-11-04
QC Preparation: 2011-11-04

Analyzed By: kg
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
Prep Batch: 73224

Date Analyzed: 2011-11-08
QC Preparation: 2011-11-08

Analyzed By: kg
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

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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: 86237
Prep Batch: 73222

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-07

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			99.4	mg/Kg	1	100	<3.85	99	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	6	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 86238
Prep Batch: 73222

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-07

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			98.2	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.

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Laboratory Control Spike (LCS-1)

QC Batch: 86281
Prep Batch: 73217

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-08

Analyzed By: AG
Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.98	mg/Kg	1	2.00	<0.0118	99	77.4 - 121.7
Toluene		1	1.97	mg/Kg	1	2.00	<0.00600	98	88.6 - 121.6
Ethylbenzene		1	1.94	mg/Kg	1	2.00	<0.00850	97	74.3 - 117.9
Xylene		1	5.85	mg/Kg	1	6.00	<0.00613	98	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	1.99	mg/Kg	1	2.00	<0.0118	100	77.4 - 121.7	0	20
Toluene		1	1.95	mg/Kg	1	2.00	<0.00600	98	88.6 - 121.6	1	20
Ethylbenzene		1	1.89	mg/Kg	1	2.00	<0.00850	94	74.3 - 117.9	3	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)	1.93	1.95	mg/Kg	1	2.00	96	98	65.5 - 116.7
4-Bromofluorobenzene (4-BFB)	1.97	2.01	mg/Kg	1	2.00	98	100	56.2 - 132.1

Laboratory Control Spike (LCS-1)

QC Batch: 86282
Prep Batch: 73217

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-08

Analyzed By: AG
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.

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
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
Prep Batch: 73262

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-09

Analyzed By: kg
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: 86315
Prep Batch: 73286

Date Analyzed: 2011-11-10
QC Preparation: 2011-11-10

Analyzed By: AG
Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.91	mg/Kg	1	2.00	<0.0118	96	77.4 - 121.7
Toluene		1	1.92	mg/Kg	1	2.00	<0.00600	96	88.6 - 121.6
Ethylbenzene		1	1.92	mg/Kg	1	2.00	<0.00850	96	74.3 - 117.9
Xylene		1	5.85	mg/Kg	1	6.00	<0.00613	98	73.4 - 118.8

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

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.02	mg/Kg	1	2.00	<0.0118	101	77.4 - 121.7	6	20
Toluene		1	2.03	mg/Kg	1	2.00	<0.00600	102	88.6 - 121.6	6	20
Ethylbenzene		1	1.99	mg/Kg	1	2.00	<0.00850	100	74.3 - 117.9	4	20
Xylene		1	6.06	mg/Kg	1	6.00	<0.00613	101	73.4 - 118.8	4	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.88	1.94	mg/Kg	1	2.00	94	97	65.5 - 116.7
4-Bromofluorobenzene (4-BFB)	2.02	2.10	mg/Kg	1	2.00	101	105	56.2 - 132.1

Laboratory Control Spike (LCS-1)

QC Batch: 86316
Prep Batch: 73286

Date Analyzed: 2011-11-10
QC Preparation: 2011-11-10

Analyzed By: AG
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	LCS 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.

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS 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: 86360
Prep Batch: 73337

Date Analyzed: 2011-11-11
QC Preparation: 2011-11-11

Analyzed By: AG
Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.08	mg/Kg	1	2.00	<0.0118	104	77.4 - 121.7

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Toluene		1	1.98	mg/Kg	1	2.00	<0.00600	99	88.6 - 121.6
Ethylbenzene		1	1.90	mg/Kg	1	2.00	<0.00850	95	74.3 - 117.9
Xylene		1	5.78	mg/Kg	1	6.00	<0.00613	96	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	2.10	mg/Kg	1	2.00	<0.0118	105	77.4 - 121.7	1	20
Toluene		1	2.04	mg/Kg	1	2.00	<0.00600	102	88.6 - 121.6	3	20
Ethylbenzene		1	1.95	mg/Kg	1	2.00	<0.00850	98	74.3 - 117.9	3	20
Xylene		1	5.93	mg/Kg	1	6.00	<0.00613	99	73.4 - 118.8	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.89	1.92	mg/Kg	1	2.00	94	96	65.5 - 116.7
4-Bromofluorobenzene (4-BFB)	1.98	2.01	mg/Kg	1	2.00	99	100	56.2 - 132.1

Laboratory Control Spike (LCS-1)

QC Batch: 86366
Prep Batch: 73341

Date Analyzed: 2011-11-11
QC Preparation: 2011-11-11

Analyzed By: kg
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.

