SITE INFORMATION

Report Type: Closure Report

General Site Information:		
Site:	Muskegon 16 State Com #1 Tank Battery	
Company:	COG Operating LLC	
Section, Township and Range	Unit N - Sec 16 - T17S - R29E	
Lease Number:	30-015-27108	
County:	Eddy County	
GPS:	32.82888° N	104.08204° W
Surface Owner:	State	
Mineral Owner:		
Directions:		

Release Data:	
Date Released:	10/28/2009
Type Release:	Oil and Produced Water
Source of Contamination:	Tank Overflow
Fluid Released:	50 bbls
Fluids Recovered:	35 bbls

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

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

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

TETRA TECH

April 6, 2011

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

RECEIVED
APR 22 2011
NMOCD ARTESIA

Re: Closure Report for the COG Operating LLC., Muskegon 16 State Com #1 Tank Battery, Unit N, Section 16, Township 17 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill at the Muskegon 16 State Com #1 Tank Battery located in Unit N, Section 16, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.82888°, W 104.08204°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on October 28, 2009. Approximately ten (10) barrels of crude oil and forty (40) barrels of produced water were released due to a pump malfunction and a tank overflowing. Vacuum trucks were utilized to recover five (5) barrels of crude oil and thirty (30) barrels of standing fluids. The initial and final C-141 forms are included in Appendix A.

Groundwater

A water well located in Section 22, Township 17 South, Range 29 East, was measured using a steel tape to gauge the depth to water. The water well was not in use at the time and the static depth to water was measured at approximately 82.0'. The United States Geological Survey (USGS) database did show a well in Section 22, Township 17 South, Range 29 East with reported depth to water of 80' below surface. The Geology and Groundwater Resources of Eddy County, New Mexico showed a well in Section 22, Township 17 South, Range 29 East to have been measured with a depth to water of 79.7' below surface. Copies of the well data are included in Appendix B.

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

Regulatory

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

Soil Assessment and Results

On November 10, 2009, Tetra Tech personnel inspected the spill area. The spill originated from an open water tank and migrated north of the pad, at a width of approximately 5.0'. The spill then migrated off the pad along the southeast edge of the closed reserve pit and down the lease road (1.0' wide), which had been back dragged with a backhoe. A total of seven (7) auger holes (AH-1 through AH-7) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. The auger hole locations are shown on Figure 3. The results of the sampling are summarized in Table 1.

Referring to Table 1, all submitted samples were below the RRAL for TPH and BTEX. On the pad, elevated chloride concentrations were detected in AH-4 and AH-5 and were not vertically defined at 7-7.5' and 4.0', respectively. The area of AH-7 (reserve pit) did show a chloride impact to the soils. However, this may be from the former reserve pit area.

On February 10, 2010, Tetra Tech personnel were onsite to install one (1) soil boring (SB-1) utilizing an air rotary rig. SB-1 was installed between the previous auger holes (AH-4 and AH-5), which were not vertically defined. The soil boring was extended to a maximum depth of 31' feet bgs, with samples collected at 2 to 3 foot intervals for the first 10 feet and 5 foot intervals thereafter. The samples were submitted to the laboratory for analysis of chlorides. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The soil boring results are summarized in Table 2. The soil boring location is shown on Figure 3.

Referring to Table 2, the chloride concentrations ranged from <200 mg/kg at 15.0' to 1,700 mg/kg at 0-1'. The chloride concentrations declined with depth to <200 mg/kg at 15' below surface.

TETRA TECH

Corrective Action

On October 12, 2010, Tetra Tech supervised the excavation of the impacted soils. As approved by the NMOCD, the areas of AH-2 and AH-6 were excavated to approximately 2.0' below surface and areas of AH-4 and AH-5 to a depth of 10.0' below surface on. Approximately 240 yds^3 of soil were hauled to Controlled Recovery, Inc. for proper disposal. Once excavated to appropriate depths, the excavations were backfilled with clean soil. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4.

Closure Request

Based upon the remediation performed at this site, COG Operating LLC respectfully requests closure of this site. A C-141 final is included in Appendix A. If you have any question or comments concerning the activities performed at the Site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH, INC.

Ike Tavarez
Senior Project Manager

cc: Pat Ellis – COG

FIGURES

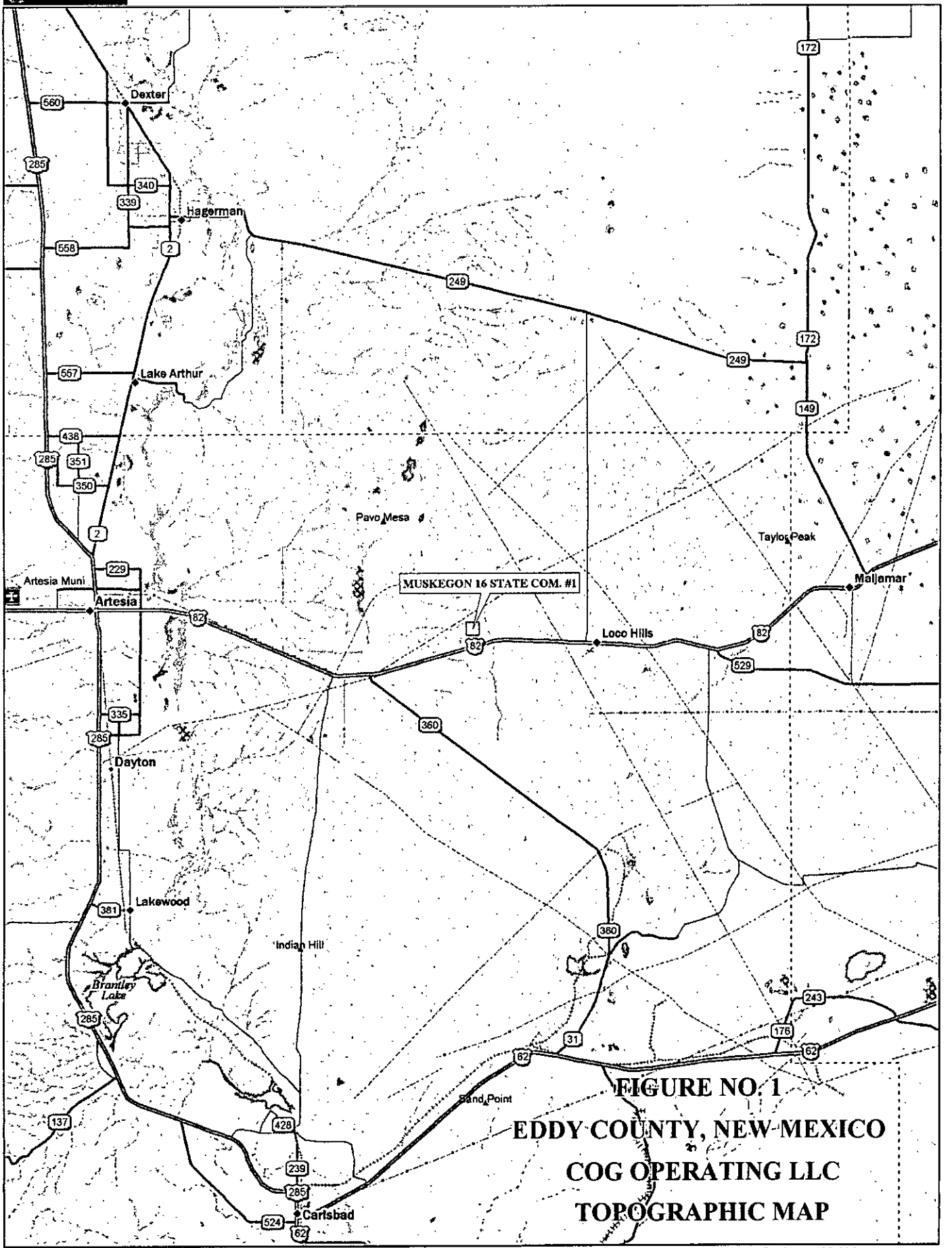


FIGURE NO. 1
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

TN

MN (7.6°E)

