SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Electra North Federal Tank Battery					
Company:	COG Operating LLC					
Section, Township and Range	Unit B	Sec 10	T17S	R30E		
Lease Number:	NMNM-0467931					
County:	Eddy County					
GPS:	32.85319° N			103.95908° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of Hwy 82 and Goat Roper Rd in Loco Hills, travel north on Goat Roper Rd for 1.7m, turn right and travel 0.8m, turn left and travel 0.4m, turn right and travel 0.2m, turn left and travel 0.2m.					

Release Data:

Date Released:	9/1/2010
Type Release:	Produced Water
Source of Contamination:	Water Transfer Pump
Fluid Released:	55 bbls
Fluids Recovered:	50 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	
>100 ft.	0	>300'
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	*0*	0
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:	0	

Acceptable Soil RRAL (mg/kg)

Benzene	***Total BTEX***	***TPH***
10	50	5,000

RECEIVED
DEC 14 2011
NMOCD ARTESIA

TETRA TECH

November 7, 2011

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

Re: Closure Request for the COG Operating LLC., Electra North Federal Tank Battery, Unit B, Section 10, Township 17 South, Range 30 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 Electra North Federal Tank Battery located in Unit B, Section 10, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.85319°, W 103.95908. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on September 1, 2010, and released approximately fifty five (55) barrels of produced fluid from the water transfer pump. To alleviate the problem, COG personnel repaired the swedge on the pump. Fifty (50) barrels of standing fluids were recovered. The spill was fully contained inside the facility firewalls, affecting an area around the facility measuring approximately 45' x 140'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 10. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 300' below surface. The groundwater map is shown in Appendix B.

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

Regulatory

A risk-based evaluation was performed for the Site in accordance with the *New Mexico Oil Conservation Division (NMOCD) Guidelines for* Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On September 14, 2010, Tetra Tech personnel inspected and sampled the spill area. Five (5) auger holes (AH-1 through AH-5) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the samples exceeded the RRAL for TPH. Auger hole (AH-4) exceeded the total BTEX RRAL, but declined below the RRAL at 2-2.5' below surface. Auger hole (AH-3) did not show a chloride impact to the subsurface soils. Auger holes (AH-2 and AH-5) were vertically defined at depths of 2-2.5' and 6-6.5', respectively. The remaining *auger holes (AH-1 and AH-4) were not vertically defined.*

On March 3, 2011, Tetra Tech personnel supervised the installation of one soil boring (SB-1) in the area of AH-4. Soil samples were collected to a depth of 30.0'. Due to the location of AH-1 behind the tank battery, drilling accessibility was not possible to assess the chloride impact. Referring to Table 1, SB-1 exhibited chloride concentrations of 13,300 mg/kg at 7.0' which declined to 208 mg/kg at 10.0' below surface. The soil boring location is shown on Figure 3.

TETRA TECH

Remediation Activities and Closure Request

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. The final excavation depths of the soil remediation were met or exceeded as stated in the approved work plan. The excavation depths are highlighted in Table 1 and shown on Figure 4. Approximately 180 cubic yards of soil were excavated and hauled to proper disposal.

Sampling

On July 28, 2011, the excavation bottom (3.0') at AH-1 was trenched with a backhoe to define the chloride impact, as recommended in the work plan. Referring to Table 1, the chloride concentration declined to <200 mg/kg at 5.0' below surface. As requested by the BLM, confirmation samples were collected from the excavation bottoms and sidewalls. Referring to Table 1, elevated chloride concentrations were detected in the areas of CS-1 (east wall) and CS-3 (west wall), with concentrations of 1,900 mg/kg and 2,130 mg/kg, respectively. The side wall samples were located next to the facility tanks and additional soil removal from these areas was not possible. The BLM approved the concentrations and deferred the site until abandonment. As recommended, the areas of AH-1 and AH-4 were excavated to a depth of 3.0' and clay was placed in the bottom of the excavation to cap these areas. Based on the results, the excavation was backfilled with clean soil.

