PGRL0922963725
2273

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

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JAN 14 2013
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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 1300 Midland, Texas 79701	Telephone No.	(432) 685-4332
Facility Name	West Pearl 36 State #1	Facility Type	Tank Battery

Surface Owner: State	Mineral Owner	Lease No. 30-025-38079

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	36	19S	34E	1210	North	2195	East	Lea

Latitude N 32.61835° **Longitude** W 103.51694°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 30bbls	Volume Recovered 20bbls
Source of Release: Water Tank	Date and Hour of Occurrence 07/28/2009 10:00 p.m.	Date and Hour of Discovery 07/28/2009 11:00 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Mike Bratcher-OCD** **Terry Gregston-BLM**	
By Whom? Pat Ellis	Date and Hour 06/09/2009 1:00 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Water Tank ran over due to too much volume entering facility. Decreased volume by rerouting water to SWD.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected and sampled the spill site to define the spills extent. No soils exceeded the RRAL for TPH and BTEX. However, chloride impacted soils were detected in the deeper soil, but vertically defined. Based on the results of the investigation, the NMOCD approved deferring the deeper impact and recommended closure of the site, without any additional activities. Tetra Tech then prepared a closure report and submitted it to NMOCD for review.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez (agent for COG)	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: ike.tavarez@tetratech.com	Conditions of Approval:	Attached ☐
Date: 12-5-12 Phone: (432) 686-3023		

* Attach Additional Sheets If Necessary

HOBBS OCD

JAN 14 2013

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AUG 10 2009

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District I
1625 N French Dr., Hobbs, NM 88240
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1000 Rio Brazos Road, Aztec, NM 87410
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State of New Mexico
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Form C-141
Revised October 10, 2003

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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 – West Pearl 36 State #1	Facility Type- Battery

Surface Owner State	Mineral Owner	Lease No. 30-025-38079

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	36	19S	34E	1210	North	2195	East	Lea

Latitude_____ Longitude_____

NATURE OF RELEASE

Type of Release-Produced Water	Volume of Release-30bbls	Volume Recovered- 20bbls
Source of Release- Water Tank	Date and Hour of Occurrence- 7/28/09- 10.00 pm	Date and Hour of Discovery 7/28/09-11:00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bracher NMOCD District 2,Eddy Co Terry Gregston BLM	
By Whom? Pat Ellis	Date and Hour 6/9/09 @ 1 00pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse	

If a Watercourse was Impacted, Describe Fully *

WATER @ 90'

Describe Cause of Problem and Remedial Action Taken.*
Water Tank ran over due to too much volume entering facility Decreased volume by rerouting water to SWD.

Describe Area Affected and Cleanup Action Taken *
All water was contained inside firewall at facility. All standing fluid was removed; all contaminated soil will be removed.
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: K C	OIL CONSERVATION DIVISION
Printed Name Kanicia Carrillo	Approved by ~~District Supervisor~~ ENV ENGINEER: Geoffrey Leking
Title: Regulatory Analyst	Approval Date: 08/17/09 Expiration Date: 10/16/09
E-mail Address: kcarrillo@conchoresources.com	Conditions of Approval: DELINEATE TO CLEAN & SUBMIT FINAL C-141 BY 10/16/09 Attached ☐ IRP-09-8-2273
Date 08/10/09 Phone: 432-685-4332	

* Attach Additional Sheets If Necessary

FGRL0922963143

pGRL0922963725

SITE INFORMATION

1RP-09-8-2273 Report Type: Closure Report

General Site Information:

Site:	**West Pearl 36 State #1 Tank Battery**
Company:	**COG Operating LLC**
Section, Township and Range	**Section 36, T19S, R34E Unit Letter - F (NW 1/4)**
Lease Number:	**30-025-38079**
County:	**Lea County**
GPS:	**N 32 .61835° - W 103.51694°**
Surface Owner:	State
Mineral Owner:	
Directions:	From intersection of 529 and 180/62, travel 8.7 miles west on 180/62, left Co Road 27-A (Marathon Road) 1.2 miles, right 500' to location.

Release Data:

Date Released:	7/28/2009
Type Release:	Produced water
Source of Contamination:	Water Tank ran over due to too much volume entering
Fluid Released:	30 bbls
Fluids Recovered:	20 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**	Well data reports at 80'
>100 ft.	0	

WellHead Protection:	*Ranking Score*	*Site Data*
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	0	0

Surface Body of Water:	*Ranking Score*	*Site Data*
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0

Total Ranking Score:	10

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

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DEC 22 2015

DEC 22 2015

TETRA TECH

HOBBS OCD

JAN 14 2013

RECEIVED

December 5, 2012

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

Re: Closure Report for the COG Operating LLC., West Pearl 36 State #1 Tank Battery, Unit F, Section 36, Township 19 South, Range 34 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the West Pearl 36 State #1 Tank Battery located in Unit F, Section 36, Township 19 South, Range 34 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.61832°, W 103.51694°. 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 July 28, 2009, and released approximately thirty (30) barrels of produced water due to the water tank running over. To alleviate the problem, COG personnel rerouted volume to other facilities. Twenty (20) barrels of standing fluids were recovered. The spill was contained by the berm walls within the tank battery. The initial C-141 form is enclosed in Appendix A.

Groundwater

According to the NMOCD map, the depth to groundwater in the area appears to be 90' to 100' below surface. The New Mexico Office of the State Engineer's office reported several well ranging from 28' (Section 25) to 123' (Section 11). The groundwater data is shown in Appendix B.

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

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

(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

Auger holes

On August 26, 2009, Tetra Tech personnel inspected and sampled the spill area, which measured approximately 30' x 85'. Four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all the submitted samples were below the RRAL for TPH and BTEX. The areas of AH-1 and AH-4 showed a shallow (1.0) chloride impact to the soils. The remaining auger holes showed a deeper impact to the soils, with bottom auger hole samples of AH-2 (3-3.5') of 398 mg/kg and AH-3 (5-5.5') of 1,080 mg/kg. In order to define the chloride impact, soil borings were installed utilizing an air rotary drilling rig in these areas.

Soil Borings

On March 5, 2010, Tetra Tech personnel supervised the installation of soil borings (SB-1 and SB-2) to define the chloride impacted areas. The soil boring locations are shown on Figure 3. The sampling results are shown in Table 1. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. Referring to Table 1, SB-1 and SB-2 samples showed declining chloride concentrations with depth, but spiked at 20.0' at SB-1 (2,490 mg/kg) and 30.0' to 40.0' at SB-2 (3,910 mg/kg to 7,060 mg/kg). The chloride impact was not vertically defined in these areas.

In order to define the vertical extents, two additional soil bores (SB-1 and SB-2) were installed on May 20, 2011. Upon arrival to the site, the tank battery facility was re-constructed and the facility was lined with a plastic liner. Due to plastic liner in the facility, the soil borings were installed outside tank battery on the north edge of the facility berm to attempt to define the extents. The soil boring locations are shown on Figure 3.

Referring to Table 1, SB-1 showed elevated chloride concentrations at 20.0' (2,710 mg/kg) to 40.0' (7,020 mg/kg) and defined to 220 mg/kg at 50.0' below surface. SB-2 showed chloride impacted soils at 30.0' (4,760 mg/kg) to 40.0' (7,770 mg/kg) and declined to 611 mg/kg at 70.0' below surface.

Based on the results, Tetra Tech personnel met with NMOCD to discuss the sampling results of SB-1 and SB-2. The NMOCD requested additional soil borings north of the tank battery to attempt to define the horizontal extents of the impact encountered at 20.0' to 40.0' below surface.

On June 11, 2012, Tetra Tech supervised the installation of four (4) additional soil borings (SB-3 through SB-6) on the pad. Soil boring (SB-3) showed similar chloride concentrations at 20.0' to 40.0', as encountered in the previous soil borings (SB-1 and SB-2). Additional soil borings (SB-4, SB-5 and SB-6) were installed and also showed similar concentrations in the subsurface soils. The sampling results are summarized in Table 1. The soil boring locations are shown on Figure 3. The chloride concentrations in the deeper soils appear to be historical.

Closure Request

On September 20, 2012, Tetra Tech met with Geoffrey Leking with the NMOCD to discuss the results of the investigation. The NMOCD agreed that the deeper impact encountered at 20.0' to 40.0 below surface appears to be historical. Due to the limited impact in the subsurface soils and extent on the pad, any remediation or excavation of the soils would not be practical for the site and requested closure of the site due to these circumstances.