Scale 1 : 400,000

1" = 6.31 mi

Data Zoom 9-0

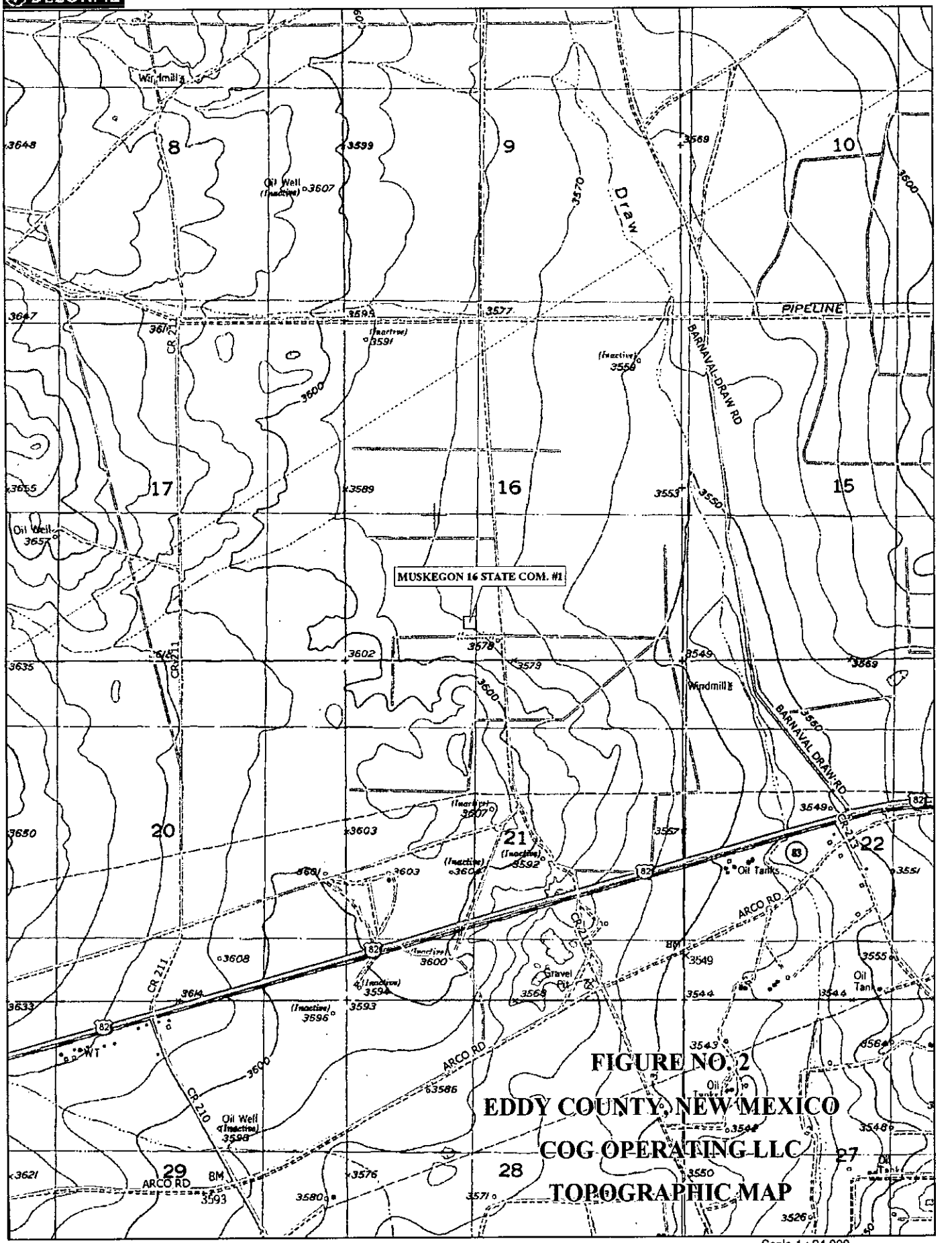


FIGURE NO. 2

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

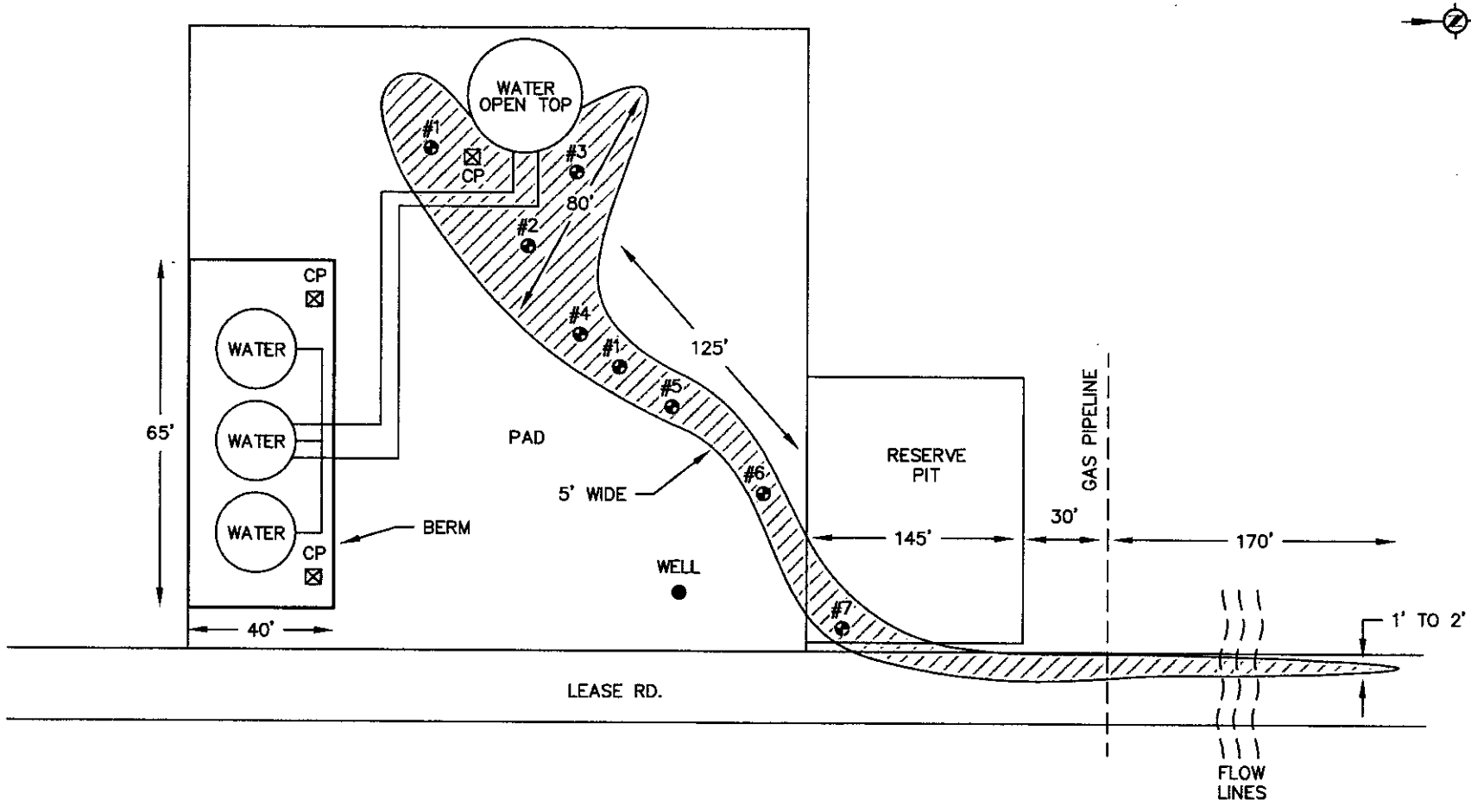
TN

MN (7.9°E)