Closure Request

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

Respectfully submitted,
TETRA TECH

Ike Tavarez
Project Manager

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

Figures

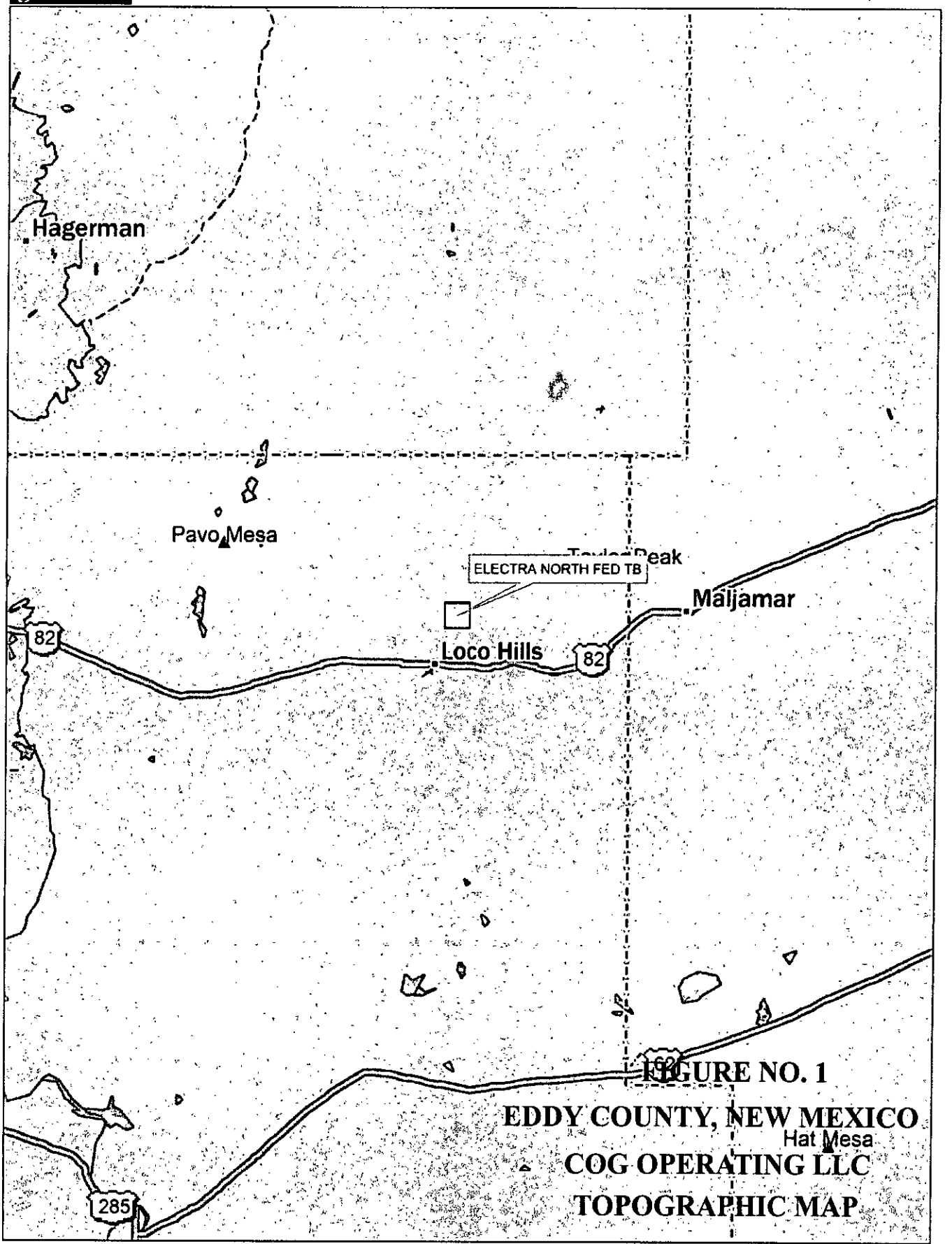


FIGURE NO. 1

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

TN

MN (7.8°E)