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

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Project Manager

cc: Pat Ellis – COG
cc: Jim Amos– BLM

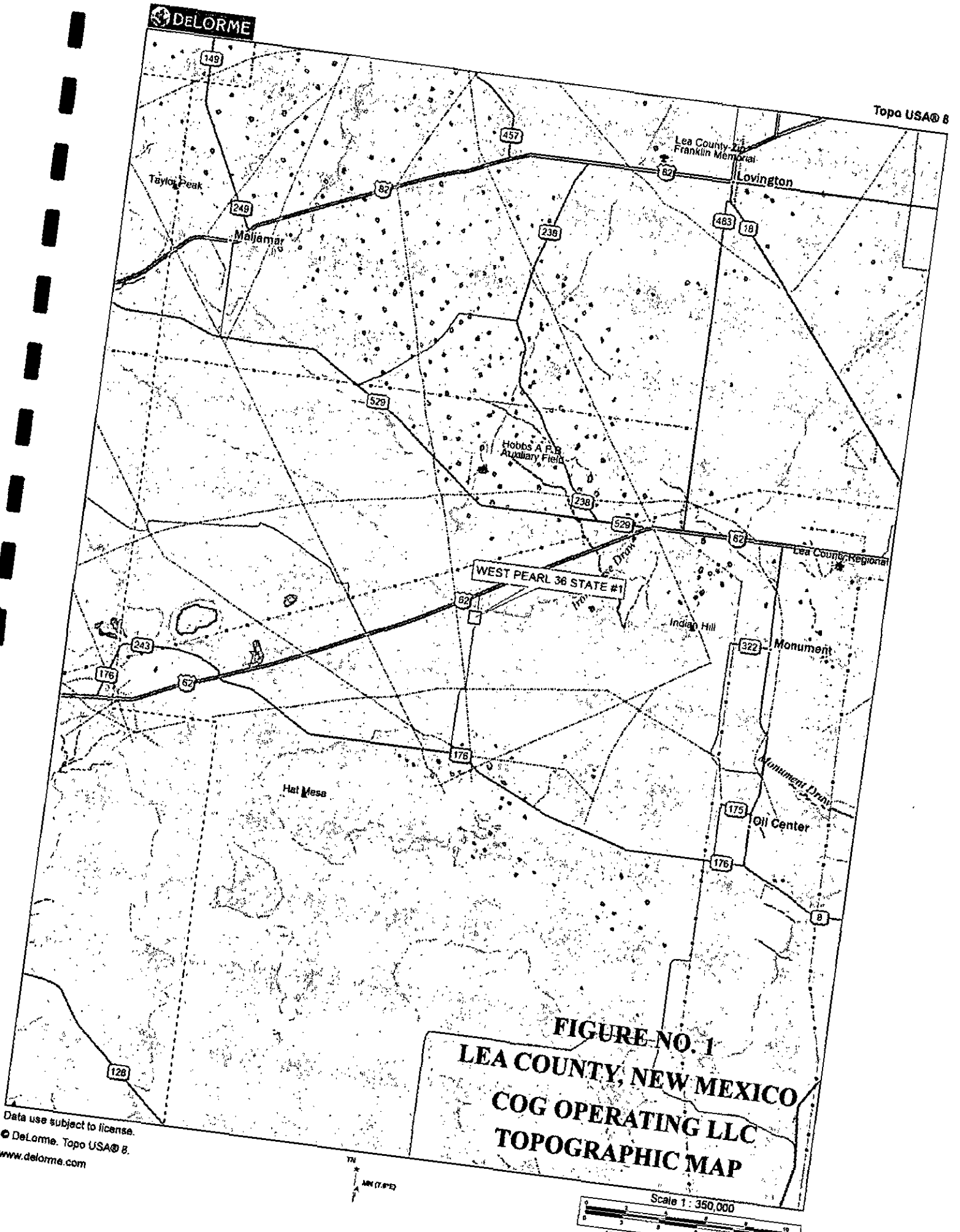


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

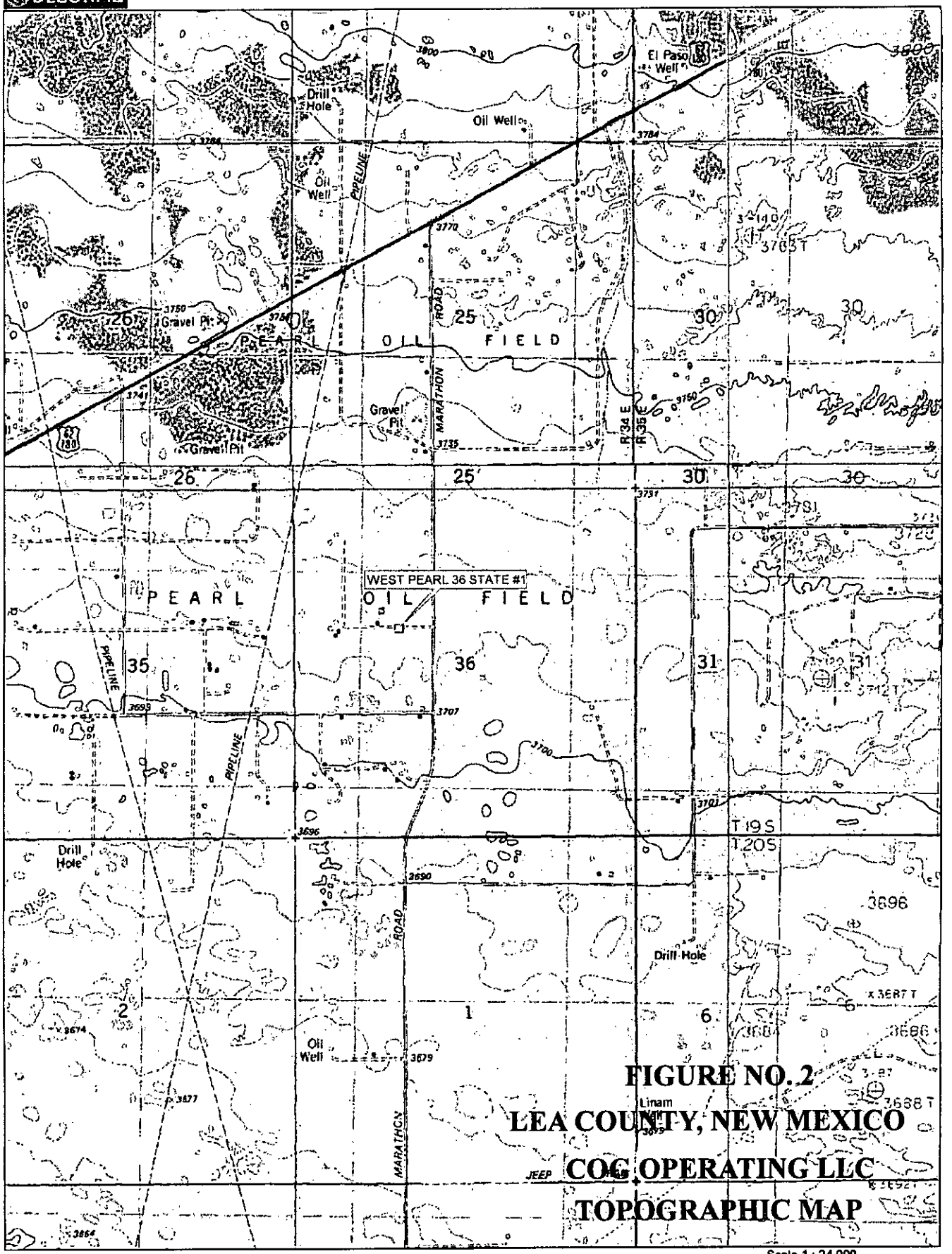


FIGURE NO. 2

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

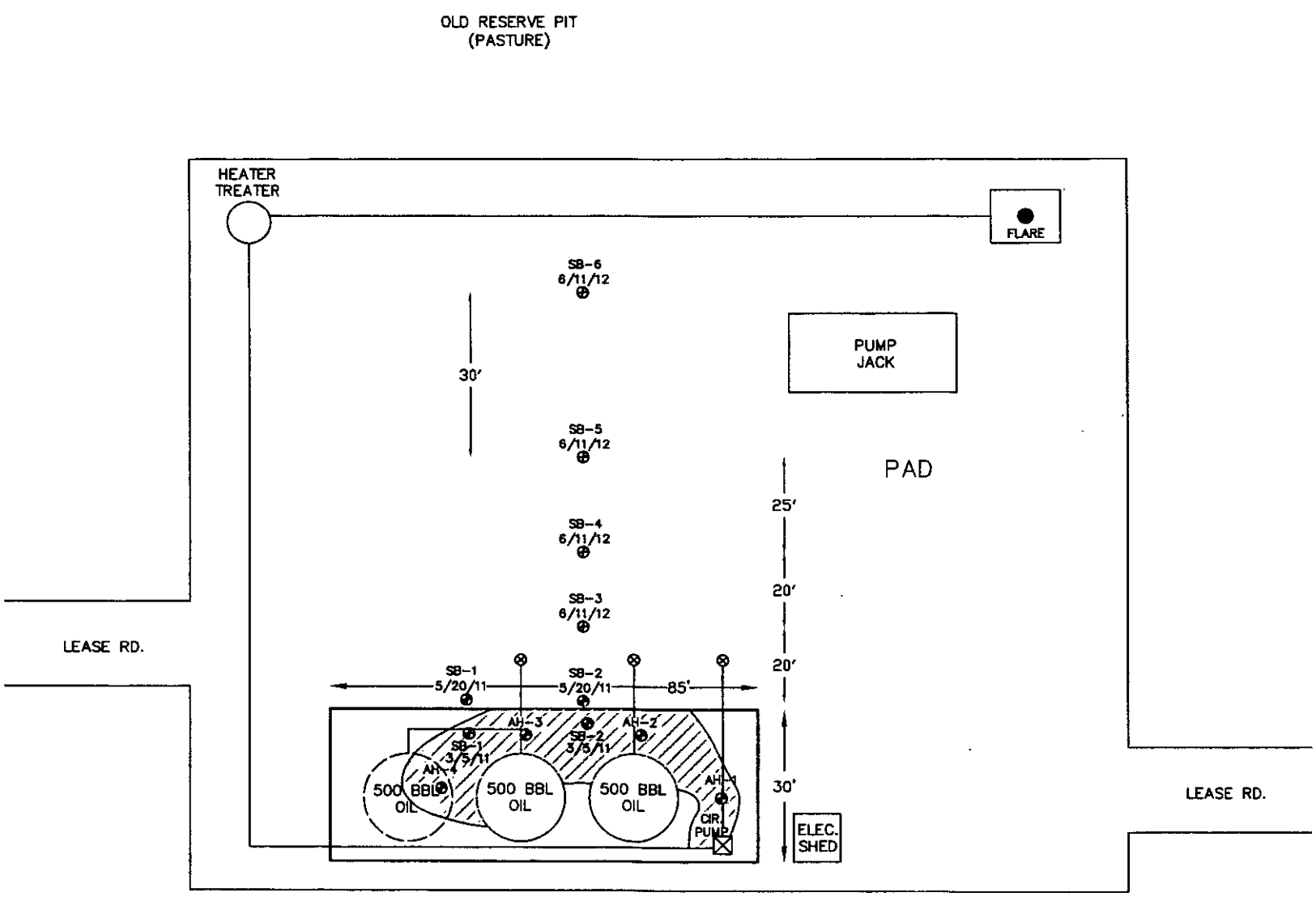
TN

MN (7.6°E)