Scale 1 : 24,000

1" = 2,000.0 ft

Data Zoom 13-1



SPILL AREA
SAMPLE LOCATIONS
SOIL BORING LOCATION

NOT TO SCALE

FIGURE NO. 3

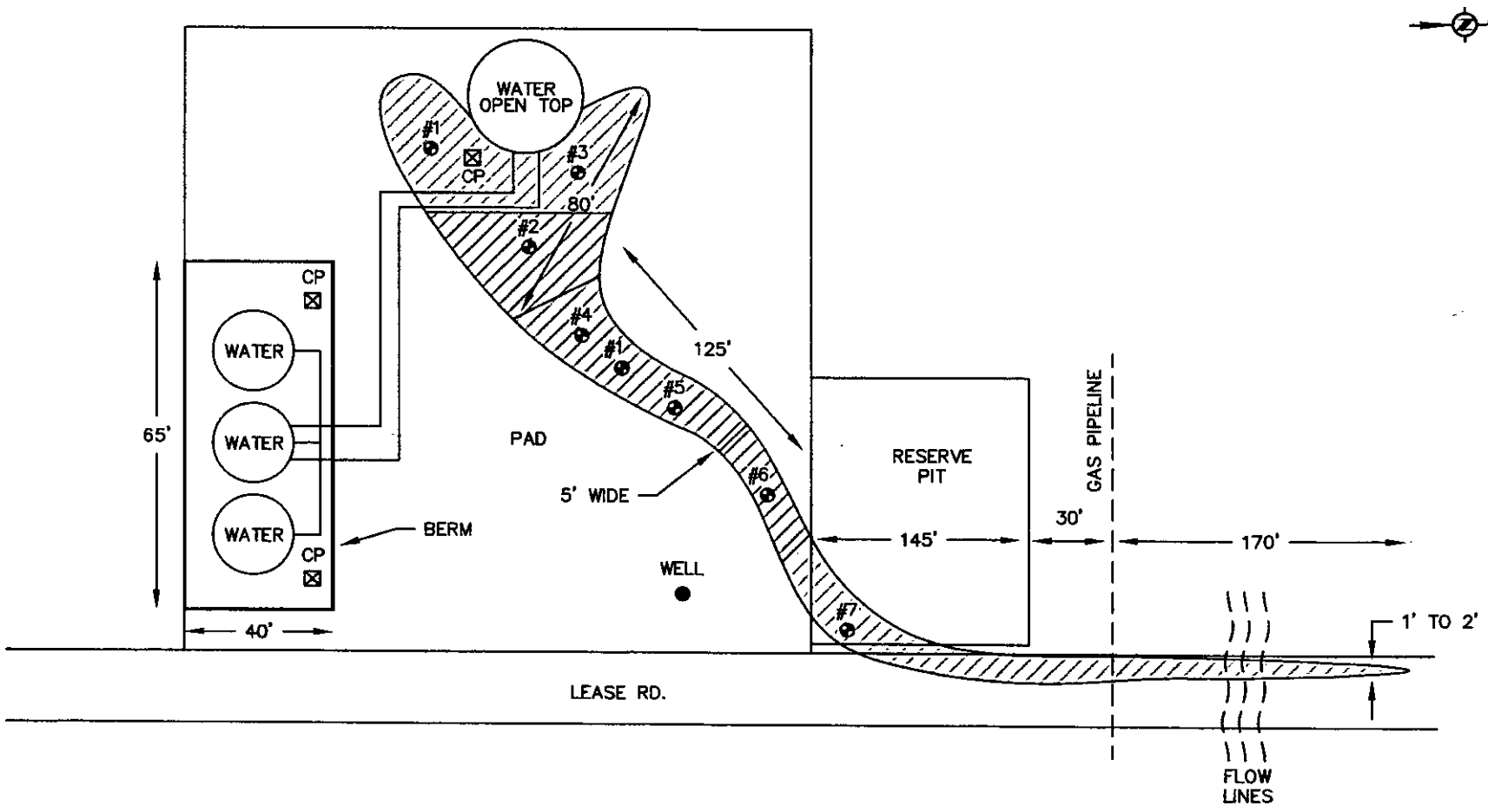
EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

MUSKEGON 16 STATE COM. #1 TB

DATE: 11/20/09
DWN. BY: JJ
FILE: N:\COG\6400384 MUSKEGON 16 STATE

TETRA TECH, INC.
MIDLAND, TEXAS



SPILL AREA
EXCAVATED AREA 2.0' DEEP
EXCAVATED AREA 10.0' DEEP
SAMPLE LOCATIONS
SOIL BORING LOCATION

NOT TO SCALE

FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

MUSKEGON 16 STATE COM. #1 TB

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 11/20/09
DWN. BY: JJ
FILE:

TABLES

Table 1
COG Operating LLC.
Muskegon 16 State #1
EDDY COUNTY, NEW MEXICO

Sample ID	Date Sampled	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	11/10/2009	0-1'	N/A	X		<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	287
		1-1.5'	N/A	X		-	-	-	-	-	-	-	218
		2-2.5'	N/A	X		-	-	-	-	-	-	-	<200
AH-2	11/10/2009	0-1'	N/A		X	4.76	<50.0	4.76	<0.0100	<0.0100	<0.0100	<0.0100	1,690
		1-1.5'	N/A		X	-	-	-	-	-	-	-	2,910
		2-2.5'	N/A		X	-	-	-	-	-	-	-	1,190
		3-3.5'	N/A	X		-	-	-	-	-	-	-	305
		4-4.5'	N/A	X		-	-	-	-	-	-	-	424
AH-3	11/10/2009	0-1'	N/A	X		<1.00	<50.0	<50.0	-	-	-	-	<200
		1-1.5'	N/A	X		-	-	-	-	-	-	-	<200
		2-2.5'	N/A	X		-	-	-	-	-	-	-	<200
AH-4	11/13/2009	0-1'	N/A		X	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	9,520
		1-1.5'	N/A		X	-	-	-	-	-	-	-	7,130
		2-2.5'	N/A		X	-	-	-	-	-	-	-	8,990
		3-3.5'	N/A		X	-	-	-	-	-	-	-	6,660
		4-4.5'	N/A		X	-	-	-	-	-	-	-	5,150
		5-5.5'	N/A		X	-	-	-	-	-	-	-	4,130
		6-6.5'	N/A		X	-	-	-	-	-	-	-	3,460
		7-7.5'	N/A		X	-	-	-	-	-	-	-	6,310
		7.5-8'	N/A		X	-	-	-	-	-	-	-	4,470

Table 1
COG Operating LLC.
Muskegon 16 State #1
EDDY COUNTY, NEW MEXICO

Sample ID	Date Sampled	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-5	11/10/2009	0-1'	N/A		X	<1.00	254	254	<0.0100	<0.0100	0.0259	0.021	5170
		1-1.5'	N/A		X	-	-	-	-	-	-	-	4,140
		2-2.5'	N/A		X	-	-	-	-	-	-	-	4,480
		3-3.5'	N/A		X	-	-	-	-	-	-	-	4,940
		4-4.5'	N/A		X	-	-	-	-	-	-	-	4,310
AH-6	11/10/2009	0-1'	N/A		X	<1.00	<50.0	<50.0	-	-	-	-	4,480
		1-1.5'	N/A		X	-	-	-	-	-	-	-	1,120
		2-2.5'	N/A	X		-	-	-	-	-	-	-	440
AH-7	11/10/2009	0-1'	N/A	X		<1.00	<50.0	<50.0	-	-	-	-	3,060
Reserve pit area		1-1.5'	N/A	X		-	-	-	-	-	-	-	3,310

(-) Not Analyzed

BEB Below Excavation Bottom

▭ Excavated Depths

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) 685-4332**
Facility Name **Muskegon 16 State Com #1**	Facility Type **Tank Battery**

Surface Owner: State	Mineral Owner	Lease No. API # 30-015-27108

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	16	17S	29E	660	S	1980	W	Eddy

Latitude N 32.82888° **Longitude** W 104.08204°

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release 50 bbls	Volume Recovered 35 bbls
Source of Release: Tank	Date and Hour of Occurrence 10/28/09 1:16 p.m.	Date and Hour of Discovery 10/28/09 1:16 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	
By Whom? Rick Wright	Date and Hour 10/28/09 2:43 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.*

The tank overflowed due to a pump malfunction.