Scale 1 : 400,000

1" = 6.31 mi

Data Zoom 8-0

DELORME

Topo USA® 8

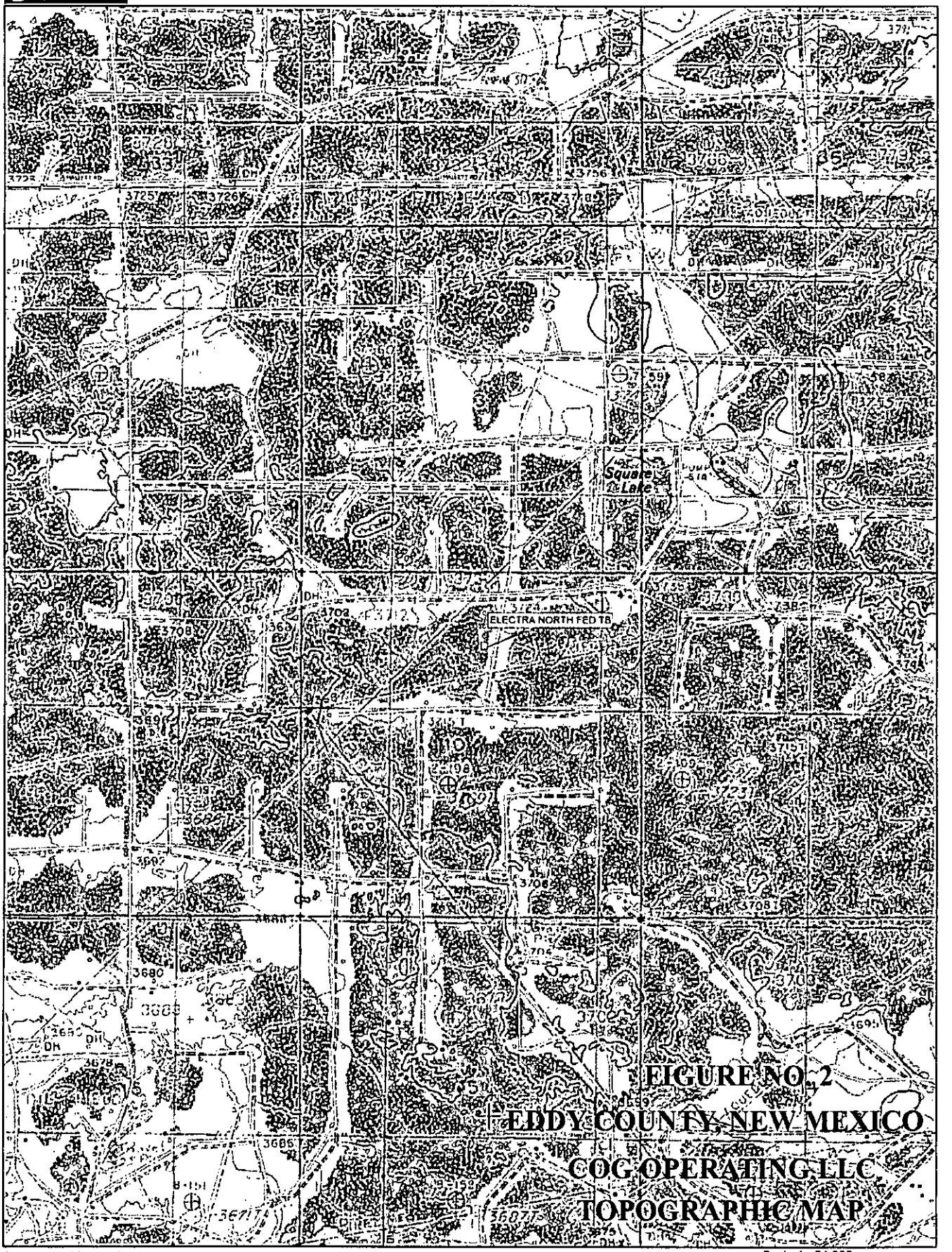


FIGURE NO. 2

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

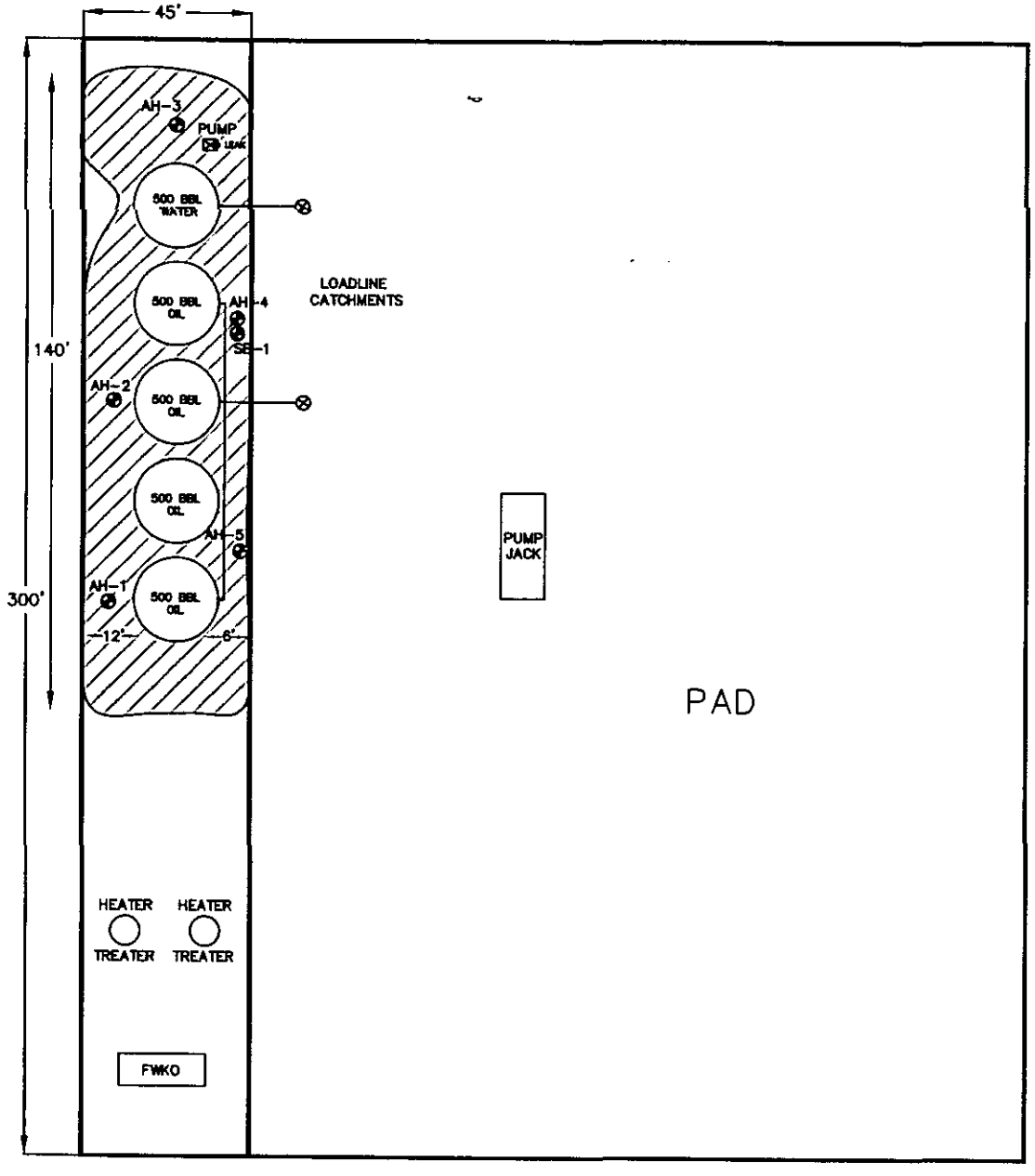
TN

MN (7.6°E)

Scale 1 : 24,000

1" = 2,000.0 ft

Data Zoom 14-0



SPILL AREA
AUGER HOLE LOCATIONS
SOIL BORE LOCATIONS

NOT TO SCALE

FIGURE NO. 3

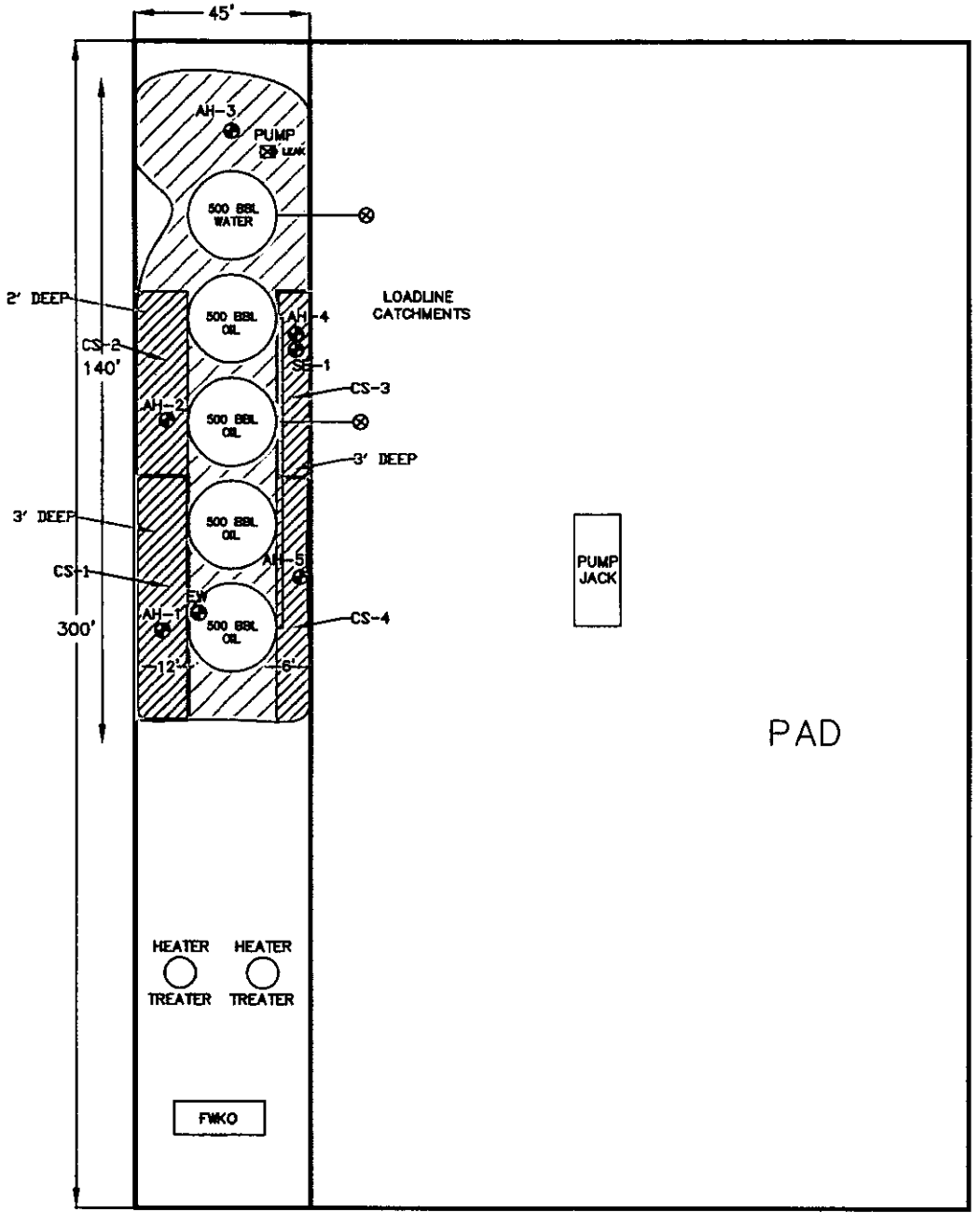
EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