Scale 1 : 24,000

1" = 2,000.0 ft

Data Zoom 13-6



--- INSTALLED AFTER SPILL
AUGER HOLE LOCATIONS
SOIL BORING SAMPLED 3/5/11
SOIL BORING SAMPLED 5/20/11
SOIL BORING SAMPLED 6/11/12
SPILL AREA

NOTES:
TANK BATTERY REBUILT IN 2011
LINER INSTALLED INSIDE BERM AREA
SB INSTALLED 5-10' FROM BERM TO PRESERVE LINER

NOT TO SCALE

DATE: 6/19/2012
DWN. BY: IM
FILE: H:\COG\84X0273 WEST PEARL 36 STATE

FIGURE NO. 3

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

WEST PEARL 36 STATE #1 TB

TETRA TECH, INC.
MIDLAND, TEXAS

Table 1
COG OPERATING LLC
WEST PEARL 36 STATE #1
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
AH-1	8/26/2009	0-1'	X		<50.0	<1.00	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	**1,340**
	8/26/2009	1-1.5'	X		-	-	-	-	-	-	-	<200
	8/26/2009	2-2.5'	X		-	-	-	-	-	-	-	<200
	8/26/2009	3-3.5'	X		-	-	-	-	-	-	-	<200
AH-2	8/26/2009	0-1'	X		<50.0	<1.00	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	**2,070**
	8/26/2009	1-1.5'	X		-	-	-	-	-	-	-	**1,720**
	8/26/2009	2-2.5'	X		-	-	-	-	-	-	-	762
	8/26/2009	3-3.5'	X		-	-	-	-	-	-	-	459
SB-2	3/5/2010	2-3'	X		-	-	-	-	-	-	-	946
inside dike	3/5/2010	4-5'	X		-	-	-	-	-	-	-	573
	3/5/2010	6-7'	X		-	-	-	-	-	-	-	319
	3/5/2010	10-11'	X		-	-	-	-	-	-	-	398
	3/5/2010	15-16'	X		-	-	-	-	-	-	-	<200
	3/5/2010	20-21'	X		-	-	-	-	-	-	-	558
	3/5/2010	25-26'	X		-	-	-	-	-	-	-	349
	3/5/2010	30-31'	X		-	-	-	-	-	-	-	**3,910**
	3/5/2010	40-41'	X		-	-	-	-	-	-	-	**7,060**
SB-2	5/20/2010	30'	X		-	-	-	-	-	-	-	**4,760**
outside dike	5/20/2010	40'	X		-	-	-	-	-	-	-	**7,770**
	5/20/2010	50'	X		-	-	-	-	-	-	-	**1,080**
	5/20/2010	60'	X		-	-	-	-	-	-	-	609
	5/20/2010	70'	X		-	-	-	-	-	-	-	611

Table 1
COG OPERATING LLC
WEST PEARL 36 STATE #1
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
AH-3	8/26/2009	0-1'	X		<50.0	<1.00	<50.0	-	-	-	-	611
	8/26/2009	1-1.5'	X		-	-	-	-	-	-	-	631
	8/26/2009	2-2.5'	X		-	-	-	-	-	-	-	**1,190**
	8/26/2009	3-3.5'	X		-	-	-	-	-	-	-	**1,120**
	8/26/2009	4-4.5'	X		-	-	-	-	-	-	-	994
	8/26/2009	5-5.5'	X		-	-	-	-	-	-	-	**1,080**
SB-1	3/5/2010	2-3'	X		-	-	-	-	-	-	-	**1,050**
inside dike	3/5/2010	4-5'	X		-	-	-	-	-	-	-	757
	3/5/2010	6-7'	X		-	-	-	-	-	-	-	<200
	3/5/2010	10-11'	X		-	-	-	-	-	-	-	335
	3/5/2010	15-16'	X		-	-	-	-	-	-	-	263
	3/5/2010	20-21'	X		-	-	-	-	-	-	-	**2,490**
SB-1	5/20/2011	15'	X		-	-	-	-	-	-	-	666
outside dike	5/21/2011	20'	X		-	-	-	-	-	-	-	**2,710**
	5/22/2011	25'	X		-	-	-	-	-	-	-	**6,750**
	5/23/2011	30'	X		-	-	-	-	-	-	-	**7,840**
	5/24/2011	40'	X		-	-	-	-	-	-	-	**7,020**
	5/25/2011	50'	X		-	-	-	-	-	-	-	220
AH-4	8/26/2009	0-1'	X		<50.0	<1.00	<50.0	-	-	-	-	**1,960**
	8/26/2009	1-1.5'	X		-	-	-	-	-	-	-	528
	8/26/2009	2-2.5'	X		-	-	-	-	-	-	-	<200
	8/26/2009	3-3.5'	X		-	-	-	-	-	-	-	<200
	8/26/2009	4-4.5'	X		-	-	-	-	-	-	-	<200

Table 1
COG OPERATING LLC
WEST PEARL 36 STATE #1
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
SB-3	6/11/2012	0-1	X		-	-	-	-	-	-	-	53.1
	6/11/2012	2-3	X		-	-	-	-	-	-	-	280
	6/11/2012	4-5	X		-	-	-	-	-	-	-	<20.0
	6/11/2012	6-7	X		-	-	-	-	-	-	-	101
	6/11/2012	9-10	X		-	-	-	-	-	-	-	164
	6/11/2012	14-15	X		-	-	-	-	-	-	-	29.1
	6/11/2012	19-20	X		-	-	-	-	-	-	-	300
	6/11/2012	29-30	X		-	-	-	-	-	-	-	**3,380**
	6/11/2012	39-40	X		-	-	-	-	-	-	-	**6,800**
	6/11/2012	49-50	X		-	-	-	-	-	-	-	295
	6/11/2012	59-60	X		-	-	-	-	-	-	-	72.6
SB-4	6/11/2012	4-5	X		-	-	-	-	-	-	-	96.9
	6/11/2012	9-10	X		-	-	-	-	-	-	-	<20.0
	6/11/2012	14-15	X		-	-	-	-	-	-	-	165
	6/11/2012	19-20	X		-	-	-	-	-	-	-	281
	6/11/2012	29-30	X		-	-	-	-	-	-	-	**5,590**
	6/11/2012	39-40	X		-	-	-	-	-	-	-	**5,940**
	6/11/2012	49-50	X		-	-	-	-	-	-	-	602
	6/11/2012	59-60	X		-	-	-	-	-	-	-	389

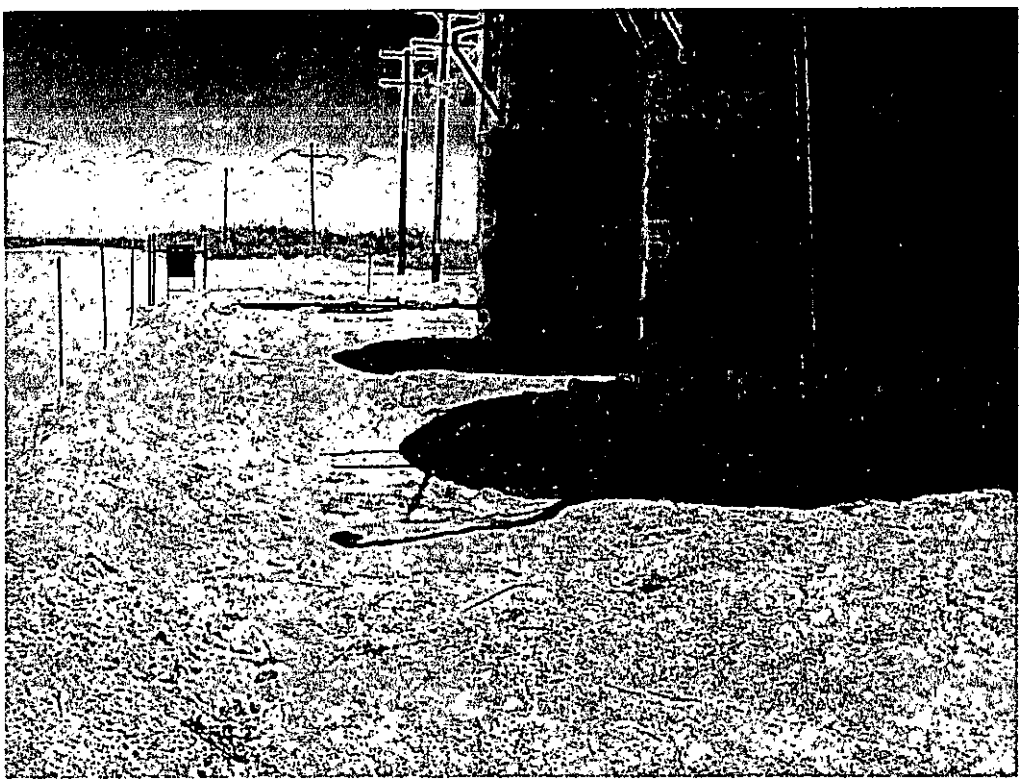
Table 1
COG OPERATING LLC
WEST PEARL 36 STATE #1
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
SB-5	6/11/2012	4-5	X		-	-	-	-	-	-	-	350
	6/11/2012	9-10	X		-	-	-	-	-	-	-	77.7
	6/11/2012	14-15	X		-	-	-	-	-	-	-	355
	6/11/2012	19-20	X		-	-	-	-	-	-	-	879
	6/11/2012	29-30	X		-	-	-	-	-	-	-	**9,420**
	6/11/2012	39-40	X		-	-	-	-	-	-	-	**5,930**
	6/11/2012	49-50	X		-	-	-	-	-	-	-	636
	6/11/2012	59-60	X		-	-	-	-	-	-	-	**1,950**
SB-6	6/11/2012	4-5	X		-	-	-	-	-	-	-	670
	6/11/2012	9-10	X		-	-	-	-	-	-	-	896
	6/11/2012	14-15	X		-	-	-	-	-	-	-	685
	6/11/2012	19-20	X		-	-	-	-	-	-	-	960
	6/11/2012	29-30	X		-	-	-	-	-	-	-	**6,890**
	6/11/2012	39-40	X		-	-	-	-	-	-	-	**6,140**
	6/11/2012	49-50	X		-	-	-	-	-	-	-	429
	6/11/2012	59-60	X		-	-	-	-	-	-	-	265

