

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Chicken Hawk State #1 Tank Battery		
Company:	COG Operating LLC		
Section, Township and Range	Unit A	Section 15	T-25S R-28E
Lease Number:	30-015-33682		
County:	Eddy County		
GPS:	32.13693° N		104.06772° W
Surface Owner:	State		
Mineral Owner:			
Directions:	From the Malaga post office, travel south on 285 6.7 miles, left on lease road, travel 0.8 miles to tank battery.		

Release Data:

Date Released:	7/8/2011	RECEIVED MAY 21 2012 NMOCD ARTESIA	
Type Release:	Produced Water		
Source of Contamination:	Tank Over flow		
Fluid Released:	480 bbls		
Fluids Recovered:	460 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.Tavaréz@tetrattech.com

Ranking Criteria

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

Acceptable Soil RRAL (mg/kg)

Benzene	Total BTEX	TPH
10	50	100



TETRA TECH

April 24, 2012

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

Re: Closure Report for the COG Operating LLC., Chicken Hawk State #1, Unit A, Section 15, Township 25 South, Range 28 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Chicken Hawk State #1, Unit A, Section 15, Township 25 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.13693°, W 104.06772°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico Oil Conservation Division (NMOCD) Form C-141 Initial Report, the leak was discovered on July 8, 2011, and released approximately 480 barrels of produced fluids due to an influx of production to the tank battery. Approximately 460 barrels of fluid were recovered from the spill area. The spill initiated at the tank battery impacting an area approximately 30' x 160' inside the facility firewalls. The spill breached the firewall and migrated south impacting an area approximately 360' x 1'-5' wide along a native dry wash. The initial Form C-141 is enclosed in Appendix A.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



Groundwater

According to the NMOCD groundwater map, one well is located in Section 15, with a reported depth to water of 48' below surface. Based on these findings, groundwater in this area is less than 50' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the 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 100 mg/kg.

Soil Assessment

Prior to sampling, COG removed approximately 2' of impacted material from around the tanks inside the facility. Additionally, COG performed a surface scrape 3"-6" along the spill footprint. On August 11, 2011, Tetra Tech personnel inspected the site. Due to the surface geology (dense rock) of the area, hand auger samples could not be installed to assess the spill. In order to collect samples along the spill path, an air rotary drilling rig was utilized.

On August 17-18, 2011, Tetra Tech supervised the installation of nine (9) boreholes (BH-1 through BH-9) utilizing an air rotary drilling rig. Samples were collected to approximate depths of 15' to 30' below surface. Samples were placed in laboratory provided containers and submitted for laboratory analysis. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The borehole locations are shown on Figure 4.

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 C. The sampling results are summarized in Table 1. The bore hole locations are shown on Figure 3.



Analytical Results

Referring to Table 1, the sample from BH-1 exceeded the RRAL for total BTEX at 0-1' of 116.7 mg/kg and was not defined. All the boreholes exceeded the RRAL for TPH of 100 mg/kg, with the exception of BH-8. Borehole (BH-7) showed a TPH of 1,305 mg/kg at 5.0' and was not vertically defined. Boreholes (BH-6 and BH-9) declined below the RRAL at approximately 3.0' to 5.0'. In addition, the areas of BH-1, BH-4 and BH-5 declined below the RRAL at 7.0' and (BH-2 and BH-3) at 10.0' below surface. Borehole (BH-7) did show a TPH of 241 mg/kg at 20' below surface, which appear to be cross-contaminated with the upper soils.

The chloride impact shows a shallow impact to the subsurface soils. The areas of BH-1, BH-4, BH-5, BH-7, BH-8 exhibited elevated chloride concentrations at 0-1' ranging from 1,360 mg/kg to 9,990 mg/kg, which significantly declined with depth at 3.0' below surface. Boreholes (BH-3 and BH-9) showed a deeper impact to the soils from 0-1' to 5.0', but declined at 7.0' below surface. The remaining boreholes (BH-2 and BH-6) did not show a significant chloride impact to soils.

Remediation and Conclusion

On January 2012, Tetra Tech personnel supervised the excavation as stated in the approved work plan. In order to remove the hydrocarbon and elevated chloride concentrations, the proposed excavations depths ranged from 1.0' to 7.0' below surface. The spill foot print and final excavation depths of the soil remediation were met or exceeded as stated in the approved work plan, with the exception of BH-1, BH-2 and BH-7. Approximately 1,280 yards³ were removed and disposed of at CRI.

Due to the dense limestone formation, the excavation depths in these areas were not achieved. However, three confirmation samples (CS-1, CS-2, and CS-7) were collected to verify the TPH and BTEX concentrations were below regulatory levels. The results of the confirmation sampling are summarized on Table 1.

Referring to Table, CS-1 and CS-2 were below the RRAL for TPH and BTEX. The area of CS-7 (BH-7) exceeded the RRAL for TPH, with a concentration of 1,765 mg/kg. On March 14, 2012, Tetra Tech personnel contacted Mr. Bratcher with the NMOCd to discuss the TPH result and the dense formation encountered at the site. Based on the results, the Mr. Bratcher approved the TPH concentration for closure of the site. The excavations were backfilled with clean soil to grade.