ELECTRA NORTH FED TB

DATE: 5/26/2011
DWN. BY: IM
FILE:

TETRA TECH, INC.
MIDLAND, TEXAS



- AUGER HOLE LOCATIONS
- SOIL BORE LOCATIONS
- EXCAVATED/SPILL AREA
- CLAY CAP

NOT TO SCALE

FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

ELECTRA NORTH FED TB

DATE: 11/2/2011
DWN. BY: IM
FILE: H:\COG\84000877 ELECTRA NORTH FED TB

TETRA TECH, INC.
MIDLAND, TEXAS

Tables

Table 1
COG Operating LLC.
ELECTRA NORTH FEDERAL TANK BATTERY
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	9/15/2010	0-1'			X	<10.0	<50.0	<50.0	-	-	-	-	17,500
	"	1-1.5'			X	-	-	-	-	-	-	-	12,900
	"	2-2.5'			X	-	-	-	-	-	-	-	7,640
	"	3-3.5'			X	-	-	-	-	-	-	-	4,820
	"	4-4.5'		X		-	-	-	-	-	-	-	5,550
	"	5-5.5'		X		-	-	-	-	-	-	-	5,860
CS-1	7/28/2011	Southwall		X		-	-	-	-	-	-	-	<200
	"	Eastwall		X		-	-	-	-	-	-	-	1,900
	"	Westwall		X		-	-	-	-	-	-	-	<200
	"	Bottom 3'		X		-	-	-	-	-	-	-	5,160
Trench 1	7/28/2011	5'		X		-	-	-	-	-	-	-	<200
AH-2	9/15/2010	0-1'			X	<20.0	254	254	<0.200	<0.200	<0.200	<0.200	1,470
	"	1-1.5'			X	-	-	-	-	-	-	-	1,110
	"	2-2.5'			X	-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
	"	5-5.5'		X		-	-	-	-	-	-	-	<200
	"	6-6.5'		X		-	-	-	-	-	-	-	499
CS-2	7/28/2011	Northwall		X		-	-	-	-	-	-	-	<200
	"	Eastwall		X		-	-	-	-	-	-	-	<200
	"	Westwall		X		-	-	-	-	-	-	-	<200
	"	Bottom 2'		X		-	-	-	-	-	-	-	<200

Table 1
COG Operating LLC.
ELECTRA NORTH FEDERAL TANK BATTERY
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-3	9/15/2010	0-1'		X		<2.00	<50.0	<50.0	-	-	-	-	<200
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
AH-4	9/15/2010	0-1'			X	757	3,770	4,527	3.48	29.6	17.6	61.5	7,750
	"	1-1.5'			X	-	-	-	2.62	12.3	2.67	34.1	4,610
	"	2-2.5'			X	-	-	-	0.217	2.01	0.926	7.07	7,380
	"	3-3.5'			X	-	-	-	-	-	-	-	3,150
	"	4-4.5'		X		-	-	-	-	-	-	-	2,410
	"	5-5.5'		X		-	-	-	-	-	-	-	2,500
	"	6-6.5'		X		-	-	-	-	-	-	-	343
	"	7-7.5'		X		-	-	-	-	-	-	-	3,270
SB-1	3/3/2011	0-1'			X	-	-	-	-	-	-	-	<200
	"	3'			X	-	-	-	-	-	-	-	<200
	"	5'		X		-	-	-	-	-	-	-	4,860
	"	7'		X		-	-	-	-	-	-	-	13,300
	"	10'		X		-	-	-	-	-	-	-	208
	"	15'		X		-	-	-	-	-	-	-	612
	"	20'		X		-	-	-	-	-	-	-	<200
	"	25'		X		-	-	-	-	-	-	-	<200
	"	30'		X		-	-	-	-	-	-	-	<200
CS-3	7/28/2011	Northwall		X		-	-	-	-	-	-	-	<200
	"	Eastwall		X		-	-	-	-	-	-	-	<200
	"	Westwall		X		-	-	-	-	-	-	-	2,130
	"	Bottom 3'		X		-	-	-	-	-	-	-	2,160