Describe Area Affected and Cleanup Action Taken.*
The release stayed on the pad and entrance road. Tetra Tech inspected site and collected samples to define spills extent. An approved work plan was prepared and implemented. Removed soil was hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. 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	Approved by District Supervisor:	
Title: Senior Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: Phone: (432) 682-4559		

* 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 Kanicia Carrillo
Address 550 W. Texas, Suite 100 Midland, TX 79701	Telephone No. 432-685-4332
Facility Name – Muskegon 16 State Com #1	Facility Type- Battery

Surface Owner State	Mineral Owner	Lease No. 30-015-27108

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	16	17S	29E	660	South	1980	West	Eddy

Latitude___ Longitude

NATURE OF RELEASE

Type of Release-10 bbls oil, 40 bbls produced water	Volume of Release-50 bbls	Volume Recovered- 35 bbls (5-oil,30wtr)
Source of Release- Tank	Date and Hour of Occurrence- 10/28/09 Approx. 1:16pm	Date and Hour of Discovery 10/28/09 Approx. 1:16pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher	
By Whom? Pat Ellis	Date and Hour 10/28/09 2:43pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The tank overflowed due to a pump malfunction.

Describe Area Affected and Cleanup Action Taken.*
The release stayed on the pad and entrance road.
Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for your approval prior to any significant remediation work.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Kanicia Carrillo	Approved by District Supervisor:	
Title: Regulatory Analyst	Approval Date:	Expiration Date:
E-mail Address: kcarrillo@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 11/11/09 Phone: 432-685-4332		

* Attach Additional Sheets If Necessary

APPENDIX B

17.31.34.000	–	–	Rolling	–	–	–	0 (?)	Redbeds	Dockum
18.21.13.310	Andy Teel	1915	–	4,100	520	8	Limestone	San Andres
27.440	do.	1947	Broad valley	4,200	667	10	do.	do.
32.430	George Teel	1946	Rolling	4,300	815	6	do.	do.
18.23.6.140	Couhape Bros.	1941	S. of Rio Penasco	4,060	500	10	do.	do.
18.25.23.111	G. M. Phelps	–	Blackdom Terrace	–	–	–	Alluvium (?)	Quaternary (?)

See explanation at beginning of table.

LOCATION NUMBER	WATER LEVEL: BELOW LAND SURFACE (feet)	WATER LEVEL: DATE OF MEASUREMENT	YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS
17.28.2.240	27.6	Dec. 1, 1948	3	W	S	Depth to water measured while pumping.
14.220	80	–	61	W	S & D	Driller: Cy Hinshaw. See analysis, Table 3.
19.200	224.3	Dec. 2, 1948	1.2	W	S	Depth to water measured while pumping.
22.230	45.5	Dec. 1, 1948	–	N	N	Abandoned stock well.
17.29.22.110	79.7	Nov. 29, 1948	3 E.	W	S	Depth to water measured while pumping.
29.400	210	Dec. 3, 1948	1.1	W	S	do.
17.31.34.000	271+	Dec. 6, 1948	3.5	W	S	do. See analysis, Table 3.
18.21.13.310	505	–	10 R.	W	S & D	Formerly C.C.C. well. Cased to 30 ft.
27.440	530	–	–	W	S	Cased to 120 ft.
32.430	800 (?)	–	12 R.	W	S & D	Lowered cylinder 5 ft. in 1948 because water level declined. Cased to 380 ft.
18.23.6.140	440	Jan. 12, 1950	–	W	S & D	
18.25.23.111	117.8	Jan. 1950	–	W	S	

See explanation at beginning of table.
1 Measured Dec. 3, 1948.

APPENDIX C

Summary Report

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

Report Date: November 23, 2009

Work Order: 9111610

Project Location: Eddy Co., NM
Project Name: COG/Muskeegon 16 State Com. #1
Project Number: 114-6400354

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
214975	AH-1 0-1'	soil	2009-11-10	00:00	2009-11-13
214976	AH-1 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
214977	AH-1 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
214978	AH-2 0-1'	soil	2009-11-10	00:00	2009-11-13
214979	AH-2 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
214980	AH-2 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
214981	AH-2 3'-3.5'	soil	2009-11-10	00:00	2009-11-13
214982	AH-2 4'-4.5'	soil	2009-11-10	00:00	2009-11-13
214983	AH-3 0-1'	soil	2009-11-10	00:00	2009-11-13
214984	AH-3 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
214985	AH-3 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
214986	AH-4 0-1'	soil	2009-11-10	00:00	2009-11-13
214987	AH-4 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
214988	AH-4 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
214989	AH-4 3'-3.5'	soil	2009-11-10	00:00	2009-11-13
214990	AH-4 4'-4.5'	soil	2009-11-10	00:00	2009-11-13
214991	AH-4 5'-5.5'	soil	2009-11-10	00:00	2009-11-13
214992	AH-4 6'-6.5'	soil	2009-11-10	00:00	2009-11-13
214993	AH-4 7'-7.5'	soil	2009-11-10	00:00	2009-11-13
214994	AH-4 7.5'-8'	soil	2009-11-10	00:00	2009-11-13
214995	AH-5 0-1'	soil	2009-11-10	00:00	2009-11-13
214996	AH-5 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
214997	AH-5 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
214998	AH-5 3'-3.5'	soil	2009-11-10	00:00	2009-11-13
214999	AH-5 4'-4.5'	soil	2009-11-10	00:00	2009-11-13
215000	AH-6 0-1'	soil	2009-11-10	00:00	2009-11-13
215001	AH-6 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
215002	AH-6 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
215003	AH-7 0-1'	soil	2009-11-10	00:00	2009-11-13
215004	AH-7 1'-1.5'	soil	2009-11-10	00:00	2009-11-13

Sample - Field Code	BTEX Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
214975 - AH-1 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
214978 - AH-2 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	**4.76**
214983 - AH-3 0-1'					<50.0	<1.00
214986 - AH-4 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
214995 - AH-5 0-1'	<0.0100	<0.0100	**0.0259**	**0.0210**	**254**	<1.00
215000 - AH-6 0-1'					<50.0	<1.00
215003 - AH-7 0-1'					<50.0	<1.00

Sample: 214975 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**287**	mg/Kg	4.00

Sample: 214976 - AH-1 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**218**	mg/Kg	4.00

Sample: 214977 - AH-1 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 214978 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**1690**	mg/Kg	4.00

Sample: 214979 - AH-2 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**2910**	mg/Kg	4.00

Sample: 214980 - AH-2 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**1190**	mg/Kg	4.00

Sample: 214981 - AH-2 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		**305**	mg/Kg	4.00

Sample: 214982 - AH-2 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		**423**	mg/Kg	4.00

Sample: 214983 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 214984 - AH-3 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 214985 - AH-3 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 214986 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**9520**	mg/Kg	4.00

Sample: 214987 - AH-4 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**7130**	mg/Kg	4.00

Sample: 214988 - AH-4 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**8990**	mg/Kg	4.00

Sample: 214989 - AH-4 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		**6660**	mg/Kg	4.00

Sample: 214990 - AH-4 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		**5150**	mg/Kg	4.00

Sample: 214991 - AH-4 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		**4130**	mg/Kg	4.00

Sample: 214992 - AH-4 6'-6.5'

Param	Flag	Result	Units	RL
Chloride		**3460**	mg/Kg	4.00

Sample: 214993 - AH-4 7'-7.5'

Param	Flag	Result	Units	RL
Chloride		**6310**	mg/Kg	4.00

Sample: 214994 - AH-4 7.5'-8'

Param	Flag	Result	Units	RL
Chloride		**4470**	mg/Kg	4.00

Sample: 214995 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		**5170**	mg/Kg	4.00

Sample: 214996 - AH-5 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**4140**	mg/Kg	4.00

Sample: 214997 - AH-5 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**4480**	mg/Kg	4.00

Sample: 214998 - AH-5 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		**4940**	mg/Kg	4.00

Sample: 214999 - AH-5 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		**4310**	mg/Kg	4.00

Sample: 215000 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		**4480**	mg/Kg	4.00

Sample: 215001 - AH-6 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**1120**	mg/Kg	4.00

Sample: 215002 - AH-6 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**440**	mg/Kg	4.00

Sample: 215003 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		**3060**	mg/Kg	4.00

Sample: 215004 - AH-7 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**3310**	mg/Kg	4.00

TRACEANALYSIS, INC.