TETRA TECH

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

Respectfully submitted,
TETRA TECH

Ike Tavares
Project Management

cc: Pat Ellis – COG

Figures

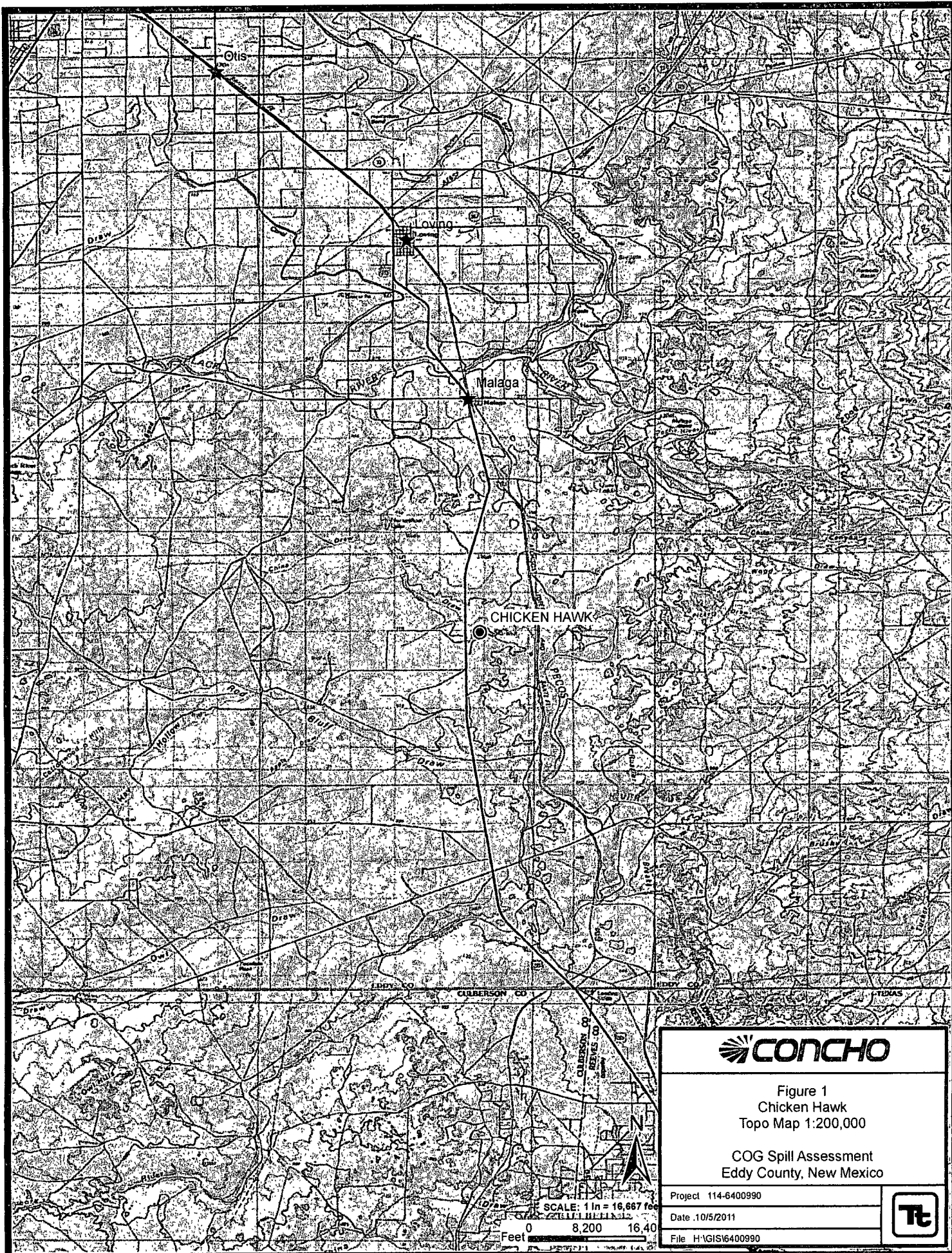


Figure 1
Chicken Hawk
Topo Map 1:200,000

COG Spill Assessment
Eddy County, New Mexico

Project 114-6400990

Date 10/5/2011

File H:\GIS\6400990



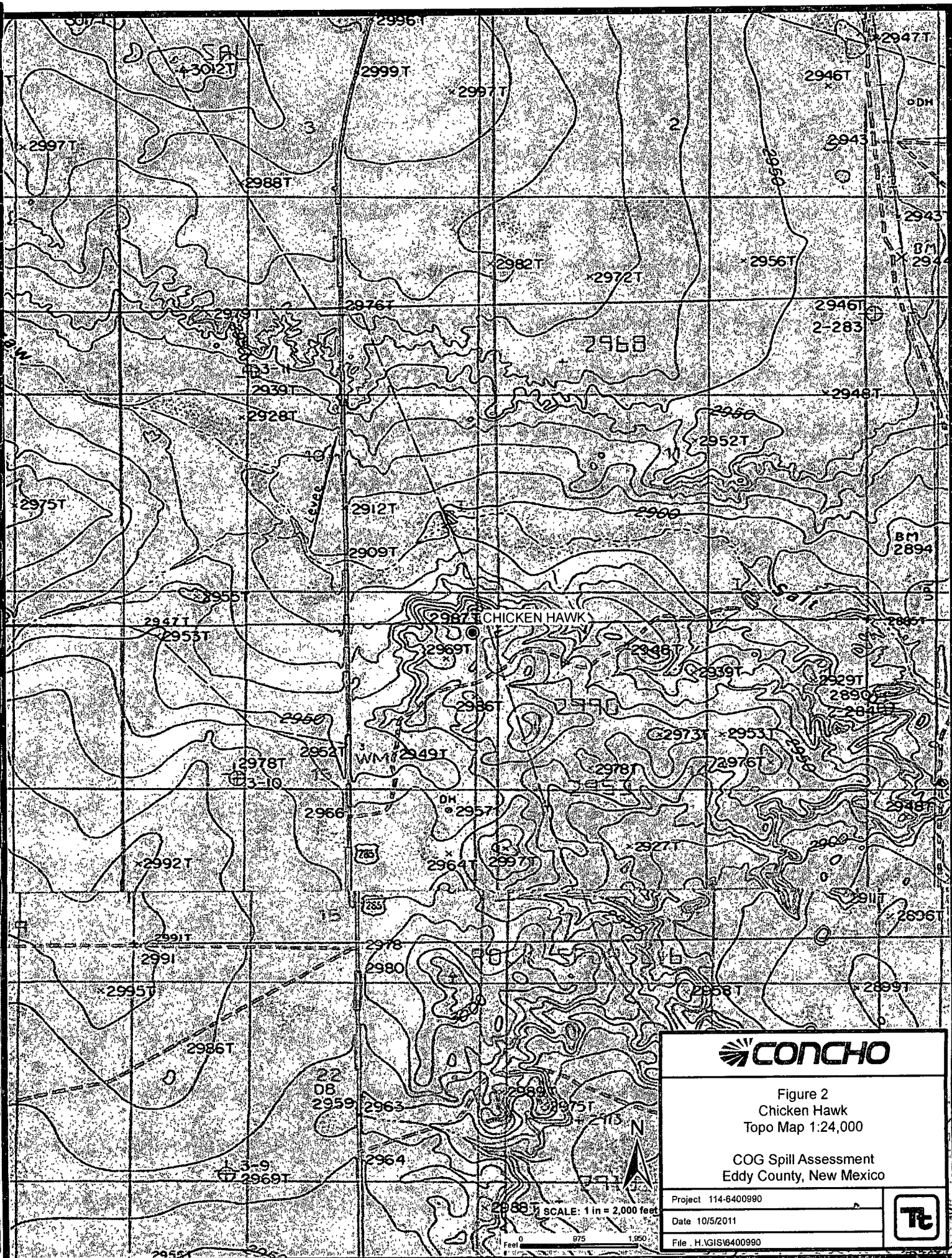


Figure 2
Chicken Hawk
Topo Map 1:24,000

COG Spill Assessment
Eddy County, New Mexico

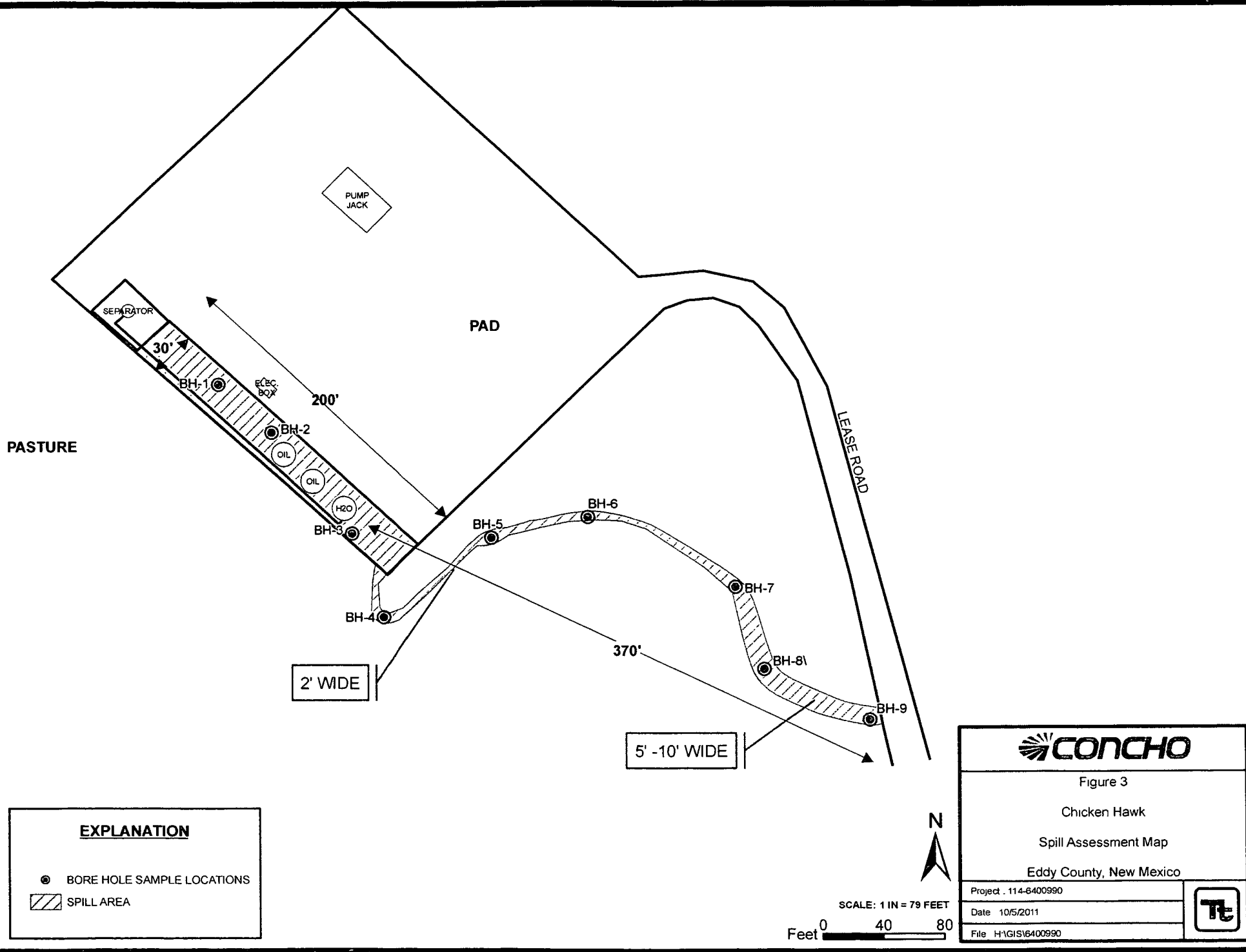
Project 114-6400990

Date 10/5/2011

File H:\GIS\6400990



SCALE: 1 in = 2,000 feet
0 975 1,950
Feet



Tables

Table 1
COG Operating LLC.
Chicken Hawk State #1
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
BH-1	8/17/2011	0-1'	2'		X	3,320	4,640	7,960	1.92	15.8	20.0	79.0	116.72	2,910
	"	3'	2'		X	474	1,440	1,914	-	-	-	-	-	571
4' deep	"	5'	2'	X		294	1,460	1,754	-	-	-	-	-	352
	"	7'	2'	X		18.4	<50.0	18.4	-	-	-	-	-	<200
	"	10'	2'	X		5.72	<50.0	5.72	-	-	-	-	-	<200
	"	15'	2'	X		<2.00	<50.0	<50.0	-	-	-	-	-	<200
CS-1 Bottomhole	1/26/2012	4'	-	X		7.28	<50.0	7.28	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
BH-2	8/17/2011	0-1'	2'		X	864	839	1,703	-	-	-	-	-	612
	"	3'	2'		X	407	1,250	1,657	-	-	-	-	-	642
4' deep	"	5'	2'	X		136	857	993	-	-	-	-	-	520
	"	7'	2'	X		119	404	523	-	-	-	-	-	204
	"	10'	2'	X		8.79	<50.0	8.79	-	-	-	-	-	<200
CS-2 Bottomhole	1/26/2012	4'	-	X		10.4	<50.0	10.4	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
BH-3	8/17/2011	0-1'	2'		X	1,350	6,110	7,460	<1.00	<1.00	<1.00	17.8	17.8	7,960
	"	3'	2'		X	728	3,170	3,898	-	-	-	-	-	3,410
	"	5'	2'		X	1,330	2,130	3,460	-	-	-	-	-	2,880
7' deep	"	7'	2'		X	192	478	670	-	-	-	-	-	762
	"	10'	2'	X		12.2	<50.0	12.2	-	-	-	-	-	445
	"	15'	2'	X		<2.00	<50.0	<50.0	-	-	-	-	-	630
	"	20'	2'	X		19.4	222	241.4	-	-	-	-	-	413

Table 1
COG Operating LLC.
Chicken Hawk State #1
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
BH-4	8/17/2011	0-1'	-		X	2,110	15,800	17,910	<1.00	<1.00	4.22	19.6	23.82	9,990
	"	3'	-		X	541	1,960	2,501	-	-	-	-	-	1,590
	"	5'	-		X	49.4	458	507.4	-	-	-	-	-	326
7' deep	"	7'	-		X	6.74	72.9	79.64	-	-	-	-	-	<200
	"	10'	-	X		<2.00	<50.0	<50.0	-	-	-	-	-	<200
BH-5	8/17/2011	0-1'	-		X	2,320	22,700	25,020	<1.00	2.51	6.05	18.5	27.06	1,360
		3'	-		X	914	7,840	8,754	-	-	-	-	-	621
	"	5'	-		X	61.9	661	722.9	-	-	-	-	-	<200
7' deep	"	7'	-		X	2.63	<50.0	<50.0	-	-	-	-	-	<200
BH-6	8/17/2011	0-1'	-		X	126	667	793	-	-	-	-	-	363
3' deep	"	3'	-		X	<2.00	<50.0	<50.0	-	-	-	-	-	<200
	"	5'	-	X		-	-	-	-	-	-	-	-	<200
	"	7'	-	X		-	-	-	-	-	-	-	-	<200
BH-7	8/17/2011	0-1'	-		X	350	2,670	3,020	-	-	-	-	-	3,220
1.5' deep	"	3'	-	X		31.1	968	999.1	-	-	-	-	-	1,160
	"	5'	-	X		45.3	1,260	1,305.3	-	-	-	-	-	1,330
CS-7 Bottomhole	1/26/2012	1.5'	-	X		155	1,610	1,765	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	658

Table 1
COG Operating LLC.
Chicken Hawk State #1
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
BH-8	8/17/2011	0-1'	-		X	<2.00	<50.0	<50.0	-	-	-	-	-	4,610
1.5' deep	"	3'	-	X		-	-	-	-	-	-	-	-	<200
	"	5'	-	X		-	-	-	-	-	-	-	-	<200
	"	7'	-	X		-	-	-	-	-	-	-	-	<200
BH-9	8/17/2011	0-1'	-		X	109	656	765	-	-	-	-	-	23,200
	"	3'	-		X	3.84	179	182.84	-	-	-	-	-	5,020
	"	5'	-		X	<2.00	<50.0	<50.0	-	-	-	-	-	2,530
6' deep	"	7'	-	X		-	-	-	-	-	-	-	-	1,880
	"	10'	-	X		-	-	-	-	-	-	-	-	<200

(--)

Not Analyzed

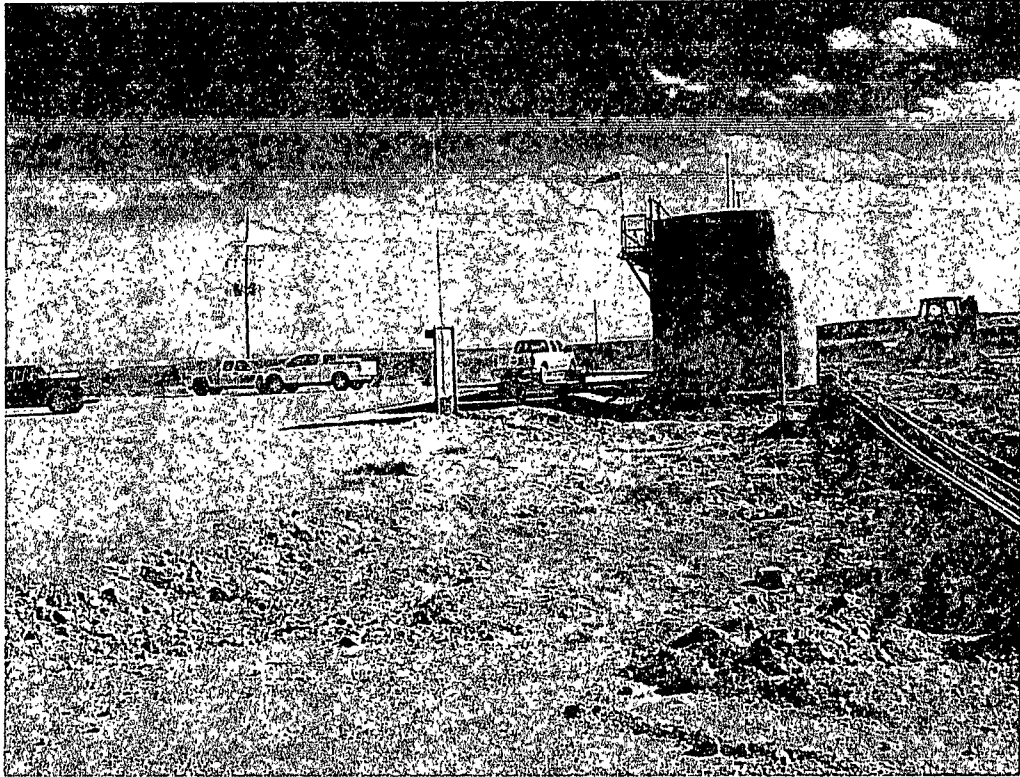


Excavation Depths

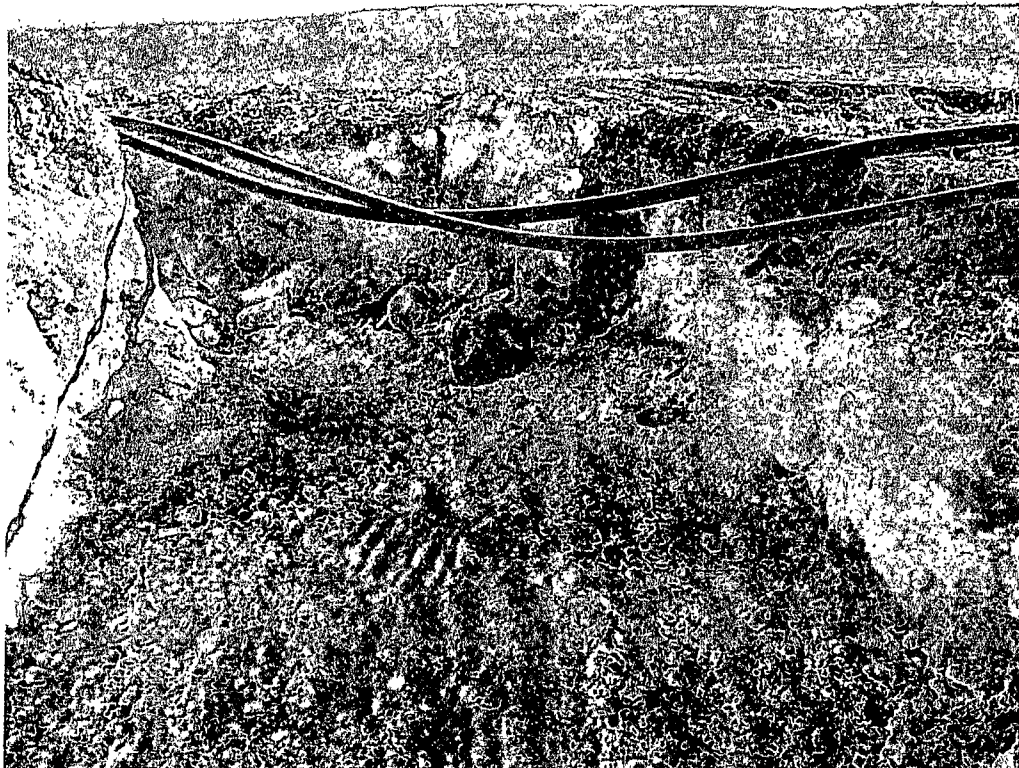
X' Deep

Final Excavation Depth achieved

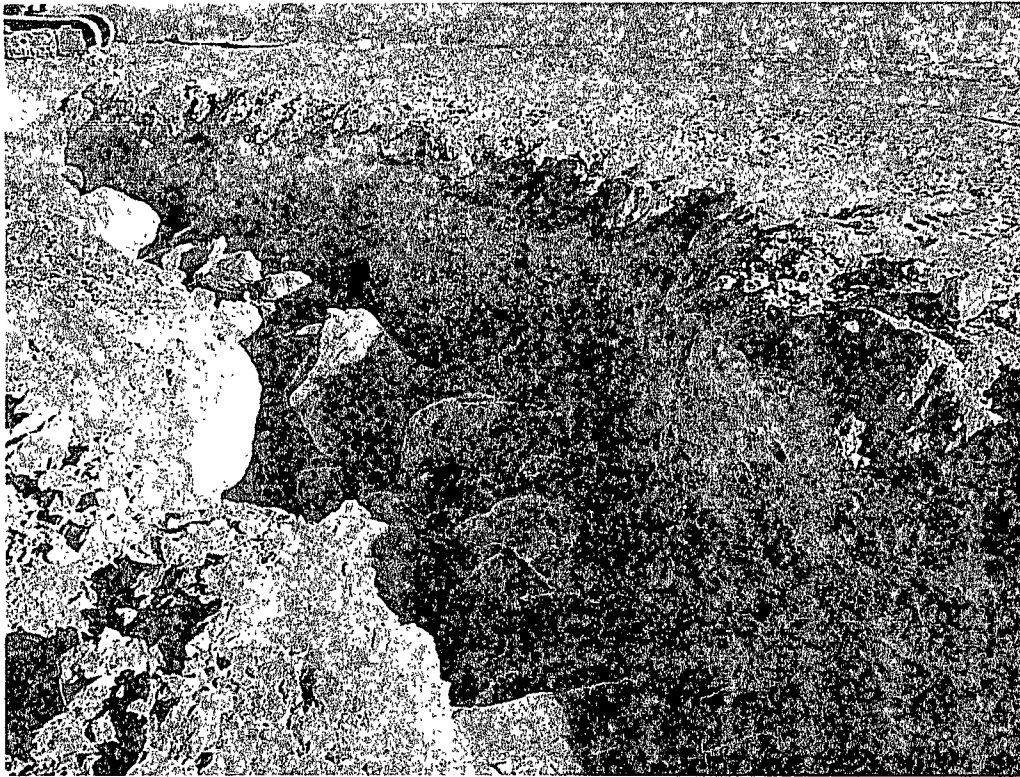
Photos



View north east – Area inside tank battery near BH-1, BH-2, and BH-3



View east – Area near BH-4 with final depth approximately 6-7' bgs



View north – Area near BH-5 with a final depth of approximately 6'-7' bgs

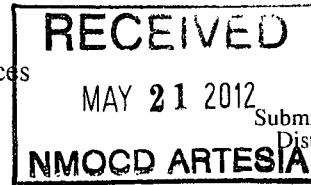


View east – Area near BH-9 with a final depth of approximately 6' tapering off to ground level at lease road