Table 1
COG Operating LLC.
ELECTRA NORTH FEDERAL TANK BATTERY
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-5	9/15/2010	0-1'			X	<20.0	424	424	<0.200	<0.200	<0.200	<0.200	1,280
	"	1-1.5'			X	-	-	-	-		-	-	2,650
	"	2-2.5'			X	-	-	-	-		-	-	8,870
	"	3-3.5'			X	-	-	-	-		-	-	6,280
	"	4-4.5'		X		-	-	-	-	-	-	-	4,420
	"	5-5.5'		X		-	-	-	-	-	-	-	7,540
	"	6-6.5'		X		-	-	-	-	-	-	-	<200
	"	7-7.5'		X		-	-	-	-	-	-	-	<200
	"	8-8.5'		X		-	-	-	-	-	-	-	<200
CS-4	7/28/2011	Southwall		X		-	-	-	-	-	-	-	710
	"	EastWall		X		-	-	-	-	-	-	-	<200
	"	Westwall		X		-	-	-	-	-	-	-	<200
	"	Bottom 3'		X		-	-	-	-	-	-	-	643

BEB Below Excavation Bottom

(--) Not Analyzed

Excavated Depth

Clay Cap

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 **Electra North Federal Tank Battery**	Facility Type **Tank Battery**

Surface Owner: Federal	Mineral Owner	Lease No. NMNM-047931

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	10	17S	30E					Eddy

Latitude N 32.85319 **Longitude** W 103.95908

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release 55 bbls	Volume Recovered 50 bbls
Source of Release: Water Transfer Pump	Date and Hour of Occurrence 9/1/10	Date and Hour of Discovery 9/1/10 8:00 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - OCD	
By Whom?	Date and Hour 9/1/10 9:10 pm	
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 threads on the swedge at the water transfer pump broke off due to corrosion. The old swedge has been replaced with a heavy duty plastic coated swedge.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech inspected and assessed the spill area for extents. A work plan was prepared and submitted to NMOCD for approval. Soils exceeding the RRAL were removed and transported to proper disposal. Once excavated to the appropriate depths, the excavation 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@tetratech.com	Conditions of Approval:	Attached ☐
Date: 11-7-11 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Electra North Federal Tank Battery
Eddy County, New Mexico

16 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19 **110**	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 30 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

16 South 31 East

6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31 **290**	32	33	34	35

17 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 **80**	23	24
30	29 **210** **208'**	28	27	26	25
31	32	33	34	35 153	36

17 South 30 East

6	5	4	3	2	1
7	8	9	10 Site	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

17 South 31 East

6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34 **271**	35

18 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

18 South 30 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

18 South 31 East

6	5	4	3	2
7	8	9	10	11
18	17	16	15	14 **317**
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35 **261**

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - *Groundwater Data*

Appendix C

Summary Report

Tom Franklin
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: October 1, 2010

Work Order: 10091634

Project Location: Eddy County, NM
Project Name: COG/Electra North Federal TB
Project Number: 114-6400677

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244938	AH-1 0-1	soil	2010-09-15	00:00	2010-09-16
244939	AH-1 1-1.5	soil	2010-09-15	00:00	2010-09-16
244940	AH-1 2-2.5	soil	2010-09-15	00:00	2010-09-16
244941	AH-1 3-3.5	soil	2010-09-15	00:00	2010-09-16
244942	AH-1 4-4.5	soil	2010-09-15	00:00	2010-09-16
244943	AH-1 5-5.5	soil	2010-09-15	00:00	2010-09-16
244944	AH-2 0-1	soil	2010-09-15	00:00	2010-09-16
244945	AH-2 1-1.5	soil	2010-09-15	00:00	2010-09-16
244946	AH-2 2-2.5	soil	2010-09-15	00:00	2010-09-16
244947	AH-2 3-3.5	soil	2010-09-15	00:00	2010-09-16
244948	AH-2 4-4.5	soil	2010-09-15	00:00	2010-09-16
244949	AH-2 5-5.5	soil	2010-09-15	00:00	2010-09-16
244950	AH-2 6-6.5	soil	2010-09-15	00:00	2010-09-16
244951	AH-3 0-1	soil	2010-09-15	00:00	2010-09-16
244952	AH-3 1-1.5	soil	2010-09-15	00:00	2010-09-16
244953	AH-3 2-2.5	soil	2010-09-15	00:00	2010-09-16
244954	AH-3 3-3.5	soil	2010-09-15	00:00	2010-09-16
244955	AH-3 4-4.5	soil	2010-09-15	00:00	2010-09-16
244956	AH-4 0-1	soil	2010-09-15	00:00	2010-09-16
244957	AH-4 1-1.5	soil	2010-09-15	00:00	2010-09-16
244958	AH-4 2-2.5	soil	2010-09-15	00:00	2010-09-16
244959	AH-4 3-3.5	soil	2010-09-15	00:00	2010-09-16
244960	AH-4 4-4.5	soil	2010-09-15	00:00	2010-09-16
244961	AH-4 5-5.5	soil	2010-09-15	00:00	2010-09-16
244962	AH-4 6-6.5	soil	2010-09-15	00:00	2010-09-16
244963	AH-4 7-7.5	soil	2010-09-15	00:00	2010-09-16
244964	AH-5 0-1	soil	2010-09-15	00:00	2010-09-16
244965	AH-5 1-1.5	soil	2010-09-15	00:00	2010-09-16
244966	AH-5 2-2.5	soil	2010-09-15	00:00	2010-09-16
244967	AH-5 3-3.5	soil	2010-09-15	00:00	2010-09-16

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244968	AH-5 4-4.5	soil	2010-09-15	00:00	2010-09-16
244969	AH-5 5-5.5	soil	2010-09-15	00:00	2010-09-16
244970	AH-5 6-6.5	soil	2010-09-15	00:00	2010-09-16
244971	AH-5 7-7.5	soil	2010-09-15	00:00	2010-09-16
244972	AH-5 8-8.5	soil	2010-09-15	00:00	2010-09-16

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
244938 - AH-1 0-1					<50.0	<10.0
244944 - AH-2 0-1	<0.200	<0.200	<0.200	<0.200	**254**	<20.0
244951 - AH-3 0-1					<50.0	<2.00
244956 - AH-4 0-1	**3.48**	**29.6**	**17.6**	**61.5**	**3770**	**757**
244957 - AH-4 1-1.5	**2.62**	**12.3**	**2.67**	**34.1**		
244958 - AH-4 2-2.5	**0.217**	**2.01**	**0.926**	**7.07**		
244964 - AH-5 0-1	<0.200	<0.200	<0.200	<0.200	**424**	<20.0