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Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: November 23, 2009

Work Order: 9111610

Project Location: Eddy Co., NM
Project Name: COG/Muskeegon 16 State Com. #1
Project Number: 114-6400354

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
214975	AH-1 0-1'	soil	2009-11-10	00:00	2009-11-13
214976	AH-1 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
214977	AH-1 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
214978	AH-2 0-1'	soil	2009-11-10	00:00	2009-11-13
214979	AH-2 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
214980	AH-2 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
214981	AH-2 3'-3.5'	soil	2009-11-10	00:00	2009-11-13
214982	AH-2 4'-4.5'	soil	2009-11-10	00:00	2009-11-13
214983	AH-3 0-1'	soil	2009-11-10	00:00	2009-11-13
214984	AH-3 1'-1.5'	soil	2009-11-10	00:00	2009-11-13

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
214985	AH-3 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
214986	AH-4 0-1'	soil	2009-11-10	00:00	2009-11-13
214987	AH-4 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
214988	AH-4 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
214989	AH-4 3'-3.5'	soil	2009-11-10	00:00	2009-11-13
214990	AH-4 4'-4.5'	soil	2009-11-10	00:00	2009-11-13
214991	AH-4 5'-5.5'	soil	2009-11-10	00:00	2009-11-13
214992	AH-4 6'-6.5'	soil	2009-11-10	00:00	2009-11-13
214993	AH-4 7'-7.5'	soil	2009-11-10	00:00	2009-11-13
214994	AH-4 7.5'-8'	soil	2009-11-10	00:00	2009-11-13
214995	AH-5 0-1'	soil	2009-11-10	00:00	2009-11-13
214996	AH-5 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
214997	AH-5 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
214998	AH-5 3'-3.5'	soil	2009-11-10	00:00	2009-11-13
214999	AH-5 4'-4.5'	soil	2009-11-10	00:00	2009-11-13
215000	AH-6 0-1'	soil	2009-11-10	00:00	2009-11-13
215001	AH-6 1'-1.5'	soil	2009-11-10	00:00	2009-11-13
215002	AH-6 2'-2.5'	soil	2009-11-10	00:00	2009-11-13
215003	AH-7 0-1'	soil	2009-11-10	00:00	2009-11-13
215004	AH-7 1'-1.5'	soil	2009-11-10	00:00	2009-11-13

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.

Michael Abel

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

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project COG/Muskeegon 16 State Com. #1 were received by TraceAnalysis, Inc. on 2009-11-13 and assigned to work order 9111610. Samples for work order 9111610 were received intact at a temperature of 8.2 deg. 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	55928	2009-11-19 at 11:00	65456	2009-11-19 at 23:56
Chloride (Titration)	SM 4500-Cl B	55855	2009-11-17 at 12:50	65389	2009-11-18 at 14:45
Chloride (Titration)	SM 4500-Cl B	55856	2009-11-17 at 12:50	65390	2009-11-18 at 14:46
Chloride (Titration)	SM 4500-Cl B	55857	2009-11-17 at 12:51	65391	2009-11-18 at 14:47
Chloride (Titration)	SM 4500-Cl B	55858	2009-11-17 at 12:52	65380	2009-11-18 at 11:03
TPH DRO - NEW	Mod. 8015B	55834	2009-11-16 at 15:56	65341	2009-11-16 at 15:56
TPH GRO	S 8015B	55928	2009-11-19 at 11:00	65457	2009-11-20 at 00:23

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9111610 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 214975 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	65456	Date Analyzed:	2009-11-19	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.36	mg/Kg	1	2.00	68	43.1 - 128.4

Sample: 214975 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65389	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55855	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		287	mg/Kg	50	4.00

Sample: 214975 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	65341	Date Analyzed:	2009-11-16	Analyzed By:	kg
Prep Batch:	55834	Sample Preparation:	2009-11-16	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		124	mg/Kg	1	100	124	70 - 130

Sample: 214975 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65457	Date Analyzed:	2009-11-20	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.84	mg/Kg	1	2.00	92	61.7 - 121.1

Sample: 214976 - AH-1 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65389	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55855	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**218**	mg/Kg	50	4.00

Sample: 214977 - AH-1 2'-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65389	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55855	Sample Preparation:	2009-11-17	Prepared By:	AR

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

Sample: 214978 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	65456	Date Analyzed:	2009-11-19	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.15	mg/Kg	1	2.00	108	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.38	mg/Kg	1	2.00	69	43.1 - 128.4

Sample: 214978 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65389	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55855	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1690**	mg/Kg	50	4.00

Sample: 214978 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	65341	Date Analyzed:	2009-11-16	Analyzed By:	kg
Prep Batch:	55834	Sample Preparation:	2009-11-16	Prepared By:	kg

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

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

Sample: 214978 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65457	Date Analyzed:	2009-11-20	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**4.76**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.86	mg/Kg	1	2.00	93	61.7 - 121.1

Sample: 214979 - AH-2 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65389	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55855	Sample Preparation:	2009-11-17	Prepared By:	AR

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

Sample: 214980 - AH-2 2'-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1190**	mg/Kg	50	4.00

Sample: 214981 - AH-2 3'-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**305**	mg/Kg	50	4.00

Sample: 214982 - AH-2 4'-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**423**	mg/Kg	50	4.00

Sample: 214983 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	Sample Preparation:	2009-11-17	Prepared By:	AR

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

Sample: 214983 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	65341	Date Analyzed:	2009-11-16	Analyzed By:	kg
Prep Batch:	55834	Sample Preparation:	2009-11-16	Prepared By:	kg

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

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

Sample: 214983 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65457	Date Analyzed:	2009-11-20	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.12	mg/Kg	1	2.00	106	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.82	mg/Kg	1	2.00	91	61.7 - 121.1

Sample: 214984 - AH-3 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	Sample Preparation:	2009-11-17	Prepared By:	AR

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

Sample: 214985 - AH-3 2'-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	Sample Preparation:	2009-11-17	Prepared By:	AR

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

Sample: 214986 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	65456	Date Analyzed:	2009-11-19	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.38	mg/Kg	1	2.00	69	43.1 - 128.4

Sample: 214986 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**9520**	mg/Kg	100	4.00

Sample: 214986 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	65341	Date Analyzed:	2009-11-16	Analyzed By:	kg
Prep Batch:	55834	Sample Preparation:	2009-11-16	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		123	mg/Kg	1	100	123	70 - 130

Sample: 214986 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65457	Date Analyzed:	2009-11-20	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.15	mg/Kg	1	2.00	108	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.87	mg/Kg	1	2.00	94	61.7 - 121.1

Sample: 214987 - AH-4 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**7130**	mg/Kg	100	4.00

Sample: 214988 - AH-4 2'-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**8990**	mg/Kg	100	4.00

Sample: 214989 - AH-4 3'-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**6660**	mg/Kg	100	4.00

Sample: 214990 - AH-4 4'-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**5150**	mg/Kg	100	4.00

Sample: 214991 - AH-4 5'-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**4130**	mg/Kg	100	4.00

Sample: 214992 - AH-4 6'-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**3460**	mg/Kg	100	4.00

Sample: 214993 - AH-4 7'-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**6310**	mg/Kg	100	4.00

Sample: 214994 - AH-4 7.5'-8'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4470**	mg/Kg	100	4.00

Sample: 214995 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	65456	Date Analyzed:	2009-11-19	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		**0.0259**	mg/Kg	1	0.0100
Xylene		**0.0210**	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.16	mg/Kg	1	2.00	108	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.38	mg/Kg	1	2.00	69	43.1 - 128.4

Sample: 214995 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**5170**	mg/Kg	100	4.00

Sample: 214995 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	65341	Date Analyzed:	2009-11-16	Analyzed By:	kg
Prep Batch:	55834	Sample Preparation:	2009-11-16	Prepared By:	kg