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505



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 Chicken Hawk State #1	Facility Type Tank Battery
Surface Owner State	Mineral Owner Lease No. NM-30-015-33682

LOCATION OF RELEASE

Unit Letter A	Section 15	Township 25-S	Range 28-E	Feet from the 	North/South Line 	Feet from the 	East/West Line 	County Eddy
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Latitude N 32 08.236° Longitude W 104 04.079°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 480 bbls	Volume Recovered 460 bbls
Source of Release Tank	Date and Hour of Occurrence 7/8/2011	Date and Hour of Discovery 7/8/2011 11:00 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - OCD	
By Whom? Josh Russo	Date and Hour 7/21/2011 8:31 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

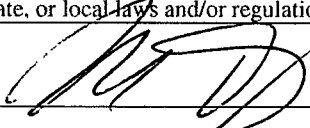
Describe Cause of Problem and Remedial Action Taken.*

A flush of production caused an influx of fluid to the battery. The flush of production was due to a well being shut in for workover evaluation, and then being returned into production. Choke back the wells that have been shut in for a prolonged period of time until production returns to normal volumes.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech inspected the site and collected soil samples to define the spill extents. Impacted soil was excavated and hauled to Controlled Recovery, Inc., Hobbs, NM. Once approved, the site was backfilled with clean soil. Tetra Tech prepared closure report and submitted to NMOCD for review.

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

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez (agent for COG)		Approved by District Supervisor:	
Title: Project Manager		Approval Date:	Expiration Date:
E-mail Address: ike.tavarez@tetrattech.com		Conditions of Approval:	
Date: 7-25-12 Phone: (432) 682-4559		Attached ☐	

Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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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 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Chicken Hawk State #1	Facility Type	Tank Battery
Surface Owner	State	Mineral Owner	Lease No. (API#) 30-015-33682

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	15	25S	28E					Eddy

Latitude 32 08.236 Longitude 104 04.079

NATURE OF RELEASE

Type of Release	Produced fluid	Volume of Release	480bbls	Volume Recovered	460bbls
Source of Release	Tank	Date and Hour of Occurrence	07/08/2011	Date and Hour of Discovery	07/08/2011 11:00 a.m.
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Mike Bratcher--OCD		
By Whom?	Josh Russo	Date and Hour	07/21/2011 8:31 p.m.		
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.*

A flush of production caused an influx of fluid to the battery. The flush of production was due to a well being shut in for workover evaluation, and then being returned into production. Choke back the wells that have been shut in for a prolonged period of time until production returns to normal volumes.

Describe Area Affected and Cleanup Action Taken.*

Initially 480bbls of produced fluid was released from the tank and we were able to recover 460bbls with a vacuum truck. We recovered roughly 110bbls of oil and 350bbls of produced water from the release. All free fluid has been recovered. The majority of the release was contained inside the facility walls with some reaching into the adjacent pasture area. Microblaze has been applied to the affected area in the pasture. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a work plan to the 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

E-mail Address:

jrusso@conchoresources.com

Date: 07/21/2011

Phone: 432-212-2399

Approved by District Supervisor:

Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Chicken Hawk State #1
Eddy County, New Mexico

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

24 South			28 East		
6	70	5	30	4	30
7	8	50	9	10	11
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South			29 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

25 South			27 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

25 South			28 East		
6	5	4	36	3	2
7	8	9	10	11	12
18	17	16	15	48	14
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South			29 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

26 South			27 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

26 South			28 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

26 South			29 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

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data
-  Site Location - Chicken Hawk State #1

Appendix C

Summary Report

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

Report Date: August 31, 2011

Work Order: 11082204

Project Location: Eddy Co., NM
Project Name: COG/Chicken Hawk State #1
Project Number: 114-6400990

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
275072	BH-1 0-1' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275073	BH-1 3' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275074	BH-1 5' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275075	BH-1 7' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275076	BH-1 10' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275077	BH-1 15' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275078	BH-2 0-1' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275079	BH-2 3' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275080	BH-2 5' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275081	BH-2 7' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275082	BH-2 10' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275083	BH-3 0-1' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275084	BH-3 3' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275085	BH-3 5' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275086	BH-3 7' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275087	BH-3 10' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275088	BH-3 15' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275089	BH-3 20' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275090	BH-4 0-1'	soil	2011-08-17	00:00	2011-08-19
275091	BH-4 3'	soil	2011-08-17	00:00	2011-08-19
275092	BH-4 5'	soil	2011-08-17	00:00	2011-08-19
275093	BH-4 7'	soil	2011-08-17	00:00	2011-08-19
275094	BH-4 10'	soil	2011-08-17	00:00	2011-08-19
275095	BH-5 0-1'	soil	2011-08-18	00:00	2011-08-19
275096	BH-5 3'	soil	2011-08-18	00:00	2011-08-19
275097	BH-5 5'	soil	2011-08-18	00:00	2011-08-19
275098	BH-5 7'	soil	2011-08-18	00:00	2011-08-19
275099	BH-6 0-1'	soil	2011-08-18	00:00	2011-08-19
275100	BH-6 3'	soil	2011-08-18	00:00	2011-08-19
275101	BH-6 5'	soil	2011-08-18	00:00	2011-08-19

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This is only a summary. Please, refer to the complete report package for quality control data.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
275102	BH-6 7'	soil	2011-08-18	00:00	2011-08-19
275103	BH-7 0-1'	soil	2011-08-18	00:00	2011-08-19
275104	BH-7 3'	soil	2011-08-18	00:00	2011-08-19
275105	BH-7 5'	soil	2011-08-18	00:00	2011-08-19
275106	BH-8 0-1'	soil	2011-08-18	00:00	2011-08-19
275107	BH-8 3'	soil	2011-08-18	00:00	2011-08-19
275108	BH-8 5'	soil	2011-08-18	00:00	2011-08-19
275109	BH-8 7'	soil	2011-08-18	00:00	2011-08-19
275110	BH-9 0-1'	soil	2011-08-18	00:00	2011-08-19
275111	BH-9 3'	soil	2011-08-18	00:00	2011-08-19
275112	BH-9 5'	soil	2011-08-18	00:00	2011-08-19
275113	BH-9 7'	soil	2011-08-18	00:00	2011-08-19
275114	BH-9 10'	soil	2011-08-18	00:00	2011-08-19

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)
275072 - BH-1 0-1' (2' BEB)	1.92	15.8	20.0	79.0	4640	3320 Qs
275073 - BH-1 3' (2' BEB)					1440 Qs	474 Qr,Qs
275074 - BH-1 5' (2' BEB)					1460 Qs	294 Qr,Qs
275075 - BH-1 7' (2' BEB)					<50.0	18.4 Qr,Qs
275076 - BH-1 10' (2' BEB)					<50.0	5.72 Qr,Qs
275077 - BH-1 15' (2' BEB)					<50.0	<2.00 Qr,Qs
275078 - BH-2 0-1' (2' BEB)					839	864 Qs
275079 - BH-2 3' (2' BEB)					1250 Qr,Qs	407 Qr,Qs
275080 - BH-2 5' (2' BEB)					857	136 Qr,Qs
275081 - BH-2 7' (2' BEB)					404	119 Qr,Qs
275082 - BH-2 10' (2' BEB)					<50.0	8.79 Qr,Qs
275083 - BH-3 0-1' (2' BEB)	<1.00	<1.00	<1.00	17.8	6110	1350 Qs
275084 - BH-3 3' (2' BEB)					3170 Qr,Qs	728 Qr,Qs
275085 - BH-3 5' (2' BEB)					2130 Qr,Qs	1330 Qr,Qs
275086 - BH-3 7' (2' BEB)					478	192 Qr,Qs
275087 - BH-3 10' (2' BEB)					<50.0	12.2 Qr,Qs
275088 - BH-3 15' (2' BEB)					<50.0	<2.00 Qr,Qs
275089 - BH-3 20' (2' BEB)					222	19.4 Qr,Qs
275090 - BH-4 0-1'	<1.00	<1.00	4.22	19.6	15800	2110 Qs
275091 - BH-4 3'					1960 Qr,Qs	541 Qr,Qs
275092 - BH-4 5'					458 Qr,Qs	49.4 Qr,Qs
275093 - BH-4 7'					72.9	6.74 Qr,Qs
275094 - BH-4 10'					<50.0	<2.00 Qr,Qs
275095 - BH-5 0-1'	<1.00	2.51	6.05	18.5	22700	2320 Qs
275096 - BH-5 3'					7840 Qr,Qs	914 Qr,Qs
275097 - BH-5 5'					661 Qr,Qs	61.9
275098 - BH-5 7'					<50.0 Qr,Qs	2.63
275099 - BH-6 0-1'					667	126 Qs
275100 - BH-6 3'					<50.0 Qr,Qs	<2.00
275103 - BH-7 0-1'					2670	350 Qs
275104 - BH-7 3'					968 Qr,Qs	31.1
275105 - BH-7 5'					1260	45.3
275106 - BH-8 0-1'					<50.0	<2.00 Qs
275110 - BH-9 0-1'					656	109 Qs

continued ...

... continued

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)
275111 - BH-9 3'					179 _{Qr, Qs}	3.84
275112 - BH-9 5'					<50.0	<2.00

Sample: 275072 - BH-1 0-1' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		2910	mg/Kg	4

Sample: 275073 - BH-1 3' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		571	mg/Kg	4

Sample: 275074 - BH-1 5' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		352	mg/Kg	4

Sample: 275075 - BH-1 7' (2' BEB)

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

Sample: 275076 - BH-1 10' (2' BEB)

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

Sample: 275077 - BH-1 15' (2' BEB)

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

Sample: 275078 - BH-2 0-1' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		612	mg/Kg	4

Sample: 275079 - BH-2 3' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		642	mg/Kg	4

Sample: 275080 - BH-2 5' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		520	mg/Kg	4

Sample: 275081 - BH-2 7' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		204	mg/Kg	4

Sample: 275082 - BH-2 10' (2' BEB)

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

Sample: 275083 - BH-3 0-1' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		7960	mg/Kg	4

Sample: 275084 - BH-3 3' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		3410	mg/Kg	4

Sample: 275085 - BH-3 5' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		2880	mg/Kg	4

Sample: 275086 - BH-3 7' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		762	mg/Kg	4

Sample: 275087 - BH-3 10' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		445	mg/Kg	4

Sample: 275088 - BH-3 15' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		630	mg/Kg	4

Sample: 275089 - BH-3 20' (2' BEB)

Param	Flag	Result	Units	RL
Chloride		413	mg/Kg	4

Sample: 275090 - BH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		9990	mg/Kg	4

Sample: 275091 - BH-4 3'

Param	Flag	Result	Units	RL
Chloride		1590	mg/Kg	4

Sample: 275092 - BH-4 5'

Param	Flag	Result	Units	RL
Chloride		326	mg/Kg	4

Sample: 275093 - BH-4 7'

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

Sample: 275094 - BH-4 10'

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

Sample: 275095 - BH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		1360	mg/Kg	4

Sample: 275096 - BH-5 3'

Param	Flag	Result	Units	RL
Chloride		621	mg/Kg	4

Sample: 275097 - BH-5 5'

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

Sample: 275098 - BH-5 7'

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

Sample: 275099 - BH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		363	mg/Kg	4

Sample: 275100 - BH-6 3'

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

Sample: 275101 - BH-6 5'

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

Sample: 275102 - BH-6 7'

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

Sample: 275103 - BH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		3220	mg/Kg	4

Sample: 275104 - BH-7 3'

Param	Flag	Result	Units	RL
Chloride		1160	mg/Kg	4

Sample: 275105 - BH-7 5'

Param	Flag	Result	Units	RL
Chloride		1330	mg/Kg	4

Sample: 275106 - BH-8 0-1'

Param	Flag	Result	Units	RL
Chloride		4610	mg/Kg	4

Sample: 275107 - BH-8 3'

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

Sample: 275108 - BH-8 5'

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

Sample: 275109 - BH-8 7'

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

Sample: 275110 - BH-9 0-1'

Param	Flag	Result	Units	RL
Chloride		23200	mg/Kg	4

Sample: 275111 - BH-9 3'

Param	Flag	Result	Units	RL
Chloride		5020	mg/Kg	4

Sample: 275112 - BH-9 5'

Param	Flag	Result	Units	RL
Chloride		2530	mg/Kg	4

Sample: 275113 - BH-9 7'

Param	Flag	Result	Units	RL
Chloride		1880	mg/Kg	4

Sample: 275114 - BH-9 10'

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



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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: August 31, 2011

Work Order: 11082204

Project Location: Eddy Co., NM
Project Name: COG/Chicken Hawk State #1
Project Number: 114-6400990

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
275072	BH-1 0-1' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275073	BH-1 3' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275074	BH-1 5' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275075	BH-1 7' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275076	BH-1 10' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275077	BH-1 15' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275078	BH-2 0-1' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275079	BH-2 3' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275080	BH-2 5' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275081	BH-2 7' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275082	BH-2 10' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275083	BH-3 0-1' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275084	BH-3 3' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275085	BH-3 5' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275086	BH-3 7' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275087	BH-3 10' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275088	BH-3 15' (2' BEB)	soil	2011-08-17	00:00	2011-08-19
275089	BH-3 20' (2' BEB)	soil	2011-08-17	00:00	2011-08-19