Sample: 244938 - AH-1 0-1

Param	Flag	Result	Units	RL
Chloride		**17500**	mg/Kg	4.00

Sample: 244939 - AH-1 1-1.5

Param	Flag	Result	Units	RL
Chloride		**12900**	mg/Kg	4.00

Sample: 244940 - AH-1 2-2.5

Param	Flag	Result	Units	RL
Chloride		**7640**	mg/Kg	4.00

Sample: 244941 - AH-1 3-3.5

Param	Flag	Result	Units	RL
Chloride		**4820**	mg/Kg	4.00

Sample: 244942 - AH-1 4-4.5

Param	Flag	Result	Units	RL
Chloride		**5550**	mg/Kg	4.00

Sample: 244943 - AH-1 5-5.5

Param	Flag	Result	Units	RL
Chloride		**5860**	mg/Kg	4.00

Sample: 244944 - AH-2 0-1

Param	Flag	Result	Units	RL
Chloride		**1470**	mg/Kg	4.00

Sample: 244945 - AH-2 1-1.5

Param	Flag	Result	Units	RL
Chloride		**1110**	mg/Kg	4.00

Sample: 244946 - AH-2 2-2.5

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

Sample: 244947 - AH-2 3-3.5

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

Sample: 244948 - AH-2 4-4.5

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

Sample: 244949 - AH-2 5-5.5

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

Sample: 244950 - AH-2 6-6.5

Param	Flag	Result	Units	RL
Chloride		**499**	mg/Kg	4.00

Sample: 244951 - AH-3 0-1

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

Sample: 244952 - AH-3 1-1.5

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

Sample: 244953 - AH-3 2-2.5

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

Sample: 244954 - AH-3 3-3.5

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

Sample: 244955 - AH-3 4-4.5

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

Sample: 244956 - AH-4 0-1

Param	Flag	Result	Units	RL
Chloride		**7750**	mg/Kg	4.00

Sample: 244957 - AH-4 1-1.5

Param	Flag	Result	Units	RL
Chloride		**4610**	mg/Kg	4.00

Sample: 244958 - AH-4 2-2.5

Param	Flag	Result	Units	RL
Chloride		**7380**	mg/Kg	4.00

Sample: 244959 - AH-4 3-3.5

Param	Flag	Result	Units	RL
Chloride		**3150**	mg/Kg	4.00

Sample: 244960 - AH-4 4-4.5

Param	Flag	Result	Units	RL
Chloride		**2410**	mg/Kg	4.00

Sample: 244961 - AH-4 5-5.5

Param	Flag	Result	Units	RL
Chloride		**2500**	mg/Kg	4.00

Sample: 244962 - AH-4 6-6.5

Param	Flag	Result	Units	RL
Chloride		**343**	mg/Kg	4.00

Sample: 244963 - AH-4 7-7.5

Param	Flag	Result	Units	RL
Chloride		**3270**	mg/Kg	4.00

Sample: 244964 - AH-5 0-1

Param	Flag	Result	Units	RL
Chloride		**1280**	mg/Kg	4.00

Sample: 244965 - AH-5 1-1.5

Param	Flag	Result	Units	RL
Chloride		**2650**	mg/Kg	4.00

Sample: 244966 - AH-5 2-2.5

Param	Flag	Result	Units	RL
Chloride		**8870**	mg/Kg	4.00

Sample: 244967 - AH-5 3-3.5

Param	Flag	Result	Units	RL
Chloride		**6280**	mg/Kg	4.00

Sample: 244968 - AH-5 4-4.5

Param	Flag	Result	Units	RL
Chloride		**4420**	mg/Kg	4.00

Sample: 244969 - AH-5 5-5.5

Param	Flag	Result	Units	RL
Chloride		**7540**	mg/Kg	4.00

Sample: 244970 - AH-5 6-6.5

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

Sample: 244971 - AH-5 7-7.5

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

Sample: 244972 - AH-5 8-8.5

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

Summary Report

Tom Franklin
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: March 17, 2011
Work Order: 11030726

Project Location: Eddy County, NM
Project Name: COG/Electra Tank Battery
Project Number: 114-6400677

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
259786	SB-1 0-1'	soil	2011-03-03	00:00	2011-03-04
259787	SB-1 3'	soil	2011-03-03	00:00	2011-03-04
259788	SB-1 5'	soil	2011-03-03	00:00	2011-03-04
259789	SB-1 7'	soil	2011-03-03	00:00	2011-03-04
259790	SB-1 10'	soil	2011-03-03	00:00	2011-03-04
259791	SB-1 15'	soil	2011-03-03	00:00	2011-03-04
259792	SB-1 20'	soil	2011-03-03	00:00	2011-03-04
259793	SB-1 25'	soil	2011-03-03	00:00	2011-03-04
259794	SB-1 30'	soil	2011-03-03	00:00	2011-03-04

Sample: 259786 - SB-1 0-1'

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

Sample: 259787 - SB-1 3'

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

Sample: 259788 - SB-1 5'

continued ...

sample 259788 continued ...

Param	Flag	Result	Units	RL

Param	Flag	Result	Units	RL
Chloride		**4860**	mg/Kg	4.00

Sample: 259789 - SB-1 7'

Param	Flag	Result	Units	RL
Chloride		**13300**	mg/Kg	4.00

Sample: 259790 - SB-1 10'

Param	Flag	Result	Units	RL
Chloride		**298**	mg/Kg	4.00

Sample: 259791 - SB-1 15'

Param	Flag	Result	Units	RL
Chloride		**612**	mg/Kg	4.00

Sample: 259792 - SB-1 20'

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

Sample: 259793 - SB-1 25'

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

Sample: 259794 - SB-1 30'

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

Summary Report

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

Report Date: August 11, 2011

Work Order: 11080233

Project Location: Eddy County, NM
Project Name: COG/Electra Tank Battery
Project Number: 114-6400677