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

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Matrix Spike (MS-1) Spiked Sample: 281552

QC Batch: 86134
Prep Batch: 73143

Date Analyzed: 2011-11-05
QC Preparation: 2011-11-04

Analyzed By: AG
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
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		Dil.	Spike Amount	Matrix Result	Rec.	Rec.		RPD	
			Result	Units					Limit	RPD	Limit	
Benzene	Q _r	Q _r	1	1.72	mg/Kg	1	2.00	<0.0118	86	69.4 - 123.6	26	20
Toluene	Q _r	Q _r	1	1.70	mg/Kg	1	2.00	<0.00600	85	75.4 - 134.3	27	20
Ethylbenzene	Q _r	Q _r	1	1.76	mg/Kg	1	2.00	<0.00850	88	58.8 - 133.7	27	20
Xylene	Q _r	Q _r	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
Prep Batch: 73143

Date Analyzed: 2011-11-05
QC Preparation: 2011-11-04

Analyzed By: AG
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.

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.95	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
Prep Batch: 73148

Date Analyzed: 2011-11-04
QC Preparation: 2011-11-04

Analyzed By: kg
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
Prep Batch: 73224

Date Analyzed: 2011-11-08
QC Preparation: 2011-11-08

Analyzed By: kg
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

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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: 281569

QC Batch: 86237
Prep Batch: 73222

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-07

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10200	mg/Kg	100	10000	<385	102	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			10400	mg/Kg	100	10000	<385	104	79.4 - 120.6	2	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: 281582

QC Batch: 86238
Prep Batch: 73222

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-07

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10800	mg/Kg	100	10000	<385	106	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			11400	mg/Kg	100	10000	<385	112	79.4 - 120.6	5	20

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

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Matrix Spike (MS-1) Spiked Sample: 281797

QC Batch: 86281
Prep Batch: 73217

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-08

Analyzed By: AG
Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.00	mg/Kg	1	2.00	<0.0118	100	69.4 - 123.6
Toluene		1	2.05	mg/Kg	1	2.00	<0.00600	102	75.4 - 134.3
Ethylbenzene		1	2.07	mg/Kg	1	2.00	<0.00850	104	58.8 - 133.7
Xylene		1	6.22	mg/Kg	1	6.00	<0.00613	104	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		1	2.27	mg/Kg	1	2.00	<0.0118	114	69.4 - 123.6	13	20
Toluene		1	2.33	mg/Kg	1	2.00	<0.00600	116	75.4 - 134.3	13	20
Ethylbenzene		1	2.37	mg/Kg	1	2.00	<0.00850	118	58.8 - 133.7	14	20
Xylene		1	7.14	mg/Kg	1	6.00	<0.00613	119	57 - 134.2	14	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	1.98	mg/Kg	1	2	101	99	79.4 - 141.1
4-Bromofluorobenzene (4-BFB)	2.08	2.07	mg/Kg	1	2	104	104	71 - 167

Matrix Spike (MS-1) Spiked Sample: 281579

QC Batch: 86282
Prep Batch: 73217

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-08

Analyzed By: AG
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.

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.95	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
Prep Batch: 73262

Date Analyzed: 2011-11-09
QC Preparation: 2011-11-09

Analyzed By: kg
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: 282020

QC Batch: 86315
Prep Batch: 73286

Date Analyzed: 2011-11-10
QC Preparation: 2011-11-10

Analyzed By: AG
Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.40	mg/Kg	1	2.00	<0.0118	120	69.4 - 123.6
Toluene		1	2.50	mg/Kg	1	2.00	<0.00600	125	75.4 - 134.3
Ethylbenzene		1	2.57	mg/Kg	1	2.00	<0.00850	128	58.8 - 133.7
Xylene		1	7.77	mg/Kg	1	6.00	<0.00613	130	57 - 134.2

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

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Param	F	C	MSD		Dil.	Spike	Matrix	Rec.	Rec. Limit	RPD	RPD Limit	
			Result	Units		Amount	Result					
Benzene	Qr	Qr	1	1.85	mg/Kg	1	2.00	<0.0118	92	69.4 - 123.6	26	20
Toluene	Qr	Qr	1	1.95	mg/Kg	1	2.00	<0.00600	98	75.4 - 134.3	25	20
Ethylbenzene	Qr	Qr	1	2.01	mg/Kg	1	2.00	<0.00850	100	58.8 - 133.7	24	20
Xylene	Qr	Qr	1	6.10	mg/Kg	1	6.00	<0.00613	102	57 - 134.2	24	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	79.4 - 141.1
4-Bromofluorobenzene (4-BFB)	2.17	2.19	mg/Kg	1	2	108	110	71 - 167