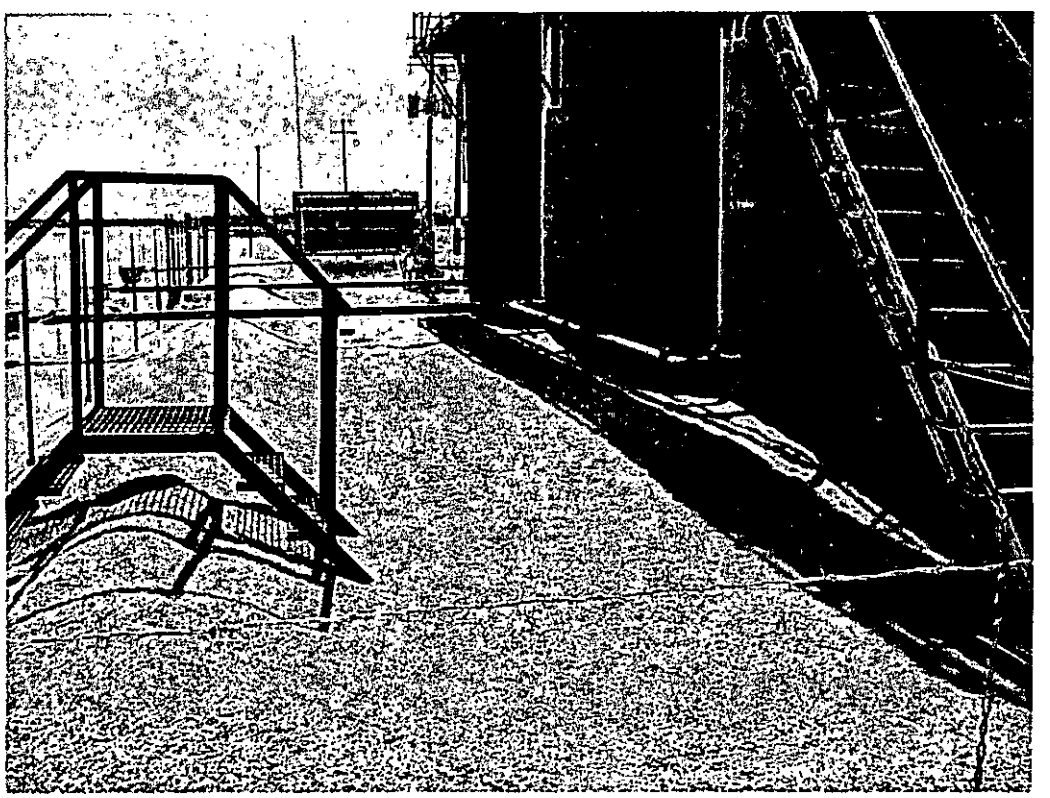
(-) Not Analyzed

COG Operating LLC
West Pearl 36 State #1
Lea County, New Mexico

TETRA TECH



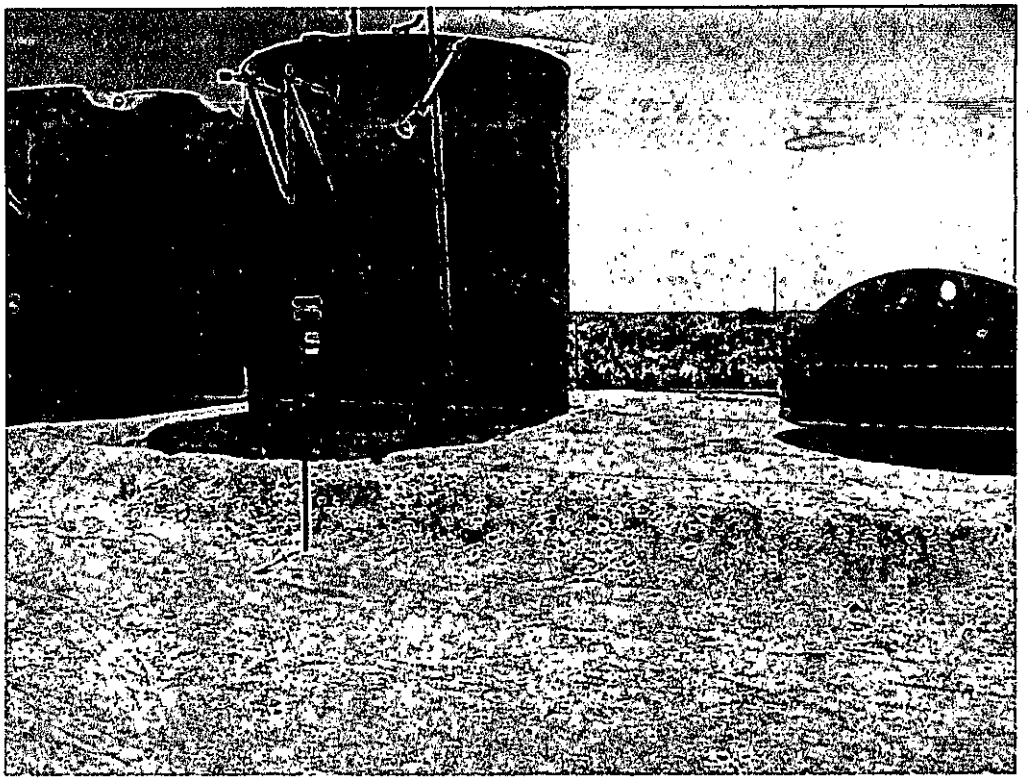
August 2009



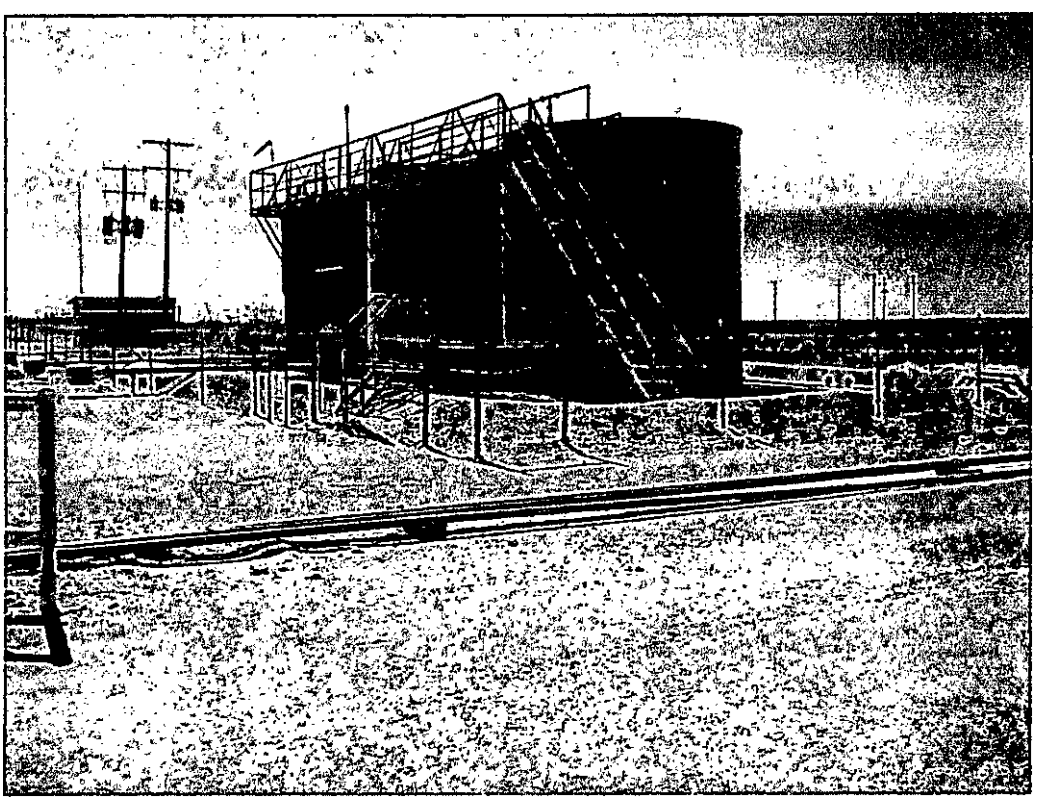
May 2011

COG Operating LLC
West Pearl 36 State #1
Lea County, New Mexico

TETRA TECH



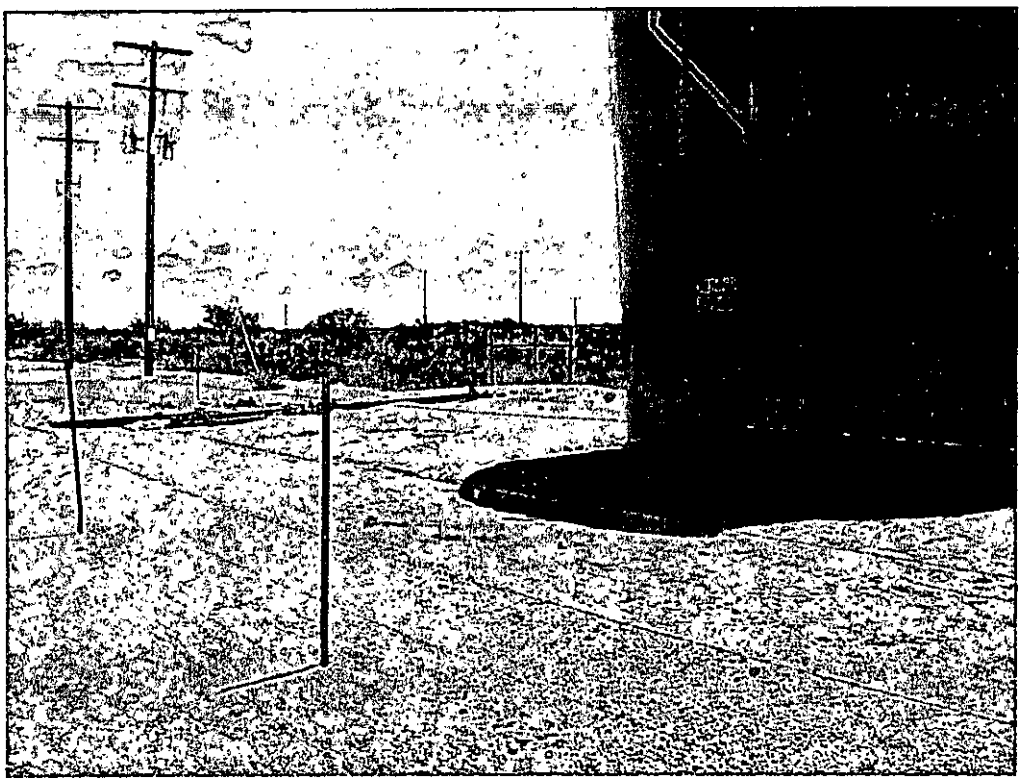