Parameter	Flag	Result	RL Result	Units	Dilution	RL
DRO			**254**	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		128	mg/Kg	1	100	128	70 - 130

Sample: 214995 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65457	Date Analyzed:	2009-11-20	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	Result	RL Result	Units	Dilution	RL
GRO			<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.93	mg/Kg	1	2.00	96	61.7 - 121.1

Sample: 214996 - AH-5 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Result	Units	Dilution	RL
Chloride			**4140**	mg/Kg	100	4.00

Sample: 214997 - AH-5 2'-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**4480**	mg/Kg	100	4.00

Sample: 214998 - AH-5 3'-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**4940**	mg/Kg	100	4.00

Sample: 214999 - AH-5 4'-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**4310**	mg/Kg	100	4.00

Sample: 215000 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65380	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55858	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**4480**	mg/Kg	100	4.00

Sample: 215000 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	65341	Date Analyzed:	2009-11-16	Analyzed By:	kg
Prep Batch:	55834	Sample Preparation:	2009-11-16	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		124	mg/Kg	1	100	124	70 - 130

Sample: 215000 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65457	Date Analyzed:	2009-11-20	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.17	mg/Kg	1	2.00	108	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.86	mg/Kg	1	2.00	93	61.7 - 121.1

Sample: 215001 - AH-6 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65380	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55858	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1120**	mg/Kg	50	4.00

Sample: 215002 - AH-6 2'-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65380	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55858	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**440**	mg/Kg	50	4.00

Sample: 215003 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65380	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55858	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**3060**	mg/Kg	100	4.00

Sample: 215003 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	65341	Date Analyzed:	2009-11-16	Analyzed By:	kg
Prep Batch:	55834	Sample Preparation:	2009-11-16	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		124	mg/Kg	1	100	124	70 - 130

Sample: 215003 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	65457	Date Analyzed:	2009-11-20	Analyzed By:	AG
Prep Batch:	55928	Sample Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.14	mg/Kg	1	2.00	107	65.3 - 115
4-Bromofluorobenzene (4-BFB)		1.86	mg/Kg	1	2.00	93	61.7 - 121.1

Sample: 215004 - AH-7 1'-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65380	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55858	Sample Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**3310**	mg/Kg	100	4.00

Method Blank (1) QC Batch: 65341

QC Batch:	65341	Date Analyzed:	2009-11-16	Analyzed By:	kg
Prep Batch:	55834	QC Preparation:	2009-11-16	Prepared By:	kg

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		116	mg/Kg	1	100	116	70 - 130

Method Blank (1) QC Batch: 65380

QC Batch:	65380	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55858	QC Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 65389

QC Batch:	65389	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55855	QC Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 65390

QC Batch:	65390	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55856	QC Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 65391

QC Batch:	65391	Date Analyzed:	2009-11-18	Analyzed By:	AR
Prep Batch:	55857	QC Preparation:	2009-11-17	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 65456

QC Batch:	65456	Date Analyzed:	2009-11-19	Analyzed By:	AG
Prep Batch:	55928	QC Preparation:	2009-11-19	Prepared By:	AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00410	mg/Kg	0.01
Toluene		<0.00310	mg/Kg	0.01
Ethylbenzene		<0.00240	mg/Kg	0.01
Xylene		<0.00650	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.15	mg/Kg	1	2.00	108	64.9 - 122.7
4-Bromofluorobenzene (4-BFB)		1.31	mg/Kg	1	2.00	66	43.9 - 121.9

Method Blank (1) QC Batch: 65457

QC Batch: 65457 | Date Analyzed: 2009-11-20 | Analyzed By: AG
Prep Batch: 55928 | QC Preparation: 2009-11-19 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.396	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.21	mg/Kg	1	2.00	110	66.2 - 125
4-Bromofluorobenzene (4-BFB)		1.82	mg/Kg	1	2.00	91	62 - 120.5

Laboratory Control Spike (LCS-1)

QC Batch: 65341 | Date Analyzed: 2009-11-16 | Analyzed By: kg
Prep Batch: 55834 | QC Preparation: 2009-11-16 | Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	234	mg/Kg	1	250	<5.86	94	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	238	mg/Kg	1	250	<5.86	95	57.4 - 133.4	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
n-Tricosane	112	115	mg/Kg	1	100	112	115	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 65380 | Date Analyzed: 2009-11-18 | Analyzed By: AR
Prep Batch: 55858 | QC Preparation: 2009-11-17 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	103	mg/Kg	1	100	<2.18	103	85 - 115	2	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: 65389 | Date Analyzed: 2009-11-18 | Analyzed By: AR
Prep Batch: 55855 | QC Preparation: 2009-11-17 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	mg/Kg	1	100	<2.18	100	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 65390 | Date Analyzed: 2009-11-18 | Analyzed By: AR
Prep Batch: 55856 | QC Preparation: 2009-11-17 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	100	mg/Kg	1	100	<2.18	100	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	98.8	mg/Kg	1	100	<2.18	99	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 65391 | Date Analyzed: 2009-11-18 | Analyzed By: AR
Prep Batch: 55857 | QC Preparation: 2009-11-17 | Prepared By: AR

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.7	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.5	mg/Kg	1	100	<2.18	100	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 65456 | Date Analyzed: 2009-11-19 | Analyzed By: AG
Prep Batch: 55928 | QC Preparation: 2009-11-19 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.92	mg/Kg	1	2.00	<0.00410	96	75.4 - 115.7
Toluene	1.90	mg/Kg	1	2.00	<0.00310	95	78.4 - 113.6
Ethylbenzene	1.86	mg/Kg	1	2.00	<0.00240	93	76 - 114.2
Xylene	5.57	mg/Kg	1	6.00	<0.00650	93	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.94	mg/Kg	1	2.00	<0.00410	97	75.4 - 115.7	1	20
Toluene	1.93	mg/Kg	1	2.00	<0.00310	96	78.4 - 113.6	2	20
Ethylbenzene	1.90	mg/Kg	1	2.00	<0.00240	95	76 - 114.2	2	20
Xylene	5.69	mg/Kg	1	6.00	<0.00650	95	76.9 - 113.6	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)	2.09	2.13	mg/Kg	1	2.00	104	106	65 - 122.9
4-Bromofluorobenzene (4-BFB)	1.34	1.37	mg/Kg	1	2.00	67	68	43.8 - 124.9

Laboratory Control Spike (LCS-1)

QC Batch: 65457 | Date Analyzed: 2009-11-20 | Analyzed By: AG
Prep Batch: 55928 | QC Preparation: 2009-11-19 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	14.5	mg/Kg	1	20.0	<0.396	72	52.5 - 114.3

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	14.4	mg/Kg	1	20.0	<0.396	72	52.5 - 114.3	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.17	2.16	mg/Kg	1	2.00	108	108	66.2 - 128.7
4-Bromofluorobenzene (4-BFB)	1.87	1.84	mg/Kg	1	2.00	94	92	64.1 - 127.4

Matrix Spike (MS-1) Spiked Sample: 214975

QC Batch: 65341 | Date Analyzed: 2009-11-16 | Analyzed By: kg
Prep Batch: 55834 | QC Preparation: 2009-11-16 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	135	mg/Kg	1	250	<5.86	54	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	138	mg/Kg	1	250	<5.86	55	35.2 - 167.1	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
n-Tricosane	118	116	mg/Kg	1	100	118	116	70 - 130

Matrix Spike (MS-1) Spiked Sample: 215083

QC Batch: 65380 | Date Analyzed: 2009-11-18 | Analyzed By: AR
Prep Batch: 55858 | QC Preparation: 2009-11-17 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14300	mg/Kg	100	10000	3960	103	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	14400	mg/Kg	100	10000	3960	104	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 214979

QC Batch: 65389 | Date Analyzed: 2009-11-18 | Analyzed By: AR
Prep Batch: 55855 | QC Preparation: 2009-11-17 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	12900	mg/Kg	100	10000	2910	100	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	13000	mg/Kg	100	10000	2910	101	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 214989

QC Batch: 65390 | Date Analyzed: 2009-11-18 | Analyzed By: AR
Prep Batch: 55856 | QC Preparation: 2009-11-17 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	16500	mg/Kg	100	10000	6660	98	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	16700	mg/Kg	100	10000	6660	100	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 214999

QC Batch: 65391 | Date Analyzed: 2009-11-18 | Analyzed By: AR
Prep Batch: 55857 | QC Preparation: 2009-11-17 | Prepared By: AR

continued ...

matrix spikes continued ...