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
275090	BH-4 0-1'	soil	2011-08-17	00:00	2011-08-19
275091	BH-4 3'	soil	2011-08-17	00:00	2011-08-19
275092	BH-4 5'	soil	2011-08-17	00:00	2011-08-19
275093	BH-4 7'	soil	2011-08-17	00:00	2011-08-19
275094	BH-4 10'	soil	2011-08-17	00:00	2011-08-19
275095	BH-5 0-1'	soil	2011-08-18	00:00	2011-08-19
275096	BH-5 3'	soil	2011-08-18	00:00	2011-08-19
275097	BH-5 5'	soil	2011-08-18	00:00	2011-08-19
275098	BH-5 7'	soil	2011-08-18	00:00	2011-08-19
275099	BH-6 0-1'	soil	2011-08-18	00:00	2011-08-19
275100	BH-6 3'	soil	2011-08-18	00:00	2011-08-19
275101	BH-6 5'	soil	2011-08-18	00:00	2011-08-19
275102	BH-6 7'	soil	2011-08-18	00:00	2011-08-19
275103	BH-7 0-1'	soil	2011-08-18	00:00	2011-08-19
275104	BH-7 3'	soil	2011-08-18	00:00	2011-08-19
275105	BH-7 5'	soil	2011-08-18	00:00	2011-08-19
275106	BH-8 0-1'	soil	2011-08-18	00:00	2011-08-19
275107	BH-8 3'	soil	2011-08-18	00:00	2011-08-19
275108	BH-8 5'	soil	2011-08-18	00:00	2011-08-19
275109	BH-8 7'	soil	2011-08-18	00:00	2011-08-19
275110	BH-9 0-1'	soil	2011-08-18	00:00	2011-08-19
275111	BH-9 3'	soil	2011-08-18	00:00	2011-08-19
275112	BH-9 5'	soil	2011-08-18	00:00	2011-08-19
275113	BH-9 7'	soil	2011-08-18	00:00	2011-08-19
275114	BH-9 10'	soil	2011-08-18	00:00	2011-08-19

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 72 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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QC Batch 84261 - LCS (1)	54
QC Batch 84264 - LCS (1)	55
QC Batch 84287 - LCS (1)	55
QC Batch 84307 - LCS (1)	56
QC Batch 84308 - LCS (1)	56
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Case Narrative

Samples for project COG/Chicken Hawk State #1 were received by TraceAnalysis, Inc. on 2011-08-19 and assigned to work order 11082204. Samples for work order 11082204 were received intact at a temperature of -1.9 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	71488	2011-08-23 at 13:50	84192	2011-08-23 at 18:03
Chloride (Titration)	SM 4500-Cl B	71475	2011-08-23 at 12:50	84307	2011-08-29 at 12:26
Chloride (Titration)	SM 4500-Cl B	71475	2011-08-23 at 12:50	84308	2011-08-29 at 12:27
Chloride (Titration)	SM 4500-Cl B	71475	2011-08-23 at 12:50	84309	2011-08-29 at 12:28
Chloride (Titration)	SM 4500-Cl B	71539	2011-08-25 at 12:17	84348	2011-08-30 at 13:01
Chloride (Titration)	SM 4500-Cl B	71539	2011-08-25 at 12:17	84349	2011-08-30 at 13:02
TPH DRO - NEW	S 8015 D	71459	2011-08-22 at 11:07	84149	2011-08-22 at 11:07
TPH DRO - NEW	S 8015 D	71490	2011-08-23 at 14:03	84194	2011-08-23 at 14:03
TPH DRO - NEW	S 8015 D	71491	2011-08-23 at 14:03	84195	2011-08-23 at 14:03
TPH DRO - NEW	S 8015 D	71548	2011-08-24 at 14:42	84264	2011-08-24 at 14:42
TPH GRO	S 8015 D	71488	2011-08-23 at 13:50	84193	2011-08-23 at 18:03
TPH GRO	S 8015 D	71544	2011-08-25 at 09:12	84261	2011-08-25 at 09:12
TPH GRO	S 8015 D	71575	2011-08-26 at 11:51	84287	2011-08-26 at 11:51

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 11082204 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: 275072 - BH-1 0-1' (2' BEB)

Laboratory: Midland

Analysis: BTEX

QC Batch: 84192

Prep Batch: 71488

Analytical Method: S 8021B

Date Analyzed: 2011-08-23

Sample Preparation: 2011-08-23

Prep Method: S 5035

Analyzed By: ME

Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	1.92	mg/Kg	50	0.0200
Toluene		1	15.8	mg/Kg	50	0.0200
Ethylbenzene		1	20.0	mg/Kg	50	0.0200
Xylene		1	79.0	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			59.8	mg/Kg	50	50.0	120	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			67.9	mg/Kg	50	50.0	136	70.6 - 179

Sample: 275072 - BH-1 0-1' (2' BEB)

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 84307

Prep Batch: 71475

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-08-29

Sample Preparation: 2011-08-23

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2910	mg/Kg	100	4.00

Sample: 275072 - BH-1 0-1' (2' BEB)

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 84149

Prep Batch: 71459

Analytical Method: S 8015 D

Date Analyzed: 2011-08-22

Sample Preparation: 2011-08-22

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	4640	mg/Kg	5	50.0

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q ₁		397	mg/Kg	5	100	397	67.5 - 147.1

Sample: 275072 - BH-1 0-1' (2' BEB)

Laboratory: Midland

Analysis: TPH GRO

QC Batch: 84193

Prep Batch: 71488

Analytical Method: S 8015 D

Date Analyzed: 2011-08-23

Sample Preparation: 2011-08-23

Prep Method: S 5035

Analyzed By: ME

Prepared By: ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		57.2	mg/Kg	50	50.0	114	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		70.4	mg/Kg	50	50.0	141	22.4 - 149

Sample: 275073 - BH-1 3' (2' BEB)

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 84307

Prep Batch: 71475

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-08-29

Sample Preparation: 2011-08-23

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			571	mg/Kg	50	4.00

Sample: 275073 - BH-1 3' (2' BEB)

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 84195

Prep Batch: 71491

Analytical Method: S 8015 D

Date Analyzed: 2011-08-23

Sample Preparation: 2011-08-23

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Q ₁	1	1440	mg/Kg	1	50.0

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q _{sr}		205	mg/Kg	1	100	205	67.5 - 147.1

Sample: 275073 - BH-1 3' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84261
Prep Batch: 71544

Analytical Method: S 8015 D
Date Analyzed: 2011-08-25
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q _r , Q _s	1	474	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		11.3	mg/Kg	10	10.0	113	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		12.9	mg/Kg	10	10.0	129	22.4 - 149

Sample: 275074 - BH-1 5' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84307
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			352	mg/Kg	50	4.00

Sample: 275074 - BH-1 5' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84195
Prep Batch: 71491

Analytical Method: S 8015 D
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Q _s	1	1460	mg/Kg	1	50.0

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr		216	mg/Kg	1	100	216	67.5 - 147.1

Sample: 275074 - BH-1 5' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84261
Prep Batch: 71544

Analytical Method: S 8015 D
Date Analyzed: 2011-08-25
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	1	294	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.34	mg/Kg	1	2.00	117	30 - 134.6
4-Bromofluorobenzene (4-BFB)	Qsr		3.40	mg/Kg	1	2.00	170	22.4 - 149

Sample: 275075 - BH-1 7' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84307
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

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

Sample: 275075 - BH-1 7' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84264
Prep Batch: 71548

Analytical Method: S 8015 D
Date Analyzed: 2011-08-24
Sample Preparation: 2011-08-24

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

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

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			111	mg/Kg	1	100	111	67.5 - 147.1

Sample: 275075 - BH-1 7' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84261 Date Analyzed: 2011-08-25 Analyzed By: ME
Prep Batch: 71544 Sample Preparation: 2011-08-25 Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	1	18.4	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.43	mg/Kg	1	2.00	122	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.35	mg/Kg	1	2.00	118	22.4 - 149

Sample: 275076 - BH-1 10' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84307 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 Sample Preparation: 2011-08-23 Prepared By: AR

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

Sample: 275076 - BH-1 10' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84264 Date Analyzed: 2011-08-24 Analyzed By: kg
Prep Batch: 71548 Sample Preparation: 2011-08-24 Prepared By: kg

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

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			122	mg/Kg	1	100	122	67.5 - 147.1

Sample: 275076 - BH-1 10' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84261
Prep Batch: 71544

Analytical Method: S 8015 D
Date Analyzed: 2011-08-25
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr Qs	1	5.72	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.29	mg/Kg	1	2.00	114	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.17	mg/Kg	1	2.00	108	22.4 - 149

Sample: 275077 - BH-1 15' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84307
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

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

Sample: 275077 - BH-1 15' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84264
Prep Batch: 71548

Analytical Method: S 8015 D
Date Analyzed: 2011-08-24
Sample Preparation: 2011-08-24

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

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

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	67.5 - 147.1

Sample: 275077 - BH-1 15' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84261
Prep Batch: 71544

Analytical Method: S 8015 D
Date Analyzed: 2011-08-25
Sample Preparation: 2011-08-25

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.24	mg/Kg	1	2.00	112	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	22.4 - 149

Sample: 275078 - BH-2 0-1' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84307
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			612	mg/Kg	50	4.00

Sample: 275078 - BH-2 0-1' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84149
Prep Batch: 71459

Analytical Method: S 8015 D
Date Analyzed: 2011-08-22
Sample Preparation: 2011-08-22

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	839	mg/Kg	1	50.0

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q _{sr}		157	mg/Kg	1	100	157	67.5 - 147.1

Sample: 275078 - BH-2 0-1' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84193
Prep Batch: 71488

Analytical Method: S 8015 D
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q _s	1	864	mg/Kg	20	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		21.1	mg/Kg	20	20.0	106	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		24.4	mg/Kg	20	20.0	122	22.4 - 149

Sample: 275079 - BH-2 3' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84307
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			642	mg/Kg	50	4.00

Sample: 275079 - BH-2 3' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84194
Prep Batch: 71490

Analytical Method: S 8015 D
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Q ₁ , Q _s	1	1250	mg/Kg	1	50.0

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q _{sr}		180	mg/Kg	1	100	180	67.5 - 147.1

Sample: 275079 - BH-2 3' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84261
Prep Batch: 71544

Analytical Method: S 8015 D
Date Analyzed: 2011-08-25
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q _r , Q _s	1	407	mg/Kg	5	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		5.57	mg/Kg	5	5.00	111	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		7.08	mg/Kg	5	5.00	142	22.4 - 149

Sample: 275080 - BH-2 5' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84307
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			520	mg/Kg	50	4.00

Sample: 275080 - BH-2 5' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84264
Prep Batch: 71548

Analytical Method: S 8015 D
Date Analyzed: 2011-08-24
Sample Preparation: 2011-08-24

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	857	mg/Kg	1	50.0

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q _{st}		172	mg/Kg	1	100	172	67.5 - 147.1

Sample: 275080 - BH-2 5' (2' BEB)

Laboratory: Midland

Analysis: TPH GRO

QC Batch: 84261

Prep Batch: 71544

Analytical Method: S 8015 D

Date Analyzed: 2011-08-25

Sample Preparation: 2011-08-25

Prep Method: S 5035

Analyzed By: ME

Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q _r , Q _s	1	136	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.39	mg/Kg	1	2.00	120	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.74	mg/Kg	1	2.00	137	22.4 - 149

Sample: 275081 - BH-2 7' (2' BEB)

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 84307

Prep Batch: 71475

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-08-29

Sample Preparation: 2011-08-23

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			204	mg/Kg	50	4.00

Sample: 275081 - BH-2 7' (2' BEB)

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 84264

Prep Batch: 71548

Analytical Method: S 8015 D

Date Analyzed: 2011-08-24

Sample Preparation: 2011-08-24

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	404	mg/Kg	1	50.0

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			139	mg/Kg	1	100	139	67.5 - 147.1

Sample: 275081 - BH-2 7' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84261 Date Analyzed: 2011-08-25 Analyzed By: ME
Prep Batch: 71544 Sample Preparation: 2011-08-25 Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,Qs	1	119	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.45	mg/Kg	1	2.00	122	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.69	mg/Kg	1	2.00	134	22.4 - 149

Sample: 275082 - BH-2 10' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84308 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 Sample Preparation: 2011-08-23 Prepared By: AR

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

Sample: 275082 - BH-2 10' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84264 Date Analyzed: 2011-08-24 Analyzed By: kg
Prep Batch: 71548 Sample Preparation: 2011-08-24 Prepared By: kg

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

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	67.5 - 147.1

Sample: 275082 - BH-2 10' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84261
Prep Batch: 71544

Analytical Method: S 8015 D
Date Analyzed: 2011-08-25
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	1	8.79	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.31	mg/Kg	1	2.00	116	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.16	mg/Kg	1	2.00	108	22.4 - 149

Sample: 275083 - BH-3 0-1' (2' BEB)

Laboratory: Midland
Analysis: BTEX
QC Batch: 84192
Prep Batch: 71488

Analytical Method: S 8021B
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<1.00	mg/Kg	50	0.0200
Toluene	u	1	<1.00	mg/Kg	50	0.0200
Ethylbenzene	u	1	<1.00	mg/Kg	50	0.0200
Xylene		1	17.8	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			55.1	mg/Kg	50	50.0	110	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			61.6	mg/Kg	50	50.0	123	70.6 - 179

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Sample: 275083 - BH-3 0-1' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84308 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 Sample Preparation: 2011-08-23 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			7960	mg/Kg	100	4.00

Sample: 275083 - BH-3 0-1' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84149 Date Analyzed: 2011-08-22 Analyzed By: kg
Prep Batch: 71459 Sample Preparation: 2011-08-22 Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	6110	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	J, Q _{sr}		498	mg/Kg	10	100	498	67.5 - 147.1

Sample: 275083 - BH-3 0-1' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84193 Date Analyzed: 2011-08-23 Analyzed By: ME
Prep Batch: 71488 Sample Preparation: 2011-08-23 Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q _s	1	1350	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		52.9	mg/Kg	50	50.0	106	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		55.8	mg/Kg	50	50.0	112	22.4 - 149

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Sample: 275084 - BH-3 3' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84308 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 Sample Preparation: 2011-08-23 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			3410	mg/Kg	100	4.00