August 2009



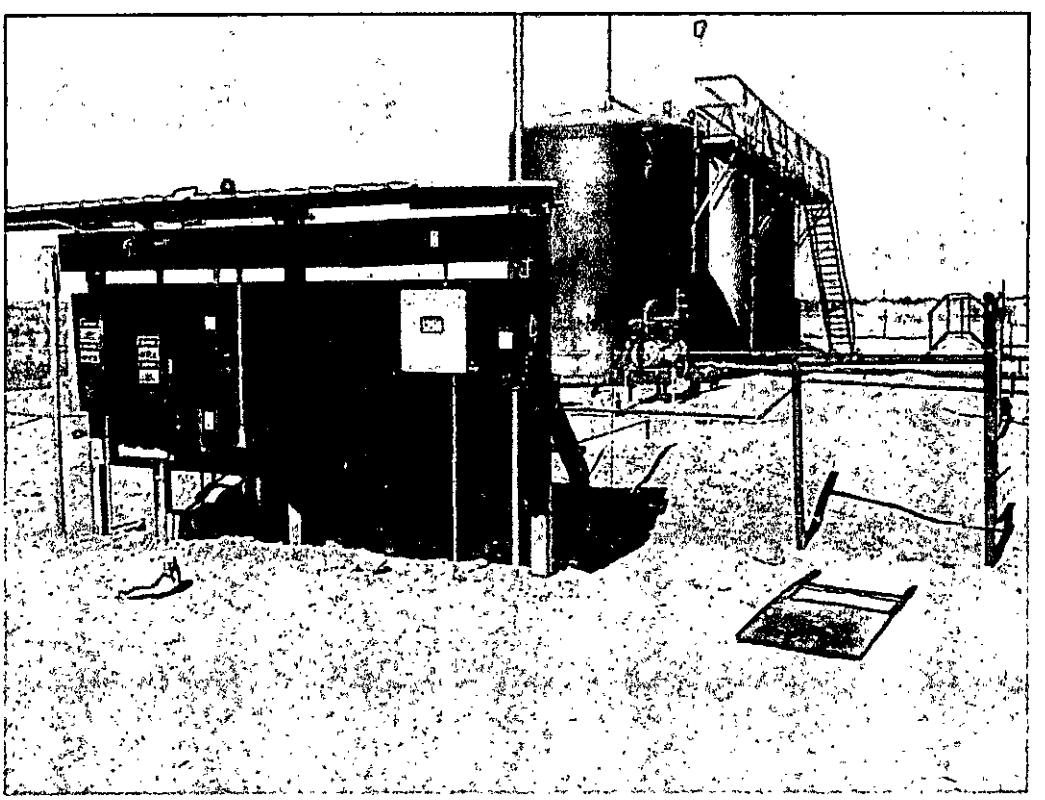
May 2011

COG Operating LLC
West Pearl 36 State #1
Lea County, New Mexico

TETRA TECH



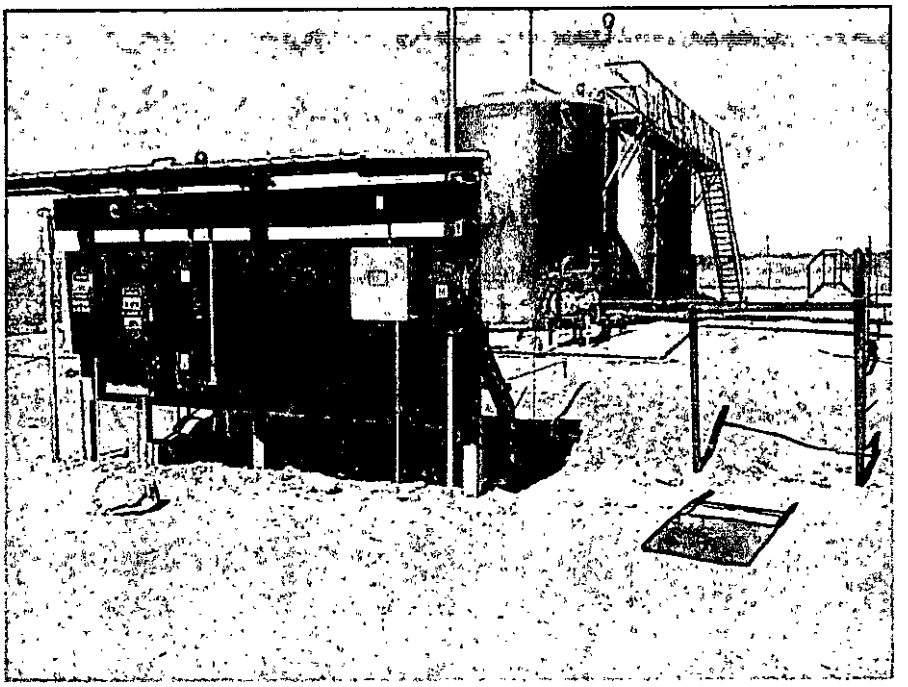
August 2009



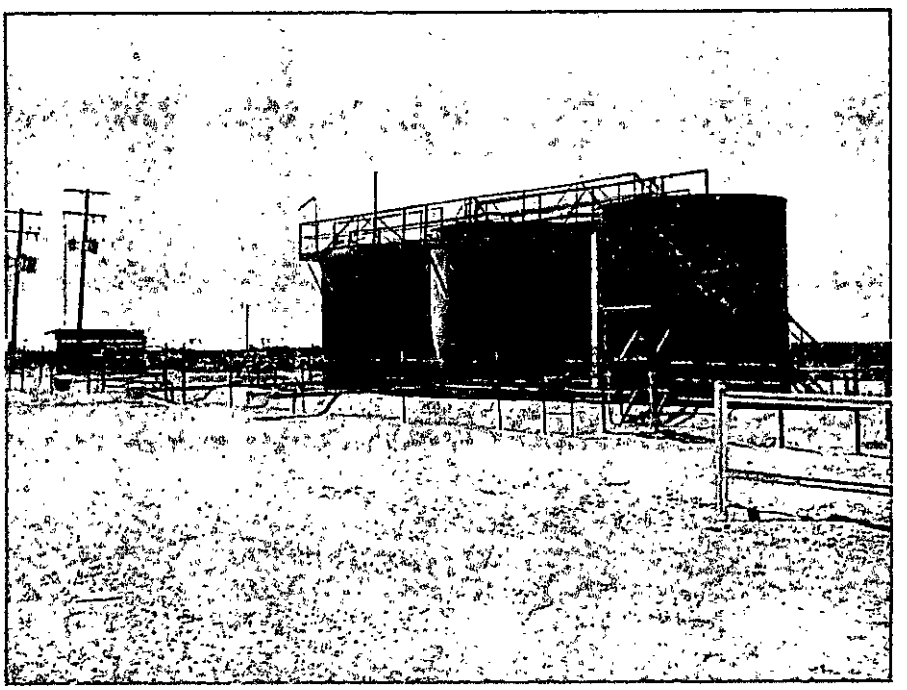
May 2011

COG Operating LLC
West Pearl 36 State #1 Tank Battery
Lea County, New Mexico
Site: May 20, 2011