Matrix Spike (MS-1) Spiked Sample: 282016

QC Batch: 86316
Prep Batch: 73286

Date Analyzed: 2011-11-10
QC Preparation: 2011-11-10

Analyzed By: AG
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: 86360
Prep Batch: 73337

Date Analyzed: 2011-11-11
QC Preparation: 2011-11-11

Analyzed By: AG
Prepared By: AG

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs	1	3.02	mg/Kg	1	2.00	<0.0118	151	69.4 - 123.6

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Toluene	Qs	Qs	1	2.97	mg/Kg	1	2.00	<0.00600	148 75.4 - 134.3
Ethylbenzene	Qs	Qs	1	2.92	mg/Kg	1	2.00	<0.00850	146 58.8 - 133.7
Xylene	Qs	Qs	1	8.88	mg/Kg	1	6.00	<0.00613	148 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	Qs	Qs	1	2.94	mg/Kg	1	2.00	<0.0118	147 69.4 - 123.6	3	20
Toluene	Qs	Qs	1	2.91	mg/Kg	1	2.00	<0.00600	146 75.4 - 134.3	2	20
Ethylbenzene	Qs	Qs	1	2.98	mg/Kg	1	2.00	<0.00850	149 58.8 - 133.7	2	20
Xylene	Qs	Qs	1	8.98	mg/Kg	1	6.00	<0.00613	150 57 - 134.2	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	1.93	mg/Kg	1	2	96	96	79.4 - 141.1
4-Bromofluorobenzene (4-BFB)	2.11	2.15	mg/Kg	1	2	106	108	71 - 167

Matrix Spike (MS-1) Spiked Sample: 282104

QC Batch: 86366
Prep Batch: 73341

Date Analyzed: 2011-11-11
QC Preparation: 2011-11-11

Analyzed By: kg
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

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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

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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-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: 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	231	92	80 - 120	2011-11-04

Standard (CCV-2)

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	253	101	80 - 120	2011-11-08

Standard (CCV-3)

QC Batch: 86234

Date Analyzed: 2011-11-08

Analyzed By: kg

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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: 86237

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	104	104	85 - 115	2011-11-09

Standard (CCV-1)

QC Batch: 86237

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	96.2	96	85 - 115	2011-11-09

Standard (ICV-1)

QC Batch: 86238

Date Analyzed: 2011-11-09

Analyzed By: AR

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Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	94.8	95	85 - 115	2011-11-09

Standard (CCV-1)

QC Batch: 86238

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	105	105	85 - 115	2011-11-09

Standard (CCV-1)

QC Batch: 86281

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
Benzene		1	mg/Kg	0.100	0.101	101	80 - 120	2011-11-09
Toluene		1	mg/Kg	0.100	0.0980	98	80 - 120	2011-11-09
Ethylbenzene		1	mg/Kg	0.100	0.0961	96	80 - 120	2011-11-09
Xylene		1	mg/Kg	0.300	0.292	97	80 - 120	2011-11-09

Standard (CCV-2)

QC Batch: 86281

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
Benzene		1	mg/Kg	0.100	0.100	100	80 - 120	2011-11-09
Toluene		1	mg/Kg	0.100	0.0981	98	80 - 120	2011-11-09
Ethylbenzene		1	mg/Kg	0.100	0.0965	96	80 - 120	2011-11-09
Xylene		1	mg/Kg	0.300	0.290	97	80 - 120	2011-11-09

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Standard (CCV-3)

QC Batch: 86281

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
Benzene		1	mg/Kg	0.100	0.0962	96	80 - 120	2011-11-09
Toluene		1	mg/Kg	0.100	0.0955	96	80 - 120	2011-11-09
Ethylbenzene		1	mg/Kg	0.100	0.0960	96	80 - 120	2011-11-09
Xylene		1	mg/Kg	0.300	0.287	96	80 - 120	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

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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: 86315

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
Benzene		1	mg/Kg	0.100	0.0966	97	80 - 120	2011-11-10
Toluene		1	mg/Kg	0.100	0.0988	99	80 - 120	2011-11-10
Ethylbenzene		1	mg/Kg	0.100	0.0986	99	80 - 120	2011-11-10
Xylene		1	mg/Kg	0.300	0.299	100	80 - 120	2011-11-10

Standard (CCV-2)