Sample: 275084 - BH-3 3' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84194 Date Analyzed: 2011-08-23 Analyzed By: kg
Prep Batch: 71490 Sample Preparation: 2011-08-23 Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr, Qs	1	3170	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr		322	mg/Kg	5	100	322	67.5 - 147.1

Sample: 275084 - BH-3 3' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84261 Date Analyzed: 2011-08-25 Analyzed By: ME
Prep Batch: 71544 Sample Preparation: 2011-08-25 Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	1	728	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		10.4	mg/Kg	10	10.0	104	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		13.2	mg/Kg	10	10.0	132	22.4 - 149

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Sample: 275085 - BH-3 5' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84308 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 Sample Preparation: 2011-08-23 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2880	mg/Kg	100	4.00

Sample: 275085 - BH-3 5' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84194 Date Analyzed: 2011-08-23 Analyzed By: kg
Prep Batch: 71490 Sample Preparation: 2011-08-23 Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr, Qs	1	2130	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr		234	mg/Kg	1	100	234	67.5 - 147.1

Sample: 275085 - BH-3 5' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84261 Date Analyzed: 2011-08-25 Analyzed By: ME
Prep Batch: 71544 Sample Preparation: 2011-08-25 Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	1	1330	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		10.8	mg/Kg	10	10.0	108	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J, Qs1		15.1	mg/Kg	10	10.0	151	22.4 - 149

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Sample: 275086 - BH-3 7' (2' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2011-08-29	Analyzed By:	AR
QC Batch:	84308	Sample Preparation:	2011-08-23	Prepared By:	AR
Prep Batch:	71475				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			762	mg/Kg	50	4.00

Sample: 275086 - BH-3 7' (2' BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2011-08-24	Analyzed By:	kg
QC Batch:	84264	Sample Preparation:	2011-08-24	Prepared By:	kg
Prep Batch:	71548				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		i	478	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	67.5 - 147.1

Sample: 275086 - BH-3 7' (2' BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2011-08-25	Analyzed By:	ME
QC Batch:	84261	Sample Preparation:	2011-08-25	Prepared By:	ME
Prep Batch:	71544				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	i	192	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.27	mg/Kg	1	2.00	114	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.93	mg/Kg	1	2.00	146	22.4 - 149

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Sample: 275087 - BH-3 10' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84308 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 Sample Preparation: 2011-08-23 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			445	mg/Kg	50	4.00

Sample: 275087 - BH-3 10' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84264 Date Analyzed: 2011-08-24 Analyzed By: kg
Prep Batch: 71548 Sample Preparation: 2011-08-24 Prepared By: kg

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			121	mg/Kg	1	100	121	67.5 - 147.1

Sample: 275087 - BH-3 10' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84261 Date Analyzed: 2011-08-25 Analyzed By: ME
Prep Batch: 71544 Sample Preparation: 2011-08-25 Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr Qs	i	12.2	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.35	mg/Kg	1	2.00	118	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.18	mg/Kg	1	2.00	109	22.4 - 149

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Sample: 275088 - BH-3 15' (2' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2011-08-29	Analyzed By:	AR
QC Batch:	84308	Sample Preparation:	2011-08-23	Prepared By:	AR
Prep Batch:	71475				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			630	mg/Kg	50	4.00

Sample: 275088 - BH-3 15' (2' BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2011-08-24	Analyzed By:	kg
QC Batch:	84264	Sample Preparation:	2011-08-24	Prepared By:	kg
Prep Batch:	71548				

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			119	mg/Kg	1	100	119	67.5 - 147.1

Sample: 275088 - BH-3 15' (2' BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2011-08-25	Analyzed By:	ME
QC Batch:	84261	Sample Preparation:	2011-08-25	Prepared By:	ME
Prep Batch:	71544				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	J, Qr, Qs	1	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.25	mg/Kg	1	2.00	112	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.18	mg/Kg	1	2.00	109	22.4 - 149

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Sample: 275089 - BH-3 20' (2' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84308 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 Sample Preparation: 2011-08-23 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			413	mg/Kg	50	4.00

Sample: 275089 - BH-3 20' (2' BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84264 Date Analyzed: 2011-08-24 Analyzed By: kg
Prep Batch: 71548 Sample Preparation: 2011-08-24 Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO			222	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			133	mg/Kg	1	100	133	67.5 - 147.1

Sample: 275089 - BH-3 20' (2' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84261 Date Analyzed: 2011-08-25 Analyzed By: ME
Prep Batch: 71544 Sample Preparation: 2011-08-25 Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q1, Q2		19.4	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.31	mg/Kg	1	2.00	116	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.11	mg/Kg	1	2.00	106	22.4 - 149

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Sample: 275090 - BH-4 0-1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 84192
Prep Batch: 71488

Analytical Method: S 8021B
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<1.00	mg/Kg	50	0.0200
Toluene	u	1	<1.00	mg/Kg	50	0.0200
Ethylbenzene		1	4.22	mg/Kg	50	0.0200
Xylene		1	19.6	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			55.4	mg/Kg	50	50.0	111	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			61.0	mg/Kg	50	50.0	122	70.6 - 179

Sample: 275090 - BH-4 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84308
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			9990	mg/Kg	100	4.00

Sample: 275090 - BH-4 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84149
Prep Batch: 71459

Analytical Method: S 8015 D
Date Analyzed: 2011-08-22
Sample Preparation: 2011-08-22

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	15800	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr		1130	mg/Kg	10	100	1130	67.5 - 147.1

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Sample: 275090 - BH-4 0-1'

Laboratory:	Midland		
Analysis:	TPH GRO	Analytical Method:	S 8015 D
QC Batch:	84193	Date Analyzed:	2011-08-23
Prep Batch:	71488	Sample Preparation:	2011-08-23
		Prep Method:	S 5035
		Analyzed By:	ME
		Prepared By:	ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	2110	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		53.2	mg/Kg	50	50.0	106	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		55.8	mg/Kg	50	50.0	112	22.4 - 149

Sample: 275091 - BH-4 3'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	84308	Date Analyzed:	2011-08-29
Prep Batch:	71475	Sample Preparation:	2011-08-23
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1590	mg/Kg	50	4.00

Sample: 275091 - BH-4 3'

Laboratory:	Midland		
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D
QC Batch:	84194	Date Analyzed:	2011-08-23
Prep Batch:	71490	Sample Preparation:	2011-08-23
		Prep Method:	N/A
		Analyzed By:	kg
		Prepared By:	kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr, Qs	1	1960	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qs1		254	mg/Kg	5	100	254	67.5 - 147.1

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Sample: 275091 - BH-4 3'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84261
Prep Batch: 71544

Analytical Method: S 8015 D
Date Analyzed: 2011-08-25
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	1	541	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		11.5	mg/Kg	10	10.0	115	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		12.9	mg/Kg	10	10.0	129	22.4 - 149

Sample: 275092 - BH-4 5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84309
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			326	mg/Kg	50	4.00

Sample: 275092 - BH-4 5'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84194
Prep Batch: 71490

Analytical Method: S 8015 D
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr, Qs	1	458	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr		156	mg/Kg	1	100	156	67.5 - 147.1

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Sample: 275092 - BH-4 5'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84261
Prep Batch: 71544

Analytical Method: S 8015 D
Date Analyzed: 2011-08-25
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	1	49.4	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.37	mg/Kg	1	2.00	118	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.22	mg/Kg	1	2.00	111	22.4 - 149

Sample: 275093 - BH-4 7'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84309
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

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

Sample: 275093 - BH-4 7'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84264
Prep Batch: 71548

Analytical Method: S 8015 D
Date Analyzed: 2011-08-24
Sample Preparation: 2011-08-24

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	72.9	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			130	mg/Kg	1	100	130	67.5 - 147.1

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Sample: 275093 - BH-4 7'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84261
Prep Batch: 71544

Analytical Method: S 8015 D
Date Analyzed: 2011-08-25
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,Qs	1	6.74	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.17	mg/Kg	1	2.00	108	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.07	mg/Kg	1	2.00	104	22.4 - 149

Sample: 275094 - BH-4 10'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84309
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

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

Sample: 275094 - BH-4 10'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84264
Prep Batch: 71548

Analytical Method: S 8015 D
Date Analyzed: 2011-08-24
Sample Preparation: 2011-08-24

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			124	mg/Kg	1	100	124	67.5 - 147.1

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Sample: 275094 - BH-4 10'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84261
Prep Batch: 71544

Analytical Method: S 8015 D
Date Analyzed: 2011-08-25
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	J,Qr,Qs	J	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.08	mg/Kg	1	2.00	104	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		1.95	mg/Kg	1	2.00	98	22.4 - 149

Sample: 275095 - BH-5 0-1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 84192
Prep Batch: 71488

Analytical Method: S 8021B
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	J	<1.00	mg/Kg	50	0.0200
Toluene		J	2.51	mg/Kg	50	0.0200
Ethylbenzene		J	6.05	mg/Kg	50	0.0200
Xylene		J	18.5	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			53.9	mg/Kg	50	50.0	108	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			66.4	mg/Kg	50	50.0	133	70.6 - 179

Sample: 275095 - BH-5 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84309
Prep Batch: 71475

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-29
Sample Preparation: 2011-08-23

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

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sample 275095 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1360	mg/Kg	50	4.00

Sample: 275095 - BH-5 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84149 Date Analyzed: 2011-08-22 Analyzed By: kg
Prep Batch: 71459 Sample Preparation: 2011-08-22 Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	22700	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q _{SP}		1260	mg/Kg	10	100	1260	67.5 - 147.1

Sample: 275095 - BH-5 0-1'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84193 Date Analyzed: 2011-08-23 Analyzed By: ME
Prep Batch: 71488 Sample Preparation: 2011-08-23 Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q _S	1	2320	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		51.6	mg/Kg	50	50.0	103	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		58.1	mg/Kg	50	50.0	116	22.4 - 149

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Sample: 275096 - BH-5 3'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84309 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 Sample Preparation: 2011-08-23 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			621	mg/Kg	50	4.00

Sample: 275096 - BH-5 3'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84194 Date Analyzed: 2011-08-23 Analyzed By: kg
Prep Batch: 71490 Sample Preparation: 2011-08-23 Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr, Qs	1	7840	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr		529	mg/Kg	10	100	529	67.5 - 147.1

Sample: 275096 - BH-5 3'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84261 Date Analyzed: 2011-08-25 Analyzed By: ME
Prep Batch: 71544 Sample Preparation: 2011-08-25 Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	1	914	mg/Kg	20	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		20.0	mg/Kg	20	20.0	100	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		21.8	mg/Kg	20	20.0	109	22.4 - 149

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Sample: 275097 - BH-5 5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 84309

Prep Batch: 71475

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-08-29

Sample Preparation: 2011-08-23

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

Sample: 275097 - BH-5 5'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 84194

Prep Batch: 71490

Analytical Method: S 8015 D

Date Analyzed: 2011-08-23

Sample Preparation: 2011-08-23

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr, Qs	1	661	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qs		174	mg/Kg	1	100	174	67.5 - 147.1

Sample: 275097 - BH-5 5'

Laboratory: Midland

Analysis: TPH GRO

QC Batch: 84287

Prep Batch: 71575

Analytical Method: S 8015 D

Date Analyzed: 2011-08-26

Sample Preparation: 2011-08-26

Prep Method: S 5035

Analyzed By: ME

Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	61.9	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.34	mg/Kg	1	2.00	117	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.32	mg/Kg	1	2.00	116	22.4 - 149

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Sample: 275098 - BH-5 7'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84309 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 Sample Preparation: 2011-08-23 Prepared By: AR

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

Sample: 275098 - BH-5 7'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84194 Date Analyzed: 2011-08-23 Analyzed By: kg
Prep Batch: 71490 Sample Preparation: 2011-08-23 Prepared By: kg

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			128	mg/Kg	1	100	128	67.5 - 147.1

Sample: 275098 - BH-5 7'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84287 Date Analyzed: 2011-08-26 Analyzed By: ME
Prep Batch: 71575 Sample Preparation: 2011-08-26 Prepared By: ME

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	2.63	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.42	mg/Kg	1	2.00	121	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	1	2.00	114	22.4 - 149

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Sample: 275099 - BH-6 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2011-08-29	Analyzed By:	AR
QC Batch:	84309	Sample Preparation:	2011-08-23	Prepared By:	AR
Prep Batch:	71475				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			363	mg/Kg	50	4.00

Sample: 275099 - BH-6 0-1'

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2011-08-22	Analyzed By:	kg
QC Batch:	84149	Sample Preparation:	2011-08-22	Prepared By:	kg
Prep Batch:	71459				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO			667	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			142	mg/Kg	1	100	142	67.5 - 147.1

Sample: 275099 - BH-6 0-1'

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2011-08-23	Analyzed By:	ME
QC Batch:	84193	Sample Preparation:	2011-08-23	Prepared By:	ME
Prep Batch:	71488				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs		126	mg/Kg	50	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		56.5	mg/Kg	50	50.0	113	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		54.7	mg/Kg	50	50.0	109	22.4 - 149

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Sample: 275100 - BH-6 3'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84348 Date Analyzed: 2011-08-30 Analyzed By: AR
Prep Batch: 71539 Sample Preparation: 2011-08-25 Prepared By: AR

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

Sample: 275100 - BH-6 3'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84194 Date Analyzed: 2011-08-23 Analyzed By: kg
Prep Batch: 71490 Sample Preparation: 2011-08-23 Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Q1, Q8, U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			131	mg/Kg	1	100	131	67.5 - 147.1

Sample: 275100 - BH-6 3'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 84287 Date Analyzed: 2011-08-26 Analyzed By: ME
Prep Batch: 71575 Sample Preparation: 2011-08-26 Prepared By: ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.26	mg/Kg	1	2.00	113	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.13	mg/Kg	1	2.00	106	22.4 - 149

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Sample: 275101 - BH-6 5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2011-08-30	Analyzed By:	AR
QC Batch:	84348	Sample Preparation:	2011-08-25	Prepared By:	AR
Prep Batch:	71539				

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

Sample: 275102 - BH-6 7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2011-08-30	Analyzed By:	AR
QC Batch:	84348	Sample Preparation:	2011-08-25	Prepared By:	AR
Prep Batch:	71539				

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

Sample: 275103 - BH-7 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2011-08-30	Analyzed By:	AR
QC Batch:	84348	Sample Preparation:	2011-08-25	Prepared By:	AR
Prep Batch:	71539				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			3220	mg/Kg	50	4.00

Sample: 275103 - BH-7 0-1'