TETRA TECH



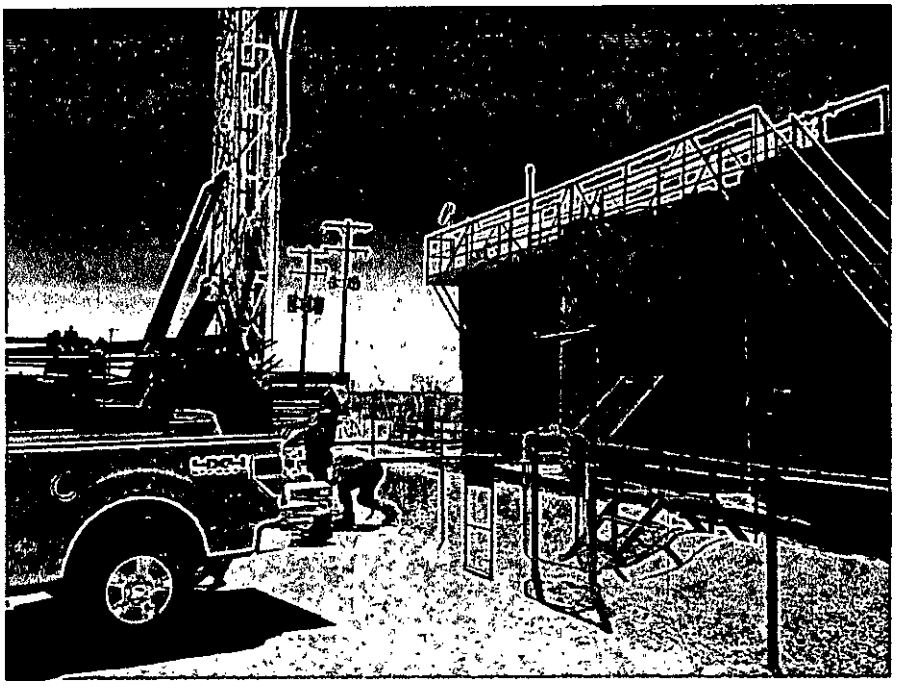
Rebuilt tank battery



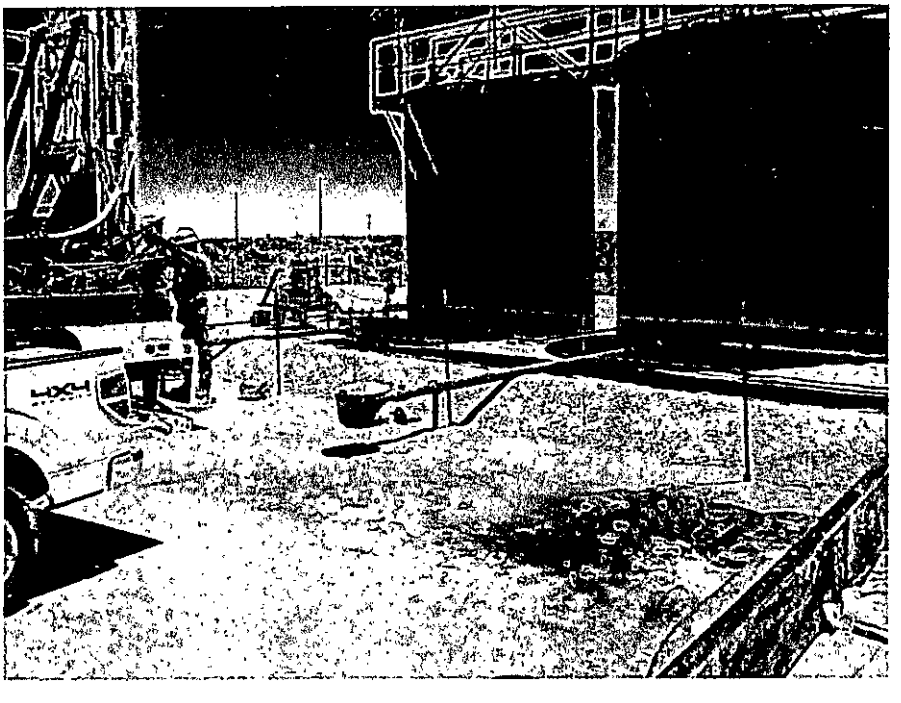
New tanks and lined facility

COG Operating LLC
West Pearl 36 State #1 Tank Battery
Lea County, New Mexico
Site: May 20, 2011

TETRA TECH



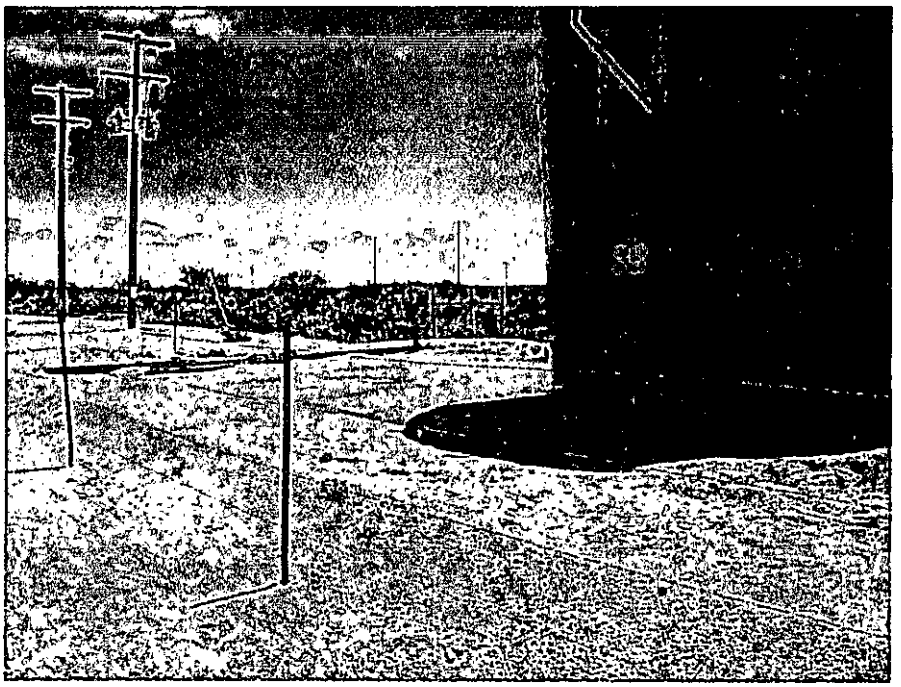
Installing SB-1 outside of berm



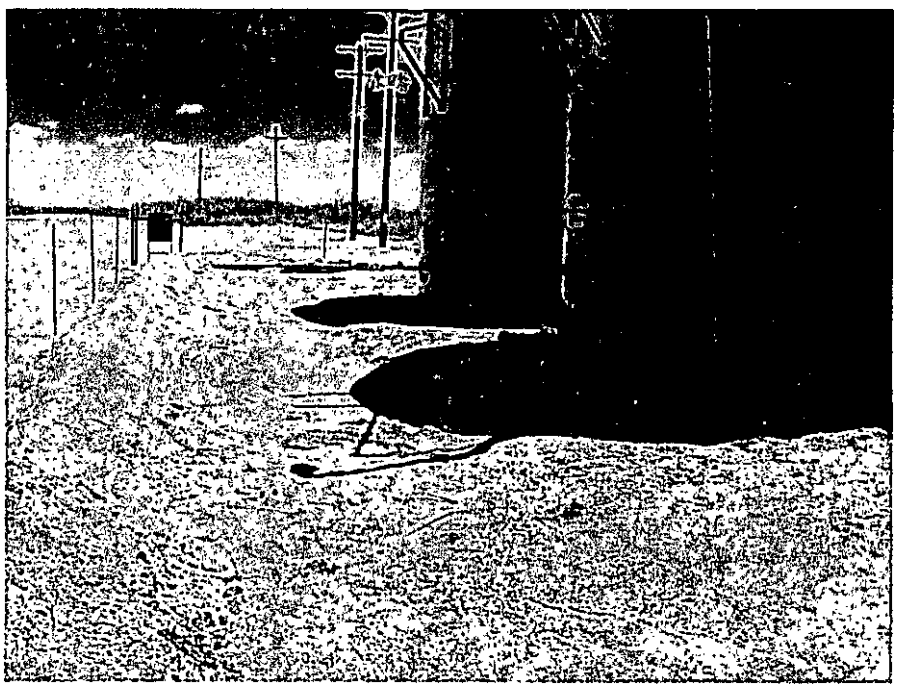
Installing SB-2 outside of berm

COG Operating LLC
West Pearl 36 State #1 Tank Battery
Lea County, New Mexico
Site: August 26, 2009