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14700	mg/Kg	100	10000	4310	104	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	14800	mg/Kg	100	10000	4310	105	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 214963

QC Batch: 65456 | Date Analyzed: 2009-11-19 | Analyzed By: AG
Prep Batch: 55928 | QC Preparation: 2009-11-19 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.16	mg/Kg	1	2.00	<0.00410	108	57.7 - 140.7
Toluene	2.18	mg/Kg	1	2.00	<0.00310	109	53.4 - 146.6
Ethylbenzene	2.20	mg/Kg	1	2.00	<0.00240	110	62.1 - 141.6
Xylene	6.59	mg/Kg	1	6.00	<0.00650	110	61.2 - 142.7

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

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	[1]	1.29	mg/Kg	1	2.00	<0.00410	64	57.7 - 140.7	50	20
Toluene	[2]	1.32	mg/Kg	1	2.00	<0.00310	66	53.4 - 146.6	49	20
Ethylbenzene	[3]	1.35	mg/Kg	1	2.00	<0.00240	68	62.1 - 141.6	48	20
Xylene	[4]	4.03	mg/Kg	1	6.00	<0.00650	67	61.2 - 142.7	48	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.15	2.15	mg/Kg	1	2	108	108	62.7 - 119.6
4-Bromofluorobenzene (4-BFB)	1.39	1.39	mg/Kg	1	2	70	70	49.6 - 136.7

[1] MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.
[2] MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.
[3] MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.
[4] MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

Matrix Spike (MS-1) Spiked Sample: 214963

QC Batch: 65457 | Date Analyzed: 2009-11-20 | Analyzed By: AG
Prep Batch: 55928 | QC Preparation: 2009-11-19 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	13.9	mg/Kg	1	20.0	<0.396	70	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.0	mg/Kg	1	20.0	<0.396	75	10 - 198.3	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
Trifluorotoluene (TFT)	2.04	2.12	mg/Kg	1	2	102	106	65.5 - 123
4-Bromofluorobenzene (4-BFB)	1.91	1.93	mg/Kg	1	2	96	96	58.6 - 140

Standard (CCV-2)

QC Batch: 65341 | Date Analyzed: 2009-11-16 | Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	255	102	80 - 120	2009-11-16

Standard (CCV-3)

QC Batch: 65341 | Date Analyzed: 2009-11-16 | Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	260	104	80 - 120	2009-11-16

Standard (CCV-4)

QC Batch: 65341 | Date Analyzed: 2009-11-16 | Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	245	98	80 - 120	2009-11-16

Standard (ICV-1)

QC Batch: 65380 Date Analyzed: 2009-11-18 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2009-11-18

Standard (CCV-1)

QC Batch: 65380 Date Analyzed: 2009-11-18 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2009-11-18

Standard (ICV-1)

QC Batch: 65389 Date Analyzed: 2009-11-18 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2009-11-18

Standard (CCV-1)

QC Batch: 65389 Date Analyzed: 2009-11-18 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-11-18

Standard (ICV-1)

QC Batch: 65390 Date Analyzed: 2009-11-18 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2009-11-18

Standard (CCV-1)

QC Batch: 65390 Date Analyzed: 2009-11-18 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2009-11-18

Standard (ICV-1)

QC Batch: 65391 Date Analyzed: 2009-11-18 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2009-11-18

Standard (CCV-1)

QC Batch: 65391 Date Analyzed: 2009-11-18 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2009-11-18

Standard (CCV-1)

QC Batch: 65456 Date Analyzed: 2009-11-19 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0923	92	80 - 120	2009-11-19
Toluene		mg/Kg	0.100	0.0906	91	80 - 120	2009-11-19
Ethylbenzene		mg/Kg	0.100	0.0898	90	80 - 120	2009-11-19
Xylene		mg/Kg	0.300	0.269	90	80 - 120	2009-11-19

Standard (CCV-2)

QC Batch: 65456 Date Analyzed: 2009-11-19 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0961	96	80 - 120	2009-11-19
Toluene		mg/Kg	0.100	0.0945	94	80 - 120	2009-11-19
Ethylbenzene		mg/Kg	0.100	0.0925	92	80 - 120	2009-11-19
Xylene		mg/Kg	0.300	0.274	91	80 - 120	2009-11-19

Standard (CCV-3)

QC Batch: 65456 Date Analyzed: 2009-11-19 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0972	97	80 - 120	2009-11-19
Toluene		mg/Kg	0.100	0.0966	97	80 - 120	2009-11-19
Ethylbenzene		mg/Kg	0.100	0.0940	94	80 - 120	2009-11-19
Xylene		mg/Kg	0.300	0.280	93	80 - 120	2009-11-19

Standard (CCV-1)

QC Batch: 65457 Date Analyzed: 2009-11-20 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.955	96	80 - 120	2009-11-20

Standard (CCV-2)

QC Batch: 65457 Date Analyzed: 2009-11-20 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.921	92	80 - 120	2009-11-20

Standard (CCV-3)

QC Batch: 65457 Date Analyzed: 2009-11-20 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.987	99	80 - 120	2009-11-20

Order #: 9111610

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 3

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-4D0354

PROJECT NAME: COG / Muskegon 16 State Com #1 Eddy Co, NM

LAB I.D. NUMBER	DATE 2007	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD / TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 608/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
24975	11/10		S		X	AH-1 0-1'	1				X			X											X				
976						AH-1 1'-1.5'																			X				
977						AH-1 2'-2.5'																			X				
978						AH-2 0-1'								X											X				
979						AH-2 1'-1.5'																			X				
980						AH-2 2'-2.5'																			X				
981						AH-2 3'-3.5'																			X				
982						AH-2 4'-4.5'																			X				
983						AH-3 0-1'								X											X				
984	▼		▼		▼	AH 3 1'-1.5'	▼				▼														X				

RELINQUISHED BY: (Signature) Date: 11/13/07 Time: 1503
RECEIVED BY: (Signature) Date: 11/13/07 Time: 1505
SAMPLED BY: (Print & Initial) JT/TCH Date: 11/10/07 Time:

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

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 8.2°C intact

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

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

Rush (4) BTEX of highest TPH.

Order #: 9111610

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 3

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

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400354

PROJECT NAME: COG / Maskegon 16 State Com #1
Eddy Co, NM

LAB I.D. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD.	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
214985	11/10		S		X	AH-3 2'-2.5'	1				X				X											X				
986						AH-4 0-1'								X												X				
987						AH-4 1'-1.5'																				X				
988						AH-4 2'-2.5'																				X				
989						AH-4 3'-3.5'																				X				
990						AH-4 4'-4.5'																				X				
991						AH-4 5'-5.5'																				X				
992						AH-4 6'-6.5'																				X				
993						AH-4 7'-7.5'																				X				
994						AH-4 7.5'-8'																				X				

ANALYSIS REQUEST
(Circle or Specify Method No.)