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2011-08-22	Analyzed By:	kg
QC Batch:	84149	Sample Preparation:	2011-08-22	Prepared By:	kg
Prep Batch:	71459				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	2670	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	J,QSR		230	mg/Kg	5	100	230	67.5 - 147.1

Sample: 275103 - BH-7 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84193
Prep Batch: 71488

Analytical Method: S 8015 D
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	QSR	1	350	mg/Kg	20	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		22.7	mg/Kg	20	20.0	114	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		20.9	mg/Kg	20	20.0	104	22.4 - 149

Sample: 275104 - BH-7 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84348
Prep Batch: 71539

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-30
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1160	mg/Kg	50	4.00

Sample: 275104 - BH-7 3'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84194
Prep Batch: 71490

Analytical Method: S 8015 D
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr, Qs	1	968	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr		181	mg/Kg	1	100	181	67.5 - 147.1

Sample: 275104 - BH-7 3'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84287
Prep Batch: 71575

Analytical Method: S 8015 D
Date Analyzed: 2011-08-26
Sample Preparation: 2011-08-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	31.1	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.04	mg/Kg	1	2.00	102	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		1.97	mg/Kg	1	2.00	98	22.4 - 149

Sample: 275105 - BH-7 5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84348
Prep Batch: 71539

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-30
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1330	mg/Kg	50	4.00

Sample: 275105 - BH-7 5'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84264
Prep Batch: 71548

Analytical Method: S 8015 D
Date Analyzed: 2011-08-24
Sample Preparation: 2011-08-24

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

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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	QNT		256	mg/Kg	1	100	256	67.5 - 147.1

Sample: 275105 - BH-7 5'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84287
Prep Batch: 71575

Analytical Method: S 8015 D
Date Analyzed: 2011-08-26
Sample Preparation: 2011-08-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	45.3	mg/Kg	5	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		4.91	mg/Kg	5	5.00	98	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		4.53	mg/Kg	5	5.00	91	22.4 - 149

Sample: 275106 - BH-8 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84348
Prep Batch: 71539

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-30
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			4610	mg/Kg	100	4.00

Sample: 275106 - BH-8 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84149
Prep Batch: 71459

Analytical Method: S 8015 D
Date Analyzed: 2011-08-22
Sample Preparation: 2011-08-22

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			120	mg/Kg	1	100	120	67.5 - 147.1

Sample: 275106 - BH-8 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84193
Prep Batch: 71488

Analytical Method: S 8015 D
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q8, U	1	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.32	mg/Kg	1	2.00	116	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	22.4 - 149

Sample: 275107 - BH-8 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84348
Prep Batch: 71539

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-30
Sample Preparation: 2011-08-25

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

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

Sample: 275108 - BH-8 5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84348
Prep Batch: 71539

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-30
Sample Preparation: 2011-08-25

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

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

Sample: 275109 - BH-8 7'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84348 Date Analyzed: 2011-08-30 Analyzed By: AR
Prep Batch: 71539 Sample Preparation: 2011-08-25 Prepared By: AR

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

Sample: 275110 - BH-9 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 84349 Date Analyzed: 2011-08-30 Analyzed By: AR
Prep Batch: 71539 Sample Preparation: 2011-08-25 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			23200	mg/Kg	100	4.00

Sample: 275110 - BH-9 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 84149 Date Analyzed: 2011-08-22 Analyzed By: kg
Prep Batch: 71459 Sample Preparation: 2011-08-22 Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		i	656	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			132	mg/Kg	1	100	132	67.5 - 147.1

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Sample: 275110 - BH-9 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84193
Prep Batch: 71488

Analytical Method: S 8015 D
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	109	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	J		11.4	mg/Kg	10	10.0	114	30 - 134.6
4-Bromofluorobenzene (4-BFB)	J		10.7	mg/Kg	10	10.0	107	22.4 - 149

Sample: 275111 - BH-9 3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84349
Prep Batch: 71539

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-30
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			5020	mg/Kg	100	4.00

Sample: 275111 - BH-9 3'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84194
Prep Batch: 71490

Analytical Method: S 8015 D
Date Analyzed: 2011-08-23
Sample Preparation: 2011-08-23

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr, Qs	1	179	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			141	mg/Kg	1	100	141	67.5 - 147.1

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Sample: 275111 - BH-9 3'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 84287
Prep Batch: 71575

Analytical Method: S 8015 D
Date Analyzed: 2011-08-26
Sample Preparation: 2011-08-26

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	3.84	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.32	mg/Kg	1	2.00	116	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.18	mg/Kg	1	2.00	109	22.4 - 149

Sample: 275112 - BH-9 5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 84349
Prep Batch: 71539

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-08-30
Sample Preparation: 2011-08-25

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2530	mg/Kg	100	4.00

Sample: 275112 - BH-9 5'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 84264
Prep Batch: 71548

Analytical Method: S 8015 D
Date Analyzed: 2011-08-24
Sample Preparation: 2011-08-24

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	67.5 - 147.1

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Sample: 275112 - BH-9 5'

Laboratory: Midland

Analysis: TPH GRO

QC Batch: 84287

Prep Batch: 71575

Analytical Method: S 8015 D

Date Analyzed: 2011-08-26

Sample Preparation: 2011-08-26

Prep Method: S 5035

Analyzed By: ME

Prepared By: ME

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.29	mg/Kg	1	2.00	114	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.13	mg/Kg	1	2.00	106	22.4 - 149

Sample: 275113 - BH-9 7'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 84349

Prep Batch: 71539

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-08-30

Sample Preparation: 2011-08-25

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1880	mg/Kg	100	4.00

Sample: 275114 - BH-9 10'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 84349

Prep Batch: 71539

Analytical Method: SM 4500-Cl B

Date Analyzed: 2011-08-30

Sample Preparation: 2011-08-25

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

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Method Blanks

Method Blank (1) QC Batch: 84149

QC Batch: 84149 Date Analyzed: 2011-08-22 Analyzed By: kg
Prep Batch: 71459 QC Preparation: 2011-08-22 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			117	mg/Kg	1	100	117	52.7 - 133.8

Method Blank (1) QC Batch: 84192

QC Batch: 84192 Date Analyzed: 2011-08-23 Analyzed By: ME
Prep Batch: 71488 QC Preparation: 2011-08-23 Prepared By: ME

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)			1.84	mg/Kg	1	2.00	92	65.9 - 111.8
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	48.4 - 123.1

Method Blank (1) QC Batch: 84193

QC Batch: 84193 Date Analyzed: 2011-08-23 Analyzed By: ME
Prep Batch: 71488 QC Preparation: 2011-08-23 Prepared By: ME

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Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.753	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.78	mg/Kg	1	2.00	89	67.6 - 150
4-Bromofluorobenzene (4-BFB)			1.63	mg/Kg	1	2.00	82	52.4 - 130

Method Blank (1) QC Batch: 84194

QC Batch: 84194
Prep Batch: 71490

Date Analyzed: 2011-08-23
QC Preparation: 2011-08-23

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			106	mg/Kg	1	100	106	52.7 - 133.8

Method Blank (1) QC Batch: 84195

QC Batch: 84195
Prep Batch: 71491

Date Analyzed: 2011-08-23
QC Preparation: 2011-08-23

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			131	mg/Kg	1	100	131	52.7 - 133.8

Method Blank (1) QC Batch: 84261

QC Batch: 84261
Prep Batch: 71544

Date Analyzed: 2011-08-25
QC Preparation: 2011-08-25

Analyzed By: ME
Prepared By: ME

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Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.753	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	67.6 - 150
4-Bromofluorobenzene (4-BFB)			1.71	mg/Kg	1	2.00	86	52.4 - 130

Method Blank (1) QC Batch: 84264

QC Batch: 84264

Date Analyzed: 2011-08-24

Analyzed By: kg

Prep Batch: 71548

QC Preparation: 2011-08-24

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			128	mg/Kg	1	100	128	52.7 - 133.8

Method Blank (1) QC Batch: 84287

QC Batch: 84287

Date Analyzed: 2011-08-26

Analyzed By: ME

Prep Batch: 71575

QC Preparation: 2011-08-26

Prepared By: ME

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.753	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	67.6 - 150
4-Bromofluorobenzene (4-BFB)			1.66	mg/Kg	1	2.00	83	52.4 - 130

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Method Blank (1) QC Batch: 84307

QC Batch: 84307 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 QC Preparation: 2011-08-23 Prepared By: AR

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

Method Blank (1) QC Batch: 84308

QC Batch: 84308 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 QC Preparation: 2011-08-23 Prepared By: AR

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

Method Blank (1) QC Batch: 84309

QC Batch: 84309 Date Analyzed: 2011-08-29 Analyzed By: AR
Prep Batch: 71475 QC Preparation: 2011-08-23 Prepared By: AR

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

Method Blank (1) QC Batch: 84348

QC Batch: 84348 Date Analyzed: 2011-08-30 Analyzed By: AR
Prep Batch: 71539 QC Preparation: 2011-08-25 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: 84349

QC Batch: 84349
Prep Batch: 71539

Date Analyzed: 2011-08-30
QC Preparation: 2011-08-25

Analyzed By: AR
Prepared By: AR

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

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 84149
Prep Batch: 71459

Date Analyzed: 2011-08-22
QC Preparation: 2011-08-22

Analyzed By: kg
Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	277	mg/Kg	1	250	<14.5	111	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	305	mg/Kg	1	250	<14.5	122	64.5 - 146.9	10	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	118	125	mg/Kg	1	100	118	125	65.3 - 135.8

Laboratory Control Spike (LCS-1)

QC Batch: 84192
Prep Batch: 71488

Date Analyzed: 2011-08-23
QC Preparation: 2011-08-23

Analyzed By: ME
Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.00	mg/Kg	1	2.00	<0.0118	100	77.4 - 121.7
Toluene		1	2.00	mg/Kg	1	2.00	<0.00600	100	88.6 - 121.6
Ethylbenzene		1	2.02	mg/Kg	1	2.00	<0.00850	101	74.3 - 117.9
Xylene		1	6.04	mg/Kg	1	6.00	<0.00613	101	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	1.92	mg/Kg	1	2.00	<0.0118	96	77.4 - 121.7	4	20
Toluene		1	1.95	mg/Kg	1	2.00	<0.00600	98	88.6 - 121.6	2	20
Ethylbenzene		1	1.95	mg/Kg	1	2.00	<0.00850	98	74.3 - 117.9	4	20
Xylene		1	5.84	mg/Kg	1	6.00	<0.00613	97	73.4 - 118.8	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
Trifluorotoluene (TFT)	1.94	2.01	mg/Kg	1	2.00	97	100	65.5 - 116.7
4-Bromofluorobenzene (4-BFB)	1.96	2.00	mg/Kg	1	2.00	98	100	56.2 - 132.1

Laboratory Control Spike (LCS-1)

QC Batch: 84193
Prep Batch: 71488

Date Analyzed: 2011-08-23
QC Preparation: 2011-08-23

Analyzed By: ME
Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.7	mg/Kg	1	20.0	<0.753	78	60.9 - 95.4

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	16.4	mg/Kg	1	20.0	<0.753	82	60.9 - 95.4	4	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	1.86	mg/Kg	1	2.00	96	93	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.79	1.71	mg/Kg	1	2.00	90	86	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 84194
Prep Batch: 71490

Date Analyzed: 2011-08-23
QC Preparation: 2011-08-23

Analyzed By: kg
Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	244	mg/Kg	1	250	<14.5	98	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	220	mg/Kg	1	250	<14.5	88	64.5 - 146.9	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	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	101	88.2	mg/Kg	1	100	101	88	65.3 - 135.8

Laboratory Control Spike (LCS-1)

QC Batch: 84195
Prep Batch: 71491

Date Analyzed: 2011-08-23
QC Preparation: 2011-08-23

Analyzed By: kg
Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	290	mg/Kg	1	250	<14.5	116	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	303	mg/Kg	1	250	<14.5	121	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	125	130	mg/Kg	1	100	125	130	65.3 - 135.8

Laboratory Control Spike (LCS-1)

QC Batch: 84261
Prep Batch: 71544

Date Analyzed: 2011-08-25
QC Preparation: 2011-08-25

Analyzed By: ME
Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.8	mg/Kg	1	20.0	<0.753	84	60.9 - 95.4

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	16.0	mg/Kg	1	20.0	<0.753	80	60.9 - 95.4	5	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.96	1.64	mg/Kg	1	2.00	98	82	61.9 - 142

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	1.81	1.57	mg/Kg	1	2.00	90	78	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 84264
Prep Batch: 71548

Date Analyzed: 2011-08-24
QC Preparation: 2011-08-24

Analyzed By: kg
Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	260	mg/Kg	1	250	<14.5	104	64.5 - 146.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	294	mg/Kg	1	250	<14.5	118	64.5 - 146.9	12	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	117	132	mg/Kg	1	100	117	132	65.3 - 135.8

Laboratory Control Spike (LCS-1)

QC Batch: 84287
Prep Batch: 71575

Date Analyzed: 2011-08-26
QC Preparation: 2011-08-26

Analyzed By: ME
Prepared By: ME

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.1	mg/Kg	1	20.0	<0.753	86	60.9 - 95.4

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	18.3	mg/Kg	1	20.0	<0.753	92	60.9 - 95.4	7	20

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

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control spikes continued ...