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
273457	Trench 1 5' (AH-1)	soil	2011-07-28	00:00	2011-08-02
273458	CS-1 South Sidewall (AH-1)	soil	2011-07-28	00:00	2011-08-02
273459	CS-1 East Sidewall (AH-1)	soil	2011-07-28	00:00	2011-08-02
273460	CS-1 West Sidewall (AH-1)	soil	2011-07-28	00:00	2011-08-02
273461	CS-1 Bottom Hole 3' (AH-1)	soil	2011-07-28	00:00	2011-08-02
273462	CS-2 North Sidewall (AH-2)	soil	2011-07-28	00:00	2011-08-02
273463	CS-2 East Sidewall (AH-2)	soil	2011-07-28	00:00	2011-08-02
273464	CS-2 West Sidewall (AH-2)	soil	2011-07-28	00:00	2011-08-02
273465	CS-2 Bottom Hole 2' (AH-2)	soil	2011-07-28	00:00	2011-08-02
273466	CS-3 North Sidewall (AH-4)	soil	2011-07-28	00:00	2011-08-02
273467	CS-3 East Sidewall (AH-4)	soil	2011-07-28	00:00	2011-08-02
273468	CS-3 West Sidewall (AH-4)	soil	2011-07-28	00:00	2011-08-02
273469	CS-3 Bottom Hole 3' (AH-4)	soil	2011-07-28	00:00	2011-08-02
273470	CS-4 South Sidewall (AH-5)	soil	2011-07-28	00:00	2011-08-02
273471	CS-4 East Sidewall (AH-5)	soil	2011-07-28	00:00	2011-08-02
273472	CS-4 West Sidewall (AH-5)	soil	2011-07-28	00:00	2011-08-02
273473	CS-4 Bottom Hole 3' (AH-5)	soil	2011-07-28	00:00	2011-08-02

Sample: 273457 - Trench 1 5' (AH-1)

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

Sample: 273458 - CS-1 South Sidewall (AH-1)

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

Sample: 273459 - CS-1 East Sidewall (AH-1)

Param	Flag	Result	Units	RL
Chloride		**1900**	mg/Kg	4

Sample: 273460 - CS-1 West Sidewall (AH-1)

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

Sample: 273461 - CS-1 Bottom Hole 3' (AH-1)

Param	Flag	Result	Units	RL
Chloride		**5160**	mg/Kg	4

Sample: 273462 - CS-2 North Sidewall (AH-2)

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

Sample: 273463 - CS-2 East Sidewall (AH-2)

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

Sample: 273464 - CS-2 West Sidewall (AH-2)

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

Sample: 273465 - CS-2 Bottom Hole 2' (AH-2)

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

Sample: 273466 - CS-3 North Sidewall (AH-4)

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

Sample: 273467 - CS-3 East Sidewall (AH-4)

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

Sample: 273468 - CS-3 West Sidewall (AH-4)

Param	Flag	Result	Units	RL
Chloride		**2130**	mg/Kg	4

Sample: 273469 - CS-3 Bottom Hole 3' (AH-4)

Param	Flag	Result	Units	RL
Chloride		2160	mg/Kg	4

Sample: 273470 - CS-4 South Sidewall (AH-5)

Param	Flag	Result	Units	RL
Chloride		**710**	mg/Kg	4

Sample: 273471 - CS-4 East Sidewall (AH-5)

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

Sample: 273472 - CS-4 West Sidewall (AH-5)

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

Sample: 273473 - CS-4 Bottom Hole 3' (AH-5)

Param	Flag	Result	Units	RL
Chloride		**643**	mg/Kg	4

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: August 11, 2011

Work Order: 11080233

Project Location: Eddy County, NM
Project Name: COG/Electra Tank Battery
Project Number: 114-6400677

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
273457	Trench 1 5' (AH-1)	soil	2011-07-28	00:00	2011-08-02
273458	CS-1 South Sidewall (AH-1)	soil	2011-07-28	00:00	2011-08-02
273459	CS-1 East Sidewall (AH-1)	soil	2011-07-28	00:00	2011-08-02
273460	CS-1 West Sidewall (AH-1)	soil	2011-07-28	00:00	2011-08-02
273461	CS-1 Bottom Hole 3' (AH-1)	soil	2011-07-28	00:00	2011-08-02
273462	CS-2 North Sidewall (AH-2)	soil	2011-07-28	00:00	2011-08-02
273463	CS-2 East Sidewall (AH-2)	soil	2011-07-28	00:00	2011-08-02
273464	CS-2 West Sidewall (AH-2)	soil	2011-07-28	00:00	2011-08-02
273465	CS-2 Bottom Hole 2' (AH-2)	soil	2011-07-28	00:00	2011-08-02
273466	CS-3 North Sidewall (AH-4)	soil	2011-07-28	00:00	2011-08-02
273467	CS-3 East Sidewall (AH-4)	soil	2011-07-28	00:00	2011-08-02
273468	CS-3 West Sidewall (AH-4)	soil	2011-07-28	00:00	2011-08-02
273469	CS-3 Bottom Hole 3' (AH-4)	soil	2011-07-28	00:00	2011-08-02
273470	CS-4 South Sidewall (AH-5)	soil	2011-07-28	00:00	2011-08-02
273471	CS-4 East Sidewall (AH-5)	soil	2011-07-28	00:00	2011-08-02
273472	CS-4 West Sidewall (AH-5)	soil	2011-07-28	00:00	2011-08-02
273473	CS-4 Bottom Hole 3' (AH-5)	soil	2011-07-28	00:00	2011-08-02

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

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

Report Contents

Case Narrative

Samples for project COG/Electra Tank Battery were received by TraceAnalysis, Inc. on 2011-08-02 and assigned to work order 11080233. Samples for work order 11080233 were received intact at a temperature of 3.9 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	71054	2011-08-05 at 15:57	83671	2011-08-08 at 12:40
Chloride (Titration)	SM 4500-Cl B	71054	2011-08-05 at 15:57	83770	2011-08-10 at 16:05

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 11080233 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: 273457 - Trench 1 5' (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83671	Date Analyzed:	2011-08-08	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273458 - CS-1 South Sidewall (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83671	Date Analyzed:	2011-08-08	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273459 - CS-1 East Sidewall (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83671	Date Analyzed:	2011-08-08	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1900**	mg/Kg	100	4.00