TETRA TECH



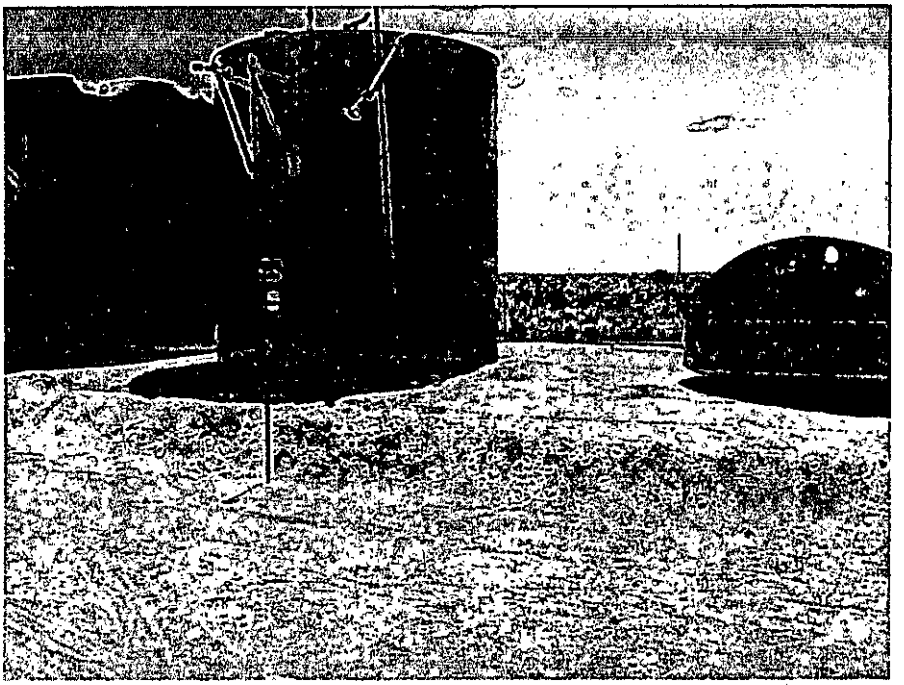
Area near AH-3



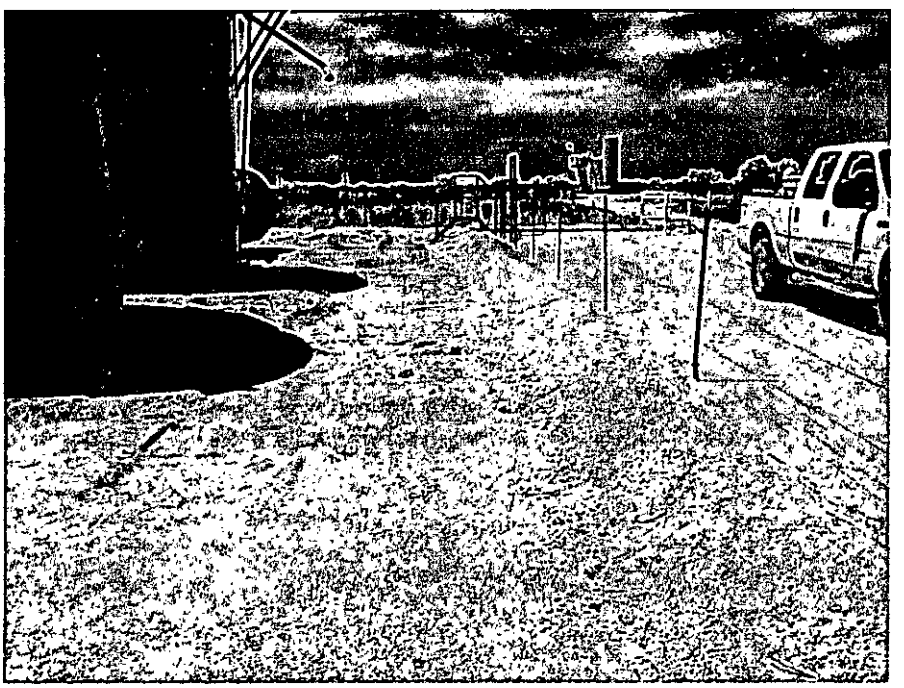
Area near AH-2

COG Operating LLC
West Pearl 36 State #1 Tank Battery
Lea County, New Mexico
Site: May 20, 2011

TETRA TECH



Area near AH-1



Front side of facility

Water Well Data
Average Depth to Groundwater (ft)
COG - West Pearl 36 State #1, Lea County, New Mexico

18 South 33 East

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

18 South 34 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 35 East

6 89	5 69	4 58	3 62	2 55 51	1
7 85	8	9 72	10 49	11 59 48	12
18 90	17 90 124	16 75	15	14 90	13 135
19 74 70	20 85 50	21	22 70	23	24
30	29 95	28	27 68	26 60	25
31	32 58	33 80	34	35 58	36

19 South 33 East

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

19 South 34 East

6 244	5	4	3	2 100	1
7	8	9 29	10	11 123	12 74 60
18	17	16 271	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25 28
31 148	32	33	34	35	36 SITE

19 South 35 East

6 61 58	5 63	4 70	3	2	1 63
7 51	8 18	9 20	10 53	11	12
18	17 26 30	16	15 26	14 27	13 27
19 58	20	21	22 27	23	24 20
30	29	28	27	26	25
31	32	33	34	35	36

20 South 33 East

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

20 South 34 East

6	5	4 125	3	2	1
7	8	9	10	11	12
18	17 128	16	15	14 150	13
19	20	21	22	23	24 270
30	29	28	27	26	25
31	32	33	34 82	35	36

20 South 35 East

6 58 64	5 64	4	3	2	1
7	8	9	10	11	12 49
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31 65	32	33 89	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

34 NMOCD - Groundwater Data

Summary Report

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

Report Date: June 21, 2012

Work Order: 12061352

Project Location: Lea Co., NM
Project Name: COG/West Pearl 36 State #1
Project Number: 114-6400273

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
300946	BH-3 0-1'	soil	2012-06-11	00:00	2012-06-13
300947	BH-3 2-3'	soil	2012-06-11	00:00	2012-06-13
300948	BH-3 4-5'	soil	2012-06-11	00:00	2012-06-13
300949	BH-3 6-7'	soil	2012-06-11	00:00	2012-06-13
300950	BH-3 9-10'	soil	2012-06-11	00:00	2012-06-13
300951	BH-3 14-15'	soil	2012-06-11	00:00	2012-06-13
300952	BH-3 19-20'	soil	2012-06-11	00:00	2012-06-13
300953	BH-3 29-30'	soil	2012-06-11	00:00	2012-06-13
300954	BH-3 39-40'	soil	2012-06-11	00:00	2012-06-13
300955	BH-3 49-50'	soil	2012-06-11	00:00	2012-06-13
300956	BH-3 59-60'	soil	2012-06-11	00:00	2012-06-13
300957	BH-4 4-5'	soil	2012-06-11	00:00	2012-06-13
300958	BH-4 9-10'	soil	2012-06-11	00:00	2012-06-13
300959	BH-4 14-15'	soil	2012-06-11	00:00	2012-06-13
300960	BH-4 19-20'	soil	2012-06-11	00:00	2012-06-13
300961	BH-4 29-30'	soil	2012-06-11	00:00	2012-06-13
300962	BH-4 39-40'	soil	2012-06-11	00:00	2012-06-13
300963	BH-4 49-50'	soil	2012-06-11	00:00	2012-06-13
300964	BH-4 59-60'	soil	2012-06-11	00:00	2012-06-13
300965	BH-5 4-5'	soil	2012-06-11	00:00	2012-06-13
300966	BH-5 9-10'	soil	2012-06-11	00:00	2012-06-13
300967	BH-5 14-15'	soil	2012-06-11	00:00	2012-06-13
300968	BH-5 19-20'	soil	2012-06-11	00:00	2012-06-13
300969	BH-5 29-30'	soil	2012-06-11	00:00	2012-06-13
300970	BH-5 39-40'	soil	2012-06-11	00:00	2012-06-13
300971	BH-5 49-50'	soil	2012-06-11	00:00	2012-06-13
300972	BH-5 59-60'	soil	2012-06-11	00:00	2012-06-13
300973	BH-6 4-5'	soil	2012-06-11	00:00	2012-06-13
300974	BH-6 9-10'	soil	2012-06-11	00:00	2012-06-13
300975	BH-6 14-15'	soil	2012-06-11	00:00	2012-06-13

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
300976	BH-6 19-20'	soil	2012-06-11	00:00	2012-06-13
300977	BH-6 29-30'	soil	2012-06-11	00:00	2012-06-13
300978	BH-6 39-40'	soil	2012-06-11	00:00	2012-06-13
300979	BH-6 49-50'	soil	2012-06-11	00:00	2012-06-13
300980	BH-6 59-60'	soil	2012-06-11	00:00	2012-06-13

Sample: 300946 - BH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**53.1**	mg/Kg	4

Sample: 300947 - BH-3 2-3'

Param	Flag	Result	Units	RL
Chloride		**280**	mg/Kg	4

Sample: 300948 - BH-3 4-5'

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 300949 - BH-3 6-7'

Param	Flag	Result	Units	RL
Chloride		**101**	mg/Kg	4

Sample: 300950 - BH-3 9-10'

Param	Flag	Result	Units	RL
Chloride		**164**	mg/Kg	4

Sample: 300951 - BH-3 14-15'

Param	Flag	Result	Units	RL
Chloride		**29.1**	mg/Kg	4

Sample: 300952 - BH-3 19-20'

Param	Flag	Result	Units	RL
Chloride		**300**	mg/Kg	4

Sample: 300953 - BH-3 29-30'

Param	Flag	Result	Units	RL
Chloride		**3380**	mg/Kg	4

Sample: 300954 - BH-3 39-40'

Param	Flag	Result	Units	RL
Chloride		**6800**	mg/Kg	4

Sample: 300955 - BH-3 49-50'

Param	Flag	Result	Units	RL
Chloride		**295**	mg/Kg	4

Sample: 300956 - BH-3 59-60'

Param	Flag	Result	Units	RL
Chloride		**72.6**	mg/Kg	4

Sample: 300957 - BH-4 4-5'

Param	Flag	Result	Units	RL
Chloride		**96.9**	mg/Kg	4

Sample: 300958 - BH-4 9-10'

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 300959 - BH-4 14-15'

Param	Flag	Result	Units	RL
Chloride		**165**	mg/Kg	4

Sample: 300960 - BH-4 19-20'

Param	Flag	Result	Units	RL
Chloride		**281**	mg/Kg	4

Sample: 300961 - BH-4 29-30'

Param	Flag	Result	Units	RL
Chloride		**5590**	mg/Kg	4

Sample: 300962 - BH-4 39-40'