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)	2.04	1.87	mg/Kg	1	2.00	102	94	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.89	1.76	mg/Kg	1	2.00	94	88	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 84307
Prep Batch: 71475

Date Analyzed: 2011-08-29
QC Preparation: 2011-08-23

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			94.1	mg/Kg	1	100	<3.85	94	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			105	mg/Kg	1	100	<3.85	105	85 - 115	11	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: 84308
Prep Batch: 71475

Date Analyzed: 2011-08-29
QC Preparation: 2011-08-23

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			93.6	mg/Kg	1	100	<3.85	94	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			105	mg/Kg	1	100	<3.85	105	85 - 115	12	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: 84309
Prep Batch: 71475

Date Analyzed: 2011-08-29
QC Preparation: 2011-08-23

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			94.1	mg/Kg	1	100	<3.85	94	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			106	mg/Kg	1	100	<3.85	106	85 - 115	12	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: 84348
Prep Batch: 71539

Date Analyzed: 2011-08-30
QC Preparation: 2011-08-25

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			95.9	mg/Kg	1	100	<3.85	96	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			107	mg/Kg	1	100	<3.85	107	85 - 115	11	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: 84349
Prep Batch: 71539

Date Analyzed: 2011-08-30
QC Preparation: 2011-08-25

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			95.3	mg/Kg	1	100	<3.85	95	85 - 115

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
Chloride			104	mg/Kg	1	100	<3.85	104	85 - 115	9	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: 275106

QC Batch: 84149
Prep Batch: 71459

Date Analyzed: 2011-08-22
QC Preparation: 2011-08-22

Analyzed By: kg
Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	242	mg/Kg	1	250	<14.5	97	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	241	mg/Kg	1	250	<14.5	96	38.8 - 153.3	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	118	118	mg/Kg	1	100	118	118	54.6 - 149.8

Matrix Spike (MS-1) Spiked Sample: 275215

QC Batch: 84192
Prep Batch: 71488

Date Analyzed: 2011-08-23
QC Preparation: 2011-08-23

Analyzed By: ME
Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	9.21	mg/Kg	10	10.0	<0.118	92	69.4 - 123.6
Toluene		1	9.44	mg/Kg	10	10.0	<0.0600	94	75.4 - 134.3
Ethylbenzene		1	9.37	mg/Kg	10	10.0	<0.0850	94	58.8 - 133.7
Xylene		1	28.2	mg/Kg	10	30.0	<0.0613	94	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	9.38	mg/Kg	10	10.0	<0.118	94	69.4 - 123.6	2	20
Toluene		1	9.53	mg/Kg	10	10.0	<0.0600	95	75.4 - 134.3	1	20

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matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		1	9.58	mg/Kg	10	10.0	<0.0850	96	58.8 - 133.7	2	20
Xylene		1	28.6	mg/Kg	10	30.0	<0.0613	95	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)	10.9	10.3	mg/Kg	10	10	109	103	79.4 - 141.1
4-Bromofluorobenzene (4-BFB)	11.1	10.7	mg/Kg	10	10	111	107	71 - 167

Matrix Spike (MS-1) Spiked Sample: 275110

QC Batch: 84193
Prep Batch: 71488

Date Analyzed: 2011-08-23
QC Preparation: 2011-08-23

Analyzed By: ME
Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	1	270	mg/Kg	10	100	109.342	161	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	1	311	mg/Kg	10	100	109.342	202	61.8 - 114	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)	11.4	11.4	mg/Kg	10	10	114	114	29.4 - 161.7
4-Bromofluorobenzene (4-BFB)	11.7	12.0	mg/Kg	10	10	117	120	37.3 - 162

Matrix Spike (MS-1) Spiked Sample: 275215

QC Batch: 84194
Prep Batch: 71490

Date Analyzed: 2011-08-23
QC Preparation: 2011-08-23

Analyzed By: kg
Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Qs	1	20200	mg/Kg	5	250	19400	320	38.8 - 153.3

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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Q ₁ , Q ₈	1	25100	mg/Kg	5	250	19400	2280	38.8 - 153.3	22	20

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

		MS	MSD			Spike	MS	MSD	Rec.
Surrogate		Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	Q ₈₁	1640	1800	mg/Kg	5	100	1640	1800	54.6 - 149.8

Matrix Spike (MS-1) Spiked Sample: 275074

QC Batch: 84195
Prep Batch: 71491

Date Analyzed: 2011-08-23
QC Preparation: 2011-08-23

Analyzed By: kg
Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Q ₈	1	1210	mg/Kg	1	250	1210	0	38.8 - 153.3

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Q ₈	1	1440	mg/Kg	1	250	1210	0	38.8 - 153.3	17	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	Q ₈₇	168	183	mg/Kg	1	100	168	183	54.6 - 149.8

Matrix Spike (MS-1) Spiked Sample: 275089

QC Batch: 84261
Prep Batch: 71544

Date Analyzed: 2011-08-25
QC Preparation: 2011-08-25

Analyzed By: ME
Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Q ₈	1	27.3	mg/Kg	1	20.0	19.3685	40	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	Q ₇	1	33.9	mg/Kg	1	20.0	19.3685	73	61.8 - 114	22	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
Trifluorotoluene (TFT)	2.18	2.38	mg/Kg	1	2	109	119	29.4 - 161.7
4-Bromofluorobenzene (4-BFB)	2.21	2.43	mg/Kg	1	2	110	122	37.3 - 162

Matrix Spike (MS-1) Spiked Sample: 275112

QC Batch: 84264
Prep Batch: 71548

Date Analyzed: 2011-08-24
QC Preparation: 2011-08-24

Analyzed By: kg
Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	291	mg/Kg	1	250	<14.5	116	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	269	mg/Kg	1	250	<14.5	108	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	131	123	mg/Kg	1	100	131	123	54.6 - 149.8

Matrix Spike (MS-1) Spiked Sample: 275380

QC Batch: 84287
Prep Batch: 71575

Date Analyzed: 2011-08-26
QC Preparation: 2011-08-26

Analyzed By: ME
Prepared By: ME

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.753	88	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	18.1	mg/Kg	1	20.0	<0.753	90	61.8 - 114	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	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.31	2.41	mg/Kg	1	2	116	120	29.4 - 161.7
4-Bromofluorobenzene (4-BFB)	2.25	2.36	mg/Kg	1	2	112	118	37.3 - 162

Matrix Spike (MS-1) Spiked Sample: 275081

QC Batch: 84307
Prep Batch: 71475

Date Analyzed: 2011-08-29
QC Preparation: 2011-08-23

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			9840	mg/Kg	100	10000	<385	96	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			10500	mg/Kg	100	10000	<385	103	79.4 - 120.6	6	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: 275091

QC Batch: 84308
Prep Batch: 71475

Date Analyzed: 2011-08-29
QC Preparation: 2011-08-23

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			11300	mg/Kg	100	10000	1590	97	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			12100	mg/Kg	100	10000	1590	105	79.4 - 120.6	7	20

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

Matrix Spike (MS-1) Spiked Sample: 275099

QC Batch: 84309
Prep Batch: 71475

Date Analyzed: 2011-08-29
QC Preparation: 2011-08-23

Analyzed By: AR
Prepared By: AR

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10500	mg/Kg	100	10000	<385	101	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			11200	mg/Kg	100	10000	<385	108	79.4 - 120.6	6	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: 275109

QC Batch: 84348
Prep Batch: 71539

Date Analyzed: 2011-08-30
QC Preparation: 2011-08-25

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	100	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			10800	mg/Kg	100	10000	<385	106	79.4 - 120.6	6	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: 275195

QC Batch: 84349
Prep Batch: 71539

Date Analyzed: 2011-08-30
QC Preparation: 2011-08-25

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10500	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			11200	mg/Kg	100	10000	<385	109	79.4 - 120.6	6	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 84149

Date Analyzed: 2011-08-22

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	268	107	80 - 120	2011-08-22

Standard (CCV-2)

QC Batch: 84149

Date Analyzed: 2011-08-22

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	226	90	80 - 120	2011-08-22

Standard (CCV-3)

QC Batch: 84149

Date Analyzed: 2011-08-22

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	247	99	80 - 120	2011-08-22

Standard (CCV-1)

QC Batch: 84192

Date Analyzed: 2011-08-23

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0930	93	80 - 120	2011-08-23
Toluene		1	mg/Kg	0.100	0.0943	94	80 - 120	2011-08-23

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ethylbenzene		1	mg/Kg	0.100	0.0929	93	80 - 120	2011-08-23
Xylene		1	mg/Kg	0.300	0.280	93	80 - 120	2011-08-23

Standard (CCV-2)

QC Batch: 84192

Date Analyzed: 2011-08-23

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.104	104	80 - 120	2011-08-23
Toluene		1	mg/Kg	0.100	0.104	104	80 - 120	2011-08-23
Ethylbenzene		1	mg/Kg	0.100	0.103	103	80 - 120	2011-08-23
Xylene		1	mg/Kg	0.300	0.309	103	80 - 120	2011-08-23

Standard (CCV-1)

QC Batch: 84193

Date Analyzed: 2011-08-23

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.01	101	80 - 120	2011-08-23

Standard (CCV-2)

QC Batch: 84193

Date Analyzed: 2011-08-23

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.01	101	80 - 120	2011-08-23

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Standard (CCV-1)

QC Batch: 84194

Date Analyzed: 2011-08-23

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	243	97	80 - 120	2011-08-23

Standard (CCV-2)

QC Batch: 84194

Date Analyzed: 2011-08-23

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	288	115	80 - 120	2011-08-23

Standard (CCV-3)

QC Batch: 84194

Date Analyzed: 2011-08-23

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	290	116	80 - 120	2011-08-23

Standard (CCV-1)

QC Batch: 84195

Date Analyzed: 2011-08-23

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	292	117	80 - 120	2011-08-23

Standard (CCV-2)

QC Batch: 84195

Date Analyzed: 2011-08-23

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	214	86	80 - 120	2011-08-23

Standard (CCV-1)

QC Batch: 84261

Date Analyzed: 2011-08-25

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.02	102	80 - 120	2011-08-25

Standard (CCV-2)

QC Batch: 84261

Date Analyzed: 2011-08-25

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.02	102	80 - 120	2011-08-25

Standard (CCV-3)

QC Batch: 84261

Date Analyzed: 2011-08-25

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.06	106	80 - 120	2011-08-25

Standard (CCV-1)

QC Batch: 84264

Date Analyzed: 2011-08-24

Analyzed By: kg

Report Date: August 31, 2011
114-6400990

Work Order: 11082204
COG/Chicken Hawk State #1

Page Number: 68 of 72
Eddy Co., NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		,	mg/Kg	250	297	119	80 - 120	2011-08-24

Standard (CCV-2)

QC Batch: 84264

Date Analyzed: 2011-08-24

Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		,	mg/Kg	250	298	119	80 - 120	2011-08-24

Standard (CCV-3)

QC Batch: 84264

Date Analyzed: 2011-08-24

Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		,	mg/Kg	250	275	110	80 - 120	2011-08-24

Standard (CCV-1)

QC Batch: 84287

Date Analyzed: 2011-08-26

Analyzed By: ME

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		,	mg/Kg	1.00	1.10	110	80 - 120	2011-08-26

Standard (CCV-2)

QC Batch: 84287

Date Analyzed: 2011-08-26

Analyzed By: ME

Report Date: August 31, 2011
114-6400990

Work Order: 11082204
COG/Chicken Hawk State #1

Page Number: 69 of 72
Eddy Co., NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO			mg/Kg	1.00	0.985	98	80 - 120	2011-08-26

Standard (ICV-1)

QC Batch: 84307

Date Analyzed: 2011-08-29

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	103	103	85 - 115	2011-08-29

Standard (CCV-1)

QC Batch: 84307

Date Analyzed: 2011-08-29

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	96.6	97	85 - 115	2011-08-29

Standard (ICV-1)

QC Batch: 84308

Date Analyzed: 2011-08-29

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	100	100	85 - 115	2011-08-29

Standard (CCV-1)

QC Batch: 84308

Date Analyzed: 2011-08-29

Analyzed By: AR

Report Date: August 31, 2011
114-6400990

Work Order: 11082204
COG/Chicken Hawk State #1

Page Number: 70 of 72
Eddy Co., NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.6	100	85 - 115	2011-08-29

Standard (ICV-1)

QC Batch: 84309

Date Analyzed: 2011-08-29

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	99.1	99	85 - 115	2011-08-29

Standard (CCV-1)

QC Batch: 84309

Date Analyzed: 2011-08-29

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	101	101	85 - 115	2011-08-29

Standard (ICV-1)

QC Batch: 84348

Date Analyzed: 2011-08-30

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	99.6	100	85 - 115	2011-08-30

Standard (CCV-1)

QC Batch: 84348

Date Analyzed: 2011-08-30

Analyzed By: AR

Report Date: August 31, 2011
114-6400990

Work Order: 11082204
COG/Chicken Hawk State #1

Page Number: 71 of 72
Eddy Co., NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2011-08-30

Standard (ICV-1)

QC Batch: 84349

Date Analyzed: 2011-08-30

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	99.0	99	85 - 115	2011-08-30

Standard (CCV-1)

QC Batch: 84349

Date Analyzed: 2011-08-30

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	101	101	85 - 115	2011-08-30

Appendix

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.

*wo #: 11082204

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 5

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

 ANALYSIS REQUEST
 (Circle or Specify Method No.)

CLIENT NAME: COG			SITE MANAGER: Ike Tavares			NUMBER OF CONTAINERS	PRESERVATIVE METHOD				BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd 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	
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB		NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3																		ICE
PROJECT NO.: 114-640 0990						PROJECT NAME: Chicken Hawk State #1																						
Eddy Co., NM						SAMPLE IDENTIFICATION																						
075072	8/17		S	X		BH-1	0-1'	(2' BEB)	1																			
073							3'	(2' BEB)	1																			
074							5'	(2' BEB)	1																			
075							7'	(2' BEB)	1																			
076							10'	(2' BEB)	1																			
077							15'	(2' BEB)	1																			
078						BH-2	0-1'	(2' BEB)	1																			
079							3'	(2' BEB)	1																			
080							5'	(2' BEB)	1																			
081							7'	(2' BEB)	1																			

RELINQUISHED BY: (Signature)	Date: 8/19/11	RECEIVED BY: (Signature)	Date: 8/19/11	SAMPLED BY: (Print & Initial)	Date: 8/19/11
	Time: 1530		Time: 1530	Kim	Time:
RELINQUISHED BY: (Signature)	Date:	RECEIVED BY: (Signature)	Date:	SAMPLE SHIPPED BY: (Circle)	AIRBILL #:
	Time:		Time:	FEDEX	
RELINQUISHED BY: (Signature)	Date:	RECEIVED BY: (Signature)	Date:	HAND DELIVERED	OTHER:
	Time:		Time:	UPS	
RECEIVING LABORATORY: TRACE	RECEIVED BY: (Signature)	TETRA TECH CONTACT PERSON:		Results by:	
ADDRESS:		Ike Tavares			
CITY: MIDLAND STATE: TX ZIP:				RUSH Charges	
CONTACT: PHONE:	DATE:	TIME:		Authorized:	
				Yes No	
SAMPLE CONDITION WHEN RECEIVED:	REMARKS:				
-1.9°C intact	If TPH > 1,000 mg/kg - Run deeper samples				

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 4 Highest TPH for BTEX

*wo #: 11082204

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 5

**TETRA TECH**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:

COG

SITE MANAGER:

Ike Taurer

PROJECT NO.:

114-6400990

PROJECT NAME:

Chicken Hawk State #1

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	Eddy Co., NM SAMPLE IDENTIFICATION
275882	2011 8/17		S	X		BH-2 10' (2' BEB)
083						BH-3 0-1' (2' DEB)
084						3' (2' DEB)
085						5' (2' BEB)
086						7' (2' DEB)
087						10' (2' BEB)
088						15' (2' BEB)
089						20' (2' BEB)
090						BH-4 0-1'
091						3'

RELINQUISHED BY: (Signature)

Date: 8/19/11
Time: 1530

RECEIVED BY: (Signature)

Date: 8/19/11
Time: 1530

SAMPLED BY: (Print & Initial)

Kim

Date: 8/19/11
Time:

RELINQUISHED BY: (Signature)

Date: _____
Time: _____

RECEIVED BY: (Signature)

Date: _____
Time: _____

SAMPLE SHIPPED BY: (Circle)

FEDEX
HAND DELIVERED
BUS
UPS

AIRBILL #: _____

OTHER: _____

RELINQUISHED BY: (Signature)

Date: _____
Time: _____

RECEIVED BY: (Signature)

Date: _____
Time: _____

TETRA TECH CONTACT PERSON:

Ike Taurer

Results by:

RUSH Charges
Authorized:

Yes No

RECEIVING LABORATORY:

ADDRESS: TRAC
CITY: MIDLAND STATE: TX

CONTACT: _____ PHONE: _____

RECEIVED BY: (Signature)

DATE: _____ TIME: _____

SAMPLE CONDITION WHEN RECEIVED:

-1.9°C intact

REMARKS:

IF TPH > 1,000 mg/kg - Run deeper samples

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

XWO #: 11082204

Analysis Request of Chain of Custody Record

PAGE: 3 OF: 5

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

 ANALYSIS REQUEST
 (Circle or Specify Method No.)