Sample: 273460 - CS-1 West Sidewall (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83671	Date Analyzed:	2011-08-08	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273461 - CS-1 Bottom Hole 3' (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83671	Date Analyzed:	2011-08-08	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**5160**	mg/Kg	100	4.00

Sample: 273462 - CS-2 North Sidewall (AH-2)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83671	Date Analyzed:	2011-08-08	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273463 - CS-2 East Sidewall (AH-2)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83671	Date Analyzed:	2011-08-08	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273464 - CS-2 West Sidewall (AH-2)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83671	Date Analyzed:	2011-08-08	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273465 - CS-2 Bottom Hole 2' (AH-2)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83671	Date Analyzed:	2011-08-08	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273466 - CS-3 North Sidewall (AH-4)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83770	Date Analyzed:	2011-08-10	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273467 - CS-3 East Sidewall (AH-4)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83770	Date Analyzed:	2011-08-10	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273468 - CS-3 West Sidewall (AH-4)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83770	Date Analyzed:	2011-08-10	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2130**	mg/Kg	50	4.00

Sample: 273469 - CS-3 Bottom Hole 3' (AH-4)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83770	Date Analyzed:	2011-08-10	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2160**	mg/Kg	50	4.00

Sample: 273470 - CS-4 South Sidewall (AH-5)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83770	Date Analyzed:	2011-08-10	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**710**	mg/Kg	50	4.00

Sample: 273471 - CS-4 East Sidewall (AH-5)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83770	Date Analyzed:	2011-08-10	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273472 - CS-4 West Sidewall (AH-5)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83770	Date Analyzed:	2011-08-10	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

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

Sample: 273473 - CS-4 Bottom Hole 3' (AH-5)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	83770	Date Analyzed:	2011-08-10	Analyzed By:	AR
Prep Batch:	71054	Sample Preparation:	2011-08-08	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**643**	mg/Kg	50	4.00

Method Blanks

Method Blank (1) QC Batch: 83671

QC Batch:	83671	Date Analyzed:	2011-08-08	Analyzed By:	AR
Prep Batch:	71054	QC Preparation:	2011-08-05	Prepared By:	AR

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

Method Blank (1) QC Batch: 83770

QC Batch:	83770	Date Analyzed:	2011-08-10	Analyzed By:	AR
Prep Batch:	71054	QC Preparation:	2011-08-05	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 83671 | Date Analyzed: 2011-08-08 | Analyzed By: AR
Prep Batch: 71054 | QC Preparation: 2011-08-05 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			95.4	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.

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	10	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: 83770 | Date Analyzed: 2011-08-10 | Analyzed By: AR
Prep Batch: 71054 | QC Preparation: 2011-08-05 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			94.6	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.

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	10	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: 273465

QC Batch: 83671 | Date Analyzed: 2011-08-08 | Analyzed By: AR
Prep Batch: 71054 | QC Preparation: 2011-08-05 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			9920	mg/Kg	100	10000	<385	99	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			10400	mg/Kg	100	10000	<385	104	79.4 - 120.6	5	20

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

Matrix Spike (MS-1) Spiked Sample: 273473

QC Batch: 83770 | Date Analyzed: 2011-08-10 | Analyzed By: AR
Prep Batch: 71054 | QC Preparation: 2011-08-05 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			10500	mg/Kg	100	10000	643	98	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	643	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.

Calibration Standards

Standard (ICV-1)

QC Batch: 83671 | Date Analyzed: 2011-08-08 | 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	2011-08-08

Standard (CCV-1)

QC Batch: 83671 | Date Analyzed: 2011-08-08 | 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	2011-08-08

Standard (ICV-1)

QC Batch: 83770 | Date Analyzed: 2011-08-10 | 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	98.4	98	85 - 115	2011-08-10

Standard (CCV-1)

QC Batch: 83770 | Date Analyzed: 2011-08-10 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	102	102	85 - 115	2011-08-10

Appendix

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

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

Analysis Request of Chain of Custody Record

xwo #: 11080233

PAGE: 1 OF: 2

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.: 114-640067

PROJECT NAME: COG / Elatra Federal North TB
Eddy Co, NM

LAB I.D. NUMBER	DATE 2011	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
273457	7/28		S		X	Trench 1 5' (AH-1)	1				X	
458						CS-1 South Sidewall (AH-1)						
459						CS-1 East Sidewall (AH-1)						
460						CS-1 West Sidewall (AH-1)						
461						CS-1 Bottom Hole 3' (AH-1)						
462						CS-2 North Sidewall (AH-2)						
463						CS-2 East Sidewall (AH-2)						
464						CS-2 West Sidewall (AH-2)						
465						CS-2 Bottom Hole 2' (AH-2)						
466						CS-3 North Sidewall (AH-4)						

ANALYSIS REQUEST (Circle or Specify Method No.)

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

RELINQUISHED BY: (Signature) — Date: 8/2/11 Time: 1515 — RECEIVED BY: (Signature) — Date: 8/2/11 Time: 15:15

SAMPLED BY: (Print & Initial) CMB — Date: 7/28/11 Time:

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.9°C Intact

REMARKS: All tests - Midland

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

Xwo #: 11080233

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

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.: 114-6400677

PROJECT NAME: COG / Electra Federal North TB
Eddy Co., NM

LAB I.D. NUMBER	DATE 2011	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
273467	7/28		S		X	CS-3 East Sidewall (AH-4)	1				X	
468						CS-3 West Sidewall (AH-4)						
469						CS-3 Bottom Hole 3' (AH-4)						
470						CS-4 South Sidewall (AH-5)						
471						CS-4 East Sidewall (AH-5)						
472						CS-4 West Sidewall (AH-5)						
473						CS-4 Bottom Hole 3' (AH-5)						

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: 8/2/11 Time: 1515 — RECEIVED BY: (Signature) — Date: 8/4/11 Time: 1515

SAMPLED BY: (Print & Initial) CMB — Date: 7/28/11 Time:

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

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

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

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.9°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.