RELINQUISHED BY: (Signature) — Date: 11/10/09 Time: 1205 — RECEIVED BY: (Signature) — Date: 11/10/09 Time: 15:02

SAMPLED BY: (Print & Initial) JT / RG — Date: 11/10/09 Time:

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Xenco — RECEIVED BY: (Signature)

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: PHONE: DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 8.2°C intact

REMARKS:

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

Order #: 9111610

Analysis Request of Chain of Custody Record

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG
SITE MANAGER: Ike Tavarez
PROJECT NO.: 114-6400354
PROJECT NAME: COG / Muskegon 1C State Com #1 Eddy Co, NM

LAB I.D. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35) / 8015 MOD.	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
214995	11/10		S		X	AH-5 0-1'	1				X			X											X				
996						AH-5 1'-1.5'																			X				
997						AH-5 2'-2.5'																			X				
998						AH-5 3'-3.5'																			X				
999						AH-5 4'-4.5'																			X				
215000						AH-6 0-1'								X											X				
001						AH-6 1'-1.5'																			X				
002						AH-6 2'-2.5'																			X				
003						~~AH-7 3'-3.5'~~ AH-7 0-1'								X											X				
004						AH-7 1'-1.5'																			X				

RELINQUISHED BY: (Signature) Date: 11/13/09 Time: 1515
RECEIVED BY: (Signature) Date: 11/13/09 Time: 1515
SAMPLED BY: (Print & Initial) JT/RG Date: 11/10/09 Time:

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

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 8.2°c intact
REMARKS:

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

Summary Report

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

Report Date: February 19, 2010

Work Order: 10021125

Project Location: Eddy Co., NM
Project Name: COG/Muskeegon 16 State Com. #1
Project Number: 114-6400354

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222098	SB-1 1'-2'	soil	2010-02-10	00:00	2010-02-11
222099	SB-1 3'-4'	soil	2010-02-10	00:00	2010-02-11
222100	SB-1 5'-6'	soil	2010-02-10	00:00	2010-02-11
222101	SB-1 7'-8'	soil	2010-02-10	00:00	2010-02-11
222102	SB-1 10'-11'	soil	2010-02-10	00:00	2010-02-11
222103	SB-1 15'-16'	soil	2010-02-10	00:00	2010-02-11
222104	SB-1 20'-21'	soil	2010-02-10	00:00	2010-02-11
222105	SB-1 25'-26'	soil	2010-02-10	00:00	2010-02-11
222106	SB-1 30'-31'	soil	2010-02-10	00:00	2010-02-11

Sample: 222098 - SB-1 1'-2'

Param	Flag	Result	Units	RL
Chloride		**1700**	mg/Kg	4.00

Sample: 222099 - SB-1 3'-4'

Param	Flag	Result	Units	RL
Chloride		**1040**	mg/Kg	4.00

Sample: 222100 - SB-1 5'-6'

continued ...

sample 222100 continued ...

Param	Flag	Result	Units	RL

Param	Flag	Result	Units	RL
Chloride		**787**	mg/Kg	4.00

Sample: 222101 - SB-1 7'-8'

Param	Flag	Result	Units	RL
Chloride		**401**	mg/Kg	4.00

Sample: 222102 - SB-1 10'-11'

Param	Flag	Result	Units	RL
Chloride		**495**	mg/Kg	4.00

Sample: 222103 - SB-1 15'-16'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222104 - SB-1 20'-21'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222105 - SB-1 25'-26'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 222106 - SB-1 30'-31'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 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

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: February 19, 2010

Work Order: 10021125

Project Location: Eddy Co., NM
Project Name: COG/Muskeegon 16 State Com. #1
Project Number: 114-6400354

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
222098	SB-1 1'-2'	soil	2010-02-10	00:00	2010-02-11
222099	SB-1 3'-4'	soil	2010-02-10	00:00	2010-02-11
222100	SB-1 5'-6'	soil	2010-02-10	00:00	2010-02-11
222101	SB-1 7'-8'	soil	2010-02-10	00:00	2010-02-11
222102	SB-1 10'-11'	soil	2010-02-10	00:00	2010-02-11
222103	SB-1 15'-16'	soil	2010-02-10	00:00	2010-02-11
222104	SB-1 20'-21'	soil	2010-02-10	00:00	2010-02-11
222105	SB-1 25'-26'	soil	2010-02-10	00:00	2010-02-11
222106	SB-1 30'-31'	soil	2010-02-10	00:00	2010-02-11

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

This report consists of a total of 9 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

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project COG/Muskeegon 16 State Com. #1 were received by TraceAnalysis, Inc. on 2010-02-11 and assigned to work order 10021125. Samples for work order 10021125 were received intact at a temperature of 4.0 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	57778	2010-02-16 at 09:22	67597	2010-02-17 at 15:22
Chloride (Titration)	SM 4500-Cl B	57779	2010-02-16 at 09:23	67598	2010-02-17 at 15:24

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 10021125 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 222098 - SB-1 1'-2'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	67597	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57778	Sample Preparation:	2010-02-16	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1700**	mg/Kg	50	4.00

Sample: 222099 - SB-1 3'-4'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	67597	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57778	Sample Preparation:	2010-02-16	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1040**	mg/Kg	50	4.00

Sample: 222100 - SB-1 5'-6'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	67597	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57778	Sample Preparation:	2010-02-16	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**787**	mg/Kg	50	4.00

Sample: 222101 - SB-1 7'-8'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	67597	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57778	Sample Preparation:	2010-02-16	Prepared By:	AR

continued ...

sample 222101 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**401**	mg/Kg	50	4.00

Sample: 222102 - SB-1 10'-11'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	67597	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57778	Sample Preparation:	2010-02-16	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**495**	mg/Kg	50	4.00

Sample: 222103 - SB-1 15'-16'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	67597	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57778	Sample Preparation:	2010-02-16	Prepared By:	AR

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

Sample: 222104 - SB-1 20'-21'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	67597	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57778	Sample Preparation:	2010-02-16	Prepared By:	AR

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

Sample: 222105 - SB-1 25'-26'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	67597	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57778	Sample Preparation:	2010-02-16	Prepared By:	AR

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

Sample: 222106 - SB-1 30'-31'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	67598	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57779	Sample Preparation:	2010-02-16	Prepared By:	AR

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

Method Blank (1) QC Batch: 67597

QC Batch:	67597	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57778	QC Preparation:	2010-02-16	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 67598

QC Batch:	67598	Date Analyzed:	2010-02-17	Analyzed By:	AR
Prep Batch:	57779	QC Preparation:	2010-02-16	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch: 67597 | Date Analyzed: 2010-02-17 | Analyzed By: AR
Prep Batch: 57778 | QC Preparation: 2010-02-16 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.0	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.9	mg/Kg	1	100	<2.18	100	85 - 115	2	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: 67598 | Date Analyzed: 2010-02-17 | Analyzed By: AR
Prep Batch: 57779 | QC Preparation: 2010-02-16 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.7	mg/Kg	1	100	<2.18	100	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 222105

QC Batch: 67597 | Date Analyzed: 2010-02-17 | Analyzed By: AR
Prep Batch: 57778 | QC Preparation: 2010-02-16 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10100	mg/Kg	100	10000	<218	101	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10300	mg/Kg	100	10000	<218	103	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 222115

QC Batch: 67598 | Date Analyzed: 2010-02-17 | Analyzed By: AR
Prep Batch: 57779 | QC Preparation: 2010-02-16 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11000	mg/Kg	100	10000	910	101	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11100	mg/Kg	100	10000	910	102	85 - 115	1	20

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

Standard (ICV-1)

QC Batch: 67597 | Date Analyzed: 2010-02-17 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.7	100	85 - 115	2010-02-17

Standard (CCV-1)

QC Batch: 67597 | Date Analyzed: 2010-02-17 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-02-17

Standard (ICV-1)

QC Batch: 67598 | Date Analyzed: 2010-02-17 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.4	98	85 - 115	2010-02-17

Standard (CCV-1)

QC Batch: 67598 | Date Analyzed: 2010-02-17 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2010-02-17

Order #: 10021125

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-4100354

PROJECT NAME: COG / Muskegon 16 State Eddy Co, NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
222098	2/10		S		X	SB-1 1'-2'	1				X	
099						SB-1 3'-4'						
100						SB-1 5'-6'						
101						SB-1 7'-8'						
102						SB-1 10'-11'						
103						SB-1 15'-16'						
104						SB-1 20'-21'						
105						SB-1 25'-26'						
106						SB-1 30'-31'						

ANALYSIS REQUEST (Circle or Specify Method No.)

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

RELINQUISHED BY: (Signature) — Date: 2-11-10 Time: 1600
RECEIVED BY: (Signature) — Date: 2/11/10 Time: 16:00
SAMPLED BY: (Print & Initial) KD — Date: 2/10/10 Time:

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4.0c intact

REMARKS:

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