CLIENT NAME:

COG

SITE MANAGER:

Ike Tavaraz

PROJECT NO.:

114-6400990

PROJECT NAME:

Chicken Hawk State #1

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF FILTERED (Y)	HCL	HNO3	ICE	NONE	BTEX 8021B	CPH 8015	PAH 8270	RCRA Metals	TCLP Metals	TCLP Volatiles	TCLP Semi V	RCI	GC/MS Vol. 8	GC/MS Semi	PCB's 8080/0	Pest. 808/60	Chlordane	Gamma Spe	Alpha Beta (	PLM (Asbest	Major Anions
275092	8/17		S	X		BH-4 5'	1			X														X				
093						7'	1			X														X				
094						10'	1			X														X				
095	8/18					BH-5 0-1'	1			X			X											X				
096						3'	1			X														X				
097						5'	1			X														X				
098						7'	1			X														X				
099						BH-6 0-1'	1			X			X											X				
100						3'	1			X														X				
101						5'	1			X														X				

RELINQUISHED BY: (Signature)

Date:

8/19/11

Time:

1530

RECEIVED BY: (Signature)

Date:

8/19/11

Time:

1530

SAMPLED BY: (Print & Initial)

Kim

Date:

8/19/11

Time:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

SAMPLE SHIPPED BY: (Circle)

Kim

Date:

8/19/11

Time:

RELINQUISHED BY: (Signature)

Date:

Time:

RECEIVED BY: (Signature)

Date:

Time:

SAMPLE SHIPPED BY: (Circle)

Kim

Date:

8/19/11

Time:

RECEIVING LABORATORY:

TRACE

RECEIVED BY: (Signature)

ADDRESS:

CITY:

MIDLAND

STATE:

TX

ZIP:

CONTACT:

PHONE:

DATE:

TIME:

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

- 1.9' c intact

IR TPH > 1,000 mg/kg - Run deeper samples

TETRA TECH CONTACT PERSON:

Ike Tavaraz

Results by:

RUSH Charges

Authorized:

Yes

No

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 4 Highest TPH for BTEX

* WO #: 11082204

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 5

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

 ANALYSIS REQUEST
 (Circle or Specify Method No.)

CLIENT NAME:

COG

SITE MANAGER:

Ike Tavares

PROJECT NO.:

114-6400990

PROJECT NAME:

Chicken Hawk State #1

LAB I.D.
NUMBERDATE
2011

TIME

MATRIX
COMF.
GRAB

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNO3

ICE

NONE

PRESERVATIVE
METHOD
 BTEX 8021B
 TPH 8015 MQA (Ext. to C35)
 PAH 8270
 ROHA 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

275102

8/18

S

X

BH-6 7'

1

X

103

BH-7 0-1'

1

X

X

104

3'

1

X

105

5'

1

X

106

BH-8 0-1'

1

X

X

107

3'

1

X

108

5'

1

X

109

7'

1

X

110

BH-9 0-1'

1

X

X

111

3'

1

X

RELINQUISHED BY: (Signature)

Date:

8/19/11

Time:

15:30

RECEIVED BY: (Signature)

Date:

* WO #: 11082204

Analysis Request of Chain of Custody Record



TETRA TECH

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

PAGE: 5 OF: 5

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG SITE MANAGER: Ike Tavaraz
PROJECT NO.: 114-6400990 PROJECT NAME: Chicken Hawk State #1

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF	FILTERED	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015	PAH 8270	RCRA Metal	TCLP Metal	TCLP Volatili	TCLP Semi	RCI	GC.MS Vol.	GC.MS Sem	PCB's 8080/	Pest. 808/6(	Chlorides	Gamma Spe	Alpha Beta	PLM (Asbes	Major Antion	
275112	8/18		S	X		BH-9 5'	1				X														X					
113	1		1	1		7'	1				X														X					
114	1		1	1		10'	1				X														X					

RELINQUISHED BY: (Signature) [Signature] Date: 8/19/11 Time: 1530 RECEIVED BY: (Signature) [Signature] Date: 8/19/11 Time: 1530 SAMPLED BY: (Print & Initial) Kim Date: 8/19/11 Time: 1530

RELINQUISHED BY: (Signature) Date: Time: RECEIVED BY: (Signature) Date: Time: SAMPLE SHIPPED BY: (Circle) AIRBILL #: FEDEX HAND DELIVERED BUS UPS OTHER:

RELINQUISHED BY: (Signature) Date: Time: RECEIVED BY: (Signature) Date: Time: TETRA TECH CONTACT PERSON: Ike Tavaraz Results by: RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: TRAC RECEIVED BY: (Signature) ADDRESS: MIDLAND STATE: TX ZIP: PHONE: DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED: 1.9' intact REMARKS: IF TPH > 1,000 mg/kg - Run deeper samples

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 4 highest TPH for BTEX

Summary Report

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

Report Date: February 9, 2012

Work Order: 12013118

Project Location: Eddy Co., NM
Project Name: COG/Chicken Hawk State #1
Project Number: 114-6400990

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
287904	CS-1 Bottomhole 4' (BH-1)	soil	2012-01-26	00:00	2012-01-31
287905	CS-2 Bottomhole 4' (BH-2)	soil	2012-01-26	00:00	2012-01-31
287906	CS-7 Bottomhole 1.5' (BH-7)	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)
287904 - CS-1 Bottomhole 4' (BH-1)	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	7.28 Qs
287905 - CS-2 Bottomhole 4' (BH-2)	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	10.4 Qs
287906 - CS-7 Bottomhole 1.5' (BH-7)	<0.200	<0.200	<0.200	<0.200	1610	155 Qs

Sample: 287906 - CS-7 Bottomhole 1.5' (BH-7)

Param	Flag	Result	Units	RL
Chloride		658	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1296
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 Tavaréz
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: February 9, 2012

Work Order: 12013118

Project Location: Eddy Co., NM
Project Name: COG/Chicken Hawk State #1
Project Number: 114-6400990

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
287904	CS-1 Bottomhole 4' (BH-1)	soil	2012-01-26	00:00	2012-01-31
287905	CS-2 Bottomhole 4' (BH-2)	soil	2012-01-26	00:00	2012-01-31
287906	CS-7 Bottomhole 1.5' (BH-7)	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 18 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

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Case Narrative

Samples for project COG/Chicken Hawk State #1 were received by TraceAnalysis, Inc. on 2012-01-31 and assigned to work order 12013118. Samples for work order 12013118 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
Chloride (Titration)	SM 4500-Cl B	75016	2012-02-06 at 09:29	88377	2012-02-07 at 13:57
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

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 12013118 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: February 9, 2012
114-6400990

Work Order: 12013118
COG/Chicken Hawk State #1

Page Number: 4 of 18
Eddy Co., NM

Analytical Report

Sample: 287904 - CS-1 Bottomhole 4' (BH-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)			2.01	mg/Kg	1	2.00	100	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	70.6 - 179

Sample: 287904 - CS-1 Bottomhole 4' (BH-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	u	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	61.5 - 159

Sample: 287904 - CS-1 Bottomhole 4' (BH-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	7.28	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.59	mg/Kg	1	2.00	130	22.4 - 149

Sample: 287905 - CS-2 Bottomhole 4' (BH-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	u	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.05	mg/Kg	1	2.00	102	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70.6 - 179

Sample: 287905 - CS-2 Bottomhole 4' (BH-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	<50.0	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: 287905 - CS-2 Bottomhole 4' (BH-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	Qs	2	10.4	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)			2.48	mg/Kg	1	2.00	124	22.4 - 149

Sample: 287906 - CS-7 Bottomhole 1.5' (BH-7)

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	<0.200	mg/Kg	10	0.0200
Toluene	u	2	<0.200	mg/Kg	10	0.0200
Ethylbenzene	u	2	<0.200	mg/Kg	10	0.0200
Xylene	u	2	<0.200	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			10.0	mg/Kg	10	10.0	100	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			9.71	mg/Kg	10	10.0	97	70.6 - 179

Sample: 287906 - CS-7 Bottomhole 1.5' (BH-7)

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 88377
Prep Batch: 75016

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-02-07
Sample Preparation: 2012-02-07

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

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			658	mg/Kg	50	4.00

Sample: 287906 - CS-7 Bottomhole 1.5' (BH-7)

Laboratory: Lubbock
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 88324 Date Analyzed: 2012-02-06 Analyzed By: CM
Prep Batch: 74990 Sample Preparation: 2012-02-03 Prepared By: CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	1610	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q _{sr}	Q _{sr}	192	mg/Kg	5	100	192	61.5 - 159

Sample: 287906 - CS-7 Bottomhole 1.5' (BH-7)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 88262 Date Analyzed: 2012-02-02 Analyzed By: tc
Prep Batch: 74935 Sample Preparation: 2012-02-02 Prepared By: tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q _{sr}	2	155	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.95	mg/Kg	10	10.0	100	30 - 134.6
4-Bromofluorobenzene (4-BFB)			11.3	mg/Kg	10	10.0	113	22.4 - 149

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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: 88324

QC Batch: 88324
Prep Batch: 74990

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

Analyzed By: CM
Prepared By: CM

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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

Method Blank (1) QC Batch: 88377

QC Batch: 88377
Prep Batch: 75016

Date Analyzed: 2012-02-07
QC Preparation: 2012-02-06

Analyzed By: AR
Prepared By: AR

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

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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: 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	LCS 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	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
n-Tricosane	99.7	102	mg/Kg	1	100	100	102	61.5 - 159

Laboratory Control Spike (LCS-1)

QC Batch: 88377
Prep Batch: 75016

Date Analyzed: 2012-02-07
QC Preparation: 2012-02-06

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			93.5	mg/Kg	1	100	<3.85	94	85 - 115

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
Chloride			102	mg/Kg	1	100	<3.85	102	85 - 115	9	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: 287908

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	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

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matrix spikes continued ...

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

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

Matrix Spike (MS-1) Spiked Sample: 287974

QC Batch: 88377
Prep Batch: 75016

Date Analyzed: 2012-02-07
QC Preparation: 2012-02-06

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			14600	mg/Kg	100	10000	3760	108	79.4 - 120.6

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 Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			15100	mg/Kg	100	10000	3760	113	79.4 - 120.6	3	20

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

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

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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-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

Standard (ICV-1)

QC Batch: 88377

Date Analyzed: 2012-02-07

Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	96.4	96	85 - 115	2012-02-07

Standard (CCV-1)

QC Batch: 88377

Date Analyzed: 2012-02-07

Analyzed By: AR

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	104	104	85 - 115	2012-02-07

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.

12613118

Analysis Request of Chain of Custody Record

**TETRA TECH**

1910 N. Big Spring St.

Midland, Texas 79705

(432) 682-4559 • Fax (432) 682-3946

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ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:

COG

SITE MANAGER:

Ike Tovar

PROJECT NO.:

17-6400190

PROJECT NAME:

COG/ Chicken Hawk State #1 TB

Edly Co. NM

SAMPLE IDENTIFICATION

LAB I.D.
NUMBER

DATE

TIME

MATRIX

COMP

GRAB

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNO3

ICE

NONE

PRESERVATIVE
METHOD(BTEX 8021B)
(TPH 8015 MOD.) TX1005 (Ext. to C35)

PAH 8270

RCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Vr Pd Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC-MS Vol. 8240/8260/624

GC-MS Semi. Vol. 8270/625

PCB's 8080/608

Pest. 808/608

Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

Major Anions/Cations, pH, TDS

RELINQUISHED BY: (Signature)

Date:

1/21/12

RECEIVED BY: (Signature)

Date:

1/21/12

SAMPLED BY: (Print & Initial)

Date:

1/21/12

RELINQUISHED BY: (Signature)

Date:

1/21/12

RECEIVED BY: (Signature)

Date:

1/21/12

SAMPLE SHIPPED BY: (Circle)

AIRBILL #: 20111207

RELINQUISHED BY: (Signature)

Date:

1/21/12

RECEIVED BY: (Signature)

Date:

1/21/12

FEDEX BUS

HAND DELIVERED UPS

OTHER:

RECEIVING LABORATORY:

Time

RECEIVED BY: (Signature)

ADDRESS:

CITY: Midland

STATE: TX

ZIP:

DATE: 2/2/12

TIME: 9:30

TETRA TECH CONTACT PERSON:

Ike Tovar

Results by:

RUSH Charges

Authorized:

Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

6.0 intact

Midland - BTEX/TPH/Chloride/Lead - TPH - DR

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

IC-7 N319497