QC Batch: 86315

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
Benzene		1	mg/Kg	0.100	0.0940	94	80 - 120	2011-11-10
Toluene		1	mg/Kg	0.100	0.0944	94	80 - 120	2011-11-10
Ethylbenzene		1	mg/Kg	0.100	0.0924	92	80 - 120	2011-11-10
Xylene		1	mg/Kg	0.300	0.284	95	80 - 120	2011-11-10

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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: 86360

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
Benzene		1	mg/Kg	0.100	0.105	105	80 - 120	2011-11-11
Toluene		1	mg/Kg	0.100	0.0988	99	80 - 120	2011-11-11
Ethylbenzene		1	mg/Kg	0.100	0.0958	96	80 - 120	2011-11-11
Xylene		1	mg/Kg	0.300	0.292	97	80 - 120	2011-11-11

Standard (CCV-2)

QC Batch: 86360

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
Benzene		1	mg/Kg	0.100	0.102	102	80 - 120	2011-11-11
Toluene		1	mg/Kg	0.100	0.0983	98	80 - 120	2011-11-11
Ethylbenzene		1	mg/Kg	0.100	0.0936	94	80 - 120	2011-11-11
Xylene		1	mg/Kg	0.300	0.284	95	80 - 120	2011-11-11

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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

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 than 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.

W0# 111104 14

Analysis Request of Chain of Custody Record

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ANALYSIS REQUEST
(Circle or Specify Method No.)



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

CLIENT NAME: COG		SITE MANAGER: FKE TAVAREZ	
PROJECT NO.: 114-6401037		PROJECT NAME: MOE FEDERAL TANK BATTERY	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
2011	11-2		
281568			Y AH-1 0-1'
581			Y AH-1 1-1.5'
570			Y AH-1 2-2.5'
571			Y AH-2 0-1'
572			Y AH-2 1-1.5'
573			Y AH-2 2-2.5'
574			Y AH-2 3-3.5'
575			Y AH-2 4-4.5'
576			Y AH-2 5-5.5'
577			Y AH-2 6-6.5'

RELINQUISHED BY: (Signature)	Date: 11-3-11	RECEIVED BY: (Signature)	Date: 11-3-11
RELINQUISHED BY: (Signature)	Date: 11-3-11	RECEIVED BY: (Signature)	Date: 11-3-11
RELINQUISHED BY: (Signature)	Date: 11-3-11	RECEIVED BY: (Signature)	Date: 11-3-11

RECEIVING LABORATORY: **TRACE**
ADDRESS: **MIPLA20** STATE: **TX** ZIP: **79705**
CONTACT: **PHONE: 432-682-4559**

REMARKS:
4.30 initial
Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.
Run deeper samples if TPH exceed 500 mg/kg ;
Run deeper samples if benzene exceed 10 mg/kg or total BTEX exceed 50 mg/kg.

NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb 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
BTEX 8021B																	
TPH 8015 MOD																	
TX1005 (Ext. to C35)																	

DATE: 11-3-11
TIME: 10:50
AIRBILL #:
OTHER:
RESULTS BY:
RUSH CHARGES AUTHORIZED:
Yes No

11110414

Analysis Request of Chain of Custody Record

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TETRA TECH

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

CLIENT NAME: Coq		SITE MANAGER: IKÉ TAVERA	
PROJECT NO.: 111-6401037		PROJECT NAME: MOE FEDERAL TANK BATTERY	
LAB. ID. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
281578	2-11	11-2-11	LEA COWAN, M.M.
579			0-1'
580			1-1.5
581			2-2.5
582			3-3.5
583			4-4.5
584			5-5.5
			AH-1 3-3.5

MATRIX	COMP	GRAB	NUMBER OF CONTAINERS	PREPARED (Y/N)	PRESERVATIVE METHOD
					HCL
					HN03
					ICE
					NONE

STEX 8021B	TX1005 (EXT. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC, MS Vol. 8240/8260/824	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

RELINQUISHED BY: (Signature)	Date: 11-2-11	RECEIVED BY: (Signature)	Date: 11-2-11
RELINQUISHED BY: (Signature)	Date: 11-2-11	RECEIVED BY: (Signature)	Date: 11-2-11
RELINQUISHED BY: (Signature)	Date: 11-2-11	RECEIVED BY: (Signature)	Date: 11-2-11
RECEIVING LABORATORY: TRACE	STATE: TX	ZIP: 79705	DATE: 11-2-11 TIME: 16:50
CITY: MIDLAND	REMARKS:		
CONTACT: 4.3°C in lab	SAMPLE CONDITION WHEN RECEIVED:		

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