Param	Flag	Result	Units	RL
Chloride		**5940**	mg/Kg	4

Sample: 300963 - BH-4 49-50'

Param	Flag	Result	Units	RL
Chloride		**602**	mg/Kg	4

Sample: 300964 - BH-4 59-60'

Param	Flag	Result	Units	RL
Chloride		**389**	mg/Kg	4

Sample: 300965 - BH-5 4-5'

Param	Flag	Result	Units	RL
Chloride		**350**	mg/Kg	4

Sample: 300966 - BH-5 9-10'

Param	Flag	Result	Units	RL
Chloride		**77.7**	mg/Kg	4

Sample: 300967 - BH-5 14-15'

Param	Flag	Result	Units	RL
Chloride		**355**	mg/Kg	4

Sample: 300968 - BH-5 19-20'

Param	Flag	Result	Units	RL
Chloride		**879**	mg/Kg	4

Sample: 300969 - BH-5 29-30'

Param	Flag	Result	Units	RL
Chloride		**9420**	mg/Kg	4

Sample: 300970 - BH-5 39-40'

Param	Flag	Result	Units	RL
Chloride		**5930**	mg/Kg	4

Sample: 300971 - BH-5 49-50'

Param	Flag	Result	Units	RL
Chloride		***636***	mg/Kg	4

Sample: 300972 - BH-5 59-60'

Param	Flag	Result	Units	RL
Chloride		**1950**	mg/Kg	4

Sample: 300973 - BH-6 4-5'

Param	Flag	Result	Units	RL
Chloride		**670**	mg/Kg	4

Sample: 300974 - BH-6 9-10'

Param	Flag	Result	Units	RL
Chloride		**896**	mg/Kg	4

Sample: 300975 - BH-6 14-15'

Param	Flag	Result	Units	RL
Chloride		**685**	mg/Kg	4

Sample: 300976 - BH-6 19-20'

Param	Flag	Result	Units	RL
Chloride		**960**	mg/Kg	4

Sample: 300977 - BH-6 29-30'

Param	Flag	Result	Units	RL
Chloride		**6890**	mg/Kg	4

Sample: 300978 - BH-6 39-40'

Param	Flag	Result	Units	RL
Chloride		**6140**	mg/Kg	4

Sample: 300979 - BH-6 49-50'

Param	Flag	Result	Units	RL
Chloride		**429**	mg/Kg	4

Sample: 300980 - BH-6 59-60'

Param	Flag	Result	Units	RL
Chloride		**265**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: June 21, 2012

Work Order: 12061352

Project Location: Lea Co., NM
Project Name: COG/West Pearl 36 State #1
Project Number: 114-6400273

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
300946	BH-3 0-1'	soil	2012-06-11	00:00	2012-06-13
300947	BH-3 2-3'	soil	2012-06-11	00:00	2012-06-13
300948	BH-3 4-5'	soil	2012-06-11	00:00	2012-06-13
300949	BH-3 6-7'	soil	2012-06-11	00:00	2012-06-13
300950	BH-3 9-10'	soil	2012-06-11	00:00	2012-06-13
300951	BH-3 14-15'	soil	2012-06-11	00:00	2012-06-13
300952	BH-3 19-20'	soil	2012-06-11	00:00	2012-06-13
300953	BH-3 29-30'	soil	2012-06-11	00:00	2012-06-13
300954	BH-3 39-40'	soil	2012-06-11	00:00	2012-06-13
300955	BH-3 49-50'	soil	2012-06-11	00:00	2012-06-13
300956	BH-3 59-60'	soil	2012-06-11	00:00	2012-06-13
300957	BH-4 4-5'	soil	2012-06-11	00:00	2012-06-13
300958	BH-4 9-10'	soil	2012-06-11	00:00	2012-06-13
300959	BH-4 14-15'	soil	2012-06-11	00:00	2012-06-13
300960	BH-4 19-20'	soil	2012-06-11	00:00	2012-06-13
300961	BH-4 29-30'	soil	2012-06-11	00:00	2012-06-13
300962	BH-4 39-40'	soil	2012-06-11	00:00	2012-06-13
300963	BH-4 49-50'	soil	2012-06-11	00:00	2012-06-13

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
300964	BH-4 59-60'	soil	2012-06-11	00:00	2012-06-13
300965	BH-5 4-5'	soil	2012-06-11	00:00	2012-06-13
300966	BH-5 9-10'	soil	2012-06-11	00:00	2012-06-13
300967	BH-5 14-15'	soil	2012-06-11	00:00	2012-06-13
300968	BH-5 19-20'	soil	2012-06-11	00:00	2012-06-13
300969	BH-5 29-30'	soil	2012-06-11	00:00	2012-06-13
300970	BH-5 39-40'	soil	2012-06-11	00:00	2012-06-13
300971	BH-5 49-50'	soil	2012-06-11	00:00	2012-06-13
300972	BH-5 59-60'	soil	2012-06-11	00:00	2012-06-13
300973	BH-6 4-5'	soil	2012-06-11	00:00	2012-06-13
300974	BH-6 9-10'	soil	2012-06-11	00:00	2012-06-13
300975	BH-6 14-15'	soil	2012-06-11	00:00	2012-06-13
300976	BH-6 19-20'	soil	2012-06-11	00:00	2012-06-13
300977	BH-6 29-30'	soil	2012-06-11	00:00	2012-06-13
300978	BH-6 39-40'	soil	2012-06-11	00:00	2012-06-13
300979	BH-6 49-50'	soil	2012-06-11	00:00	2012-06-13
300980	BH-6 59-60'	soil	2012-06-11	00:00	2012-06-13

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.

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

Report Contents

Case Narrative

Samples for project COG/West Pearl 36 State #1 were received by TraceAnalysis, Inc. on 2012-06-13 and assigned to work order 12061352. Samples for work order 12061352 were received intact at a temperature of 3.4 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	78279	2012-06-19 at 09:29	92273	2012-06-19 at 14:32
Chloride (Titration)	SM 4500-Cl B	78279	2012-06-19 at 09:29	92365	2012-06-20 at 10:56
Chloride (Titration)	SM 4500-Cl B	78279	2012-06-19 at 09:29	92366	2012-06-20 at 10:57
Chloride (Titration)	SM 4500-Cl B	78279	2012-06-19 at 09:29	92367	2012-06-20 at 10:58

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 12061352 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: 300946 - BH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92273	Date Analyzed:	2012-06-19	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**53.1**	mg/Kg	5	4.00

Sample: 300947 - BH-3 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92273	Date Analyzed:	2012-06-19	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**280**	mg/Kg	5	4.00

Sample: 300948 - BH-3 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92273	Date Analyzed:	2012-06-19	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 300949 - BH-3 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92273	Date Analyzed:	2012-06-19	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**101**	mg/Kg	5	4.00

Sample: 300950 - BH-3 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92273	Date Analyzed:	2012-06-19	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**164**	mg/Kg	5	4.00

Sample: 300951 - BH-3 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**29.1**	mg/Kg	5	4.00

Sample: 300952 - BH-3 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**300**	mg/Kg	5	4.00

Sample: 300953 - BH-3 29-30'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3380**	mg/Kg	10	4.00

Sample: 300954 - BH-3 39-40'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6800**	mg/Kg	10	4.00

Sample: 300955 - BH-3 49-50'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**295**	mg/Kg	5	4.00

Sample: 300956 - BH-3 59-60'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**72.6**	mg/Kg	5	4.00

Sample: 300957 - BH-4 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**96.9**	mg/Kg	5	4.00

Sample: 300958 - BH-4 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 300959 - BH-4 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**165**	mg/Kg	5	4.00

Sample: 300960 - BH-4 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**281**	mg/Kg	5	4.00

Sample: 300961 - BH-4 29-30'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**5590**	mg/Kg	10	4.00

Sample: 300962 - BH-4 39-40'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**5940**	mg/Kg	10	4.00

Sample: 300963 - BH-4 49-50'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**602**	mg/Kg	5	4.00

Sample: 300964 - BH-4 59-60'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**389**	mg/Kg	5	4.00

Sample: 300965 - BH-5 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**350**	mg/Kg	5	4.00

Sample: 300966 - BH-5 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**77.7**	mg/Kg	5	4.00

Sample: 300967 - BH-5 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**355**	mg/Kg	5	4.00

Sample: 300968 - BH-5 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**879**	mg/Kg	5	4.00

Sample: 300969 - BH-5 29-30'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**9420**	mg/Kg	10	4.00

Sample: 300970 - BH-5 39-40'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**5930**	mg/Kg	10	4.00

Sample: 300971 - BH-5 49-50'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**636**	mg/Kg	5	4.00

Sample: 300972 - BH-5 59-60'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1950**	mg/Kg	10	4.00

Sample: 300973 - BH-6 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**670**	mg/Kg	5	4.00

Sample: 300974 - BH-6 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**896**	mg/Kg	5	4.00

Sample: 300975 - BH-6 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**685**	mg/Kg	5	4.00

Sample: 300976 - BH-6 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**960**	mg/Kg	5	4.00

Sample: 300977 - BH-6 29-30'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6890**	mg/Kg	10	4.00

Sample: 300978 - BH-6 39-40'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6140**	mg/Kg	10	4.00

Sample: 300979 - BH-6 49-50'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**429**	mg/Kg	5	4.00

Sample: 300980 - BH-6 59-60'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	Sample Preparation:	2012-06-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**265**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 92273

QC Batch:	92273	Date Analyzed:	2012-06-19	Analyzed By:	AR
Prep Batch:	78279	QC Preparation:	2012-06-19	Prepared By:	AR

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

Method Blank (1) QC Batch: 92365

QC Batch:	92365	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	QC Preparation:	2012-06-19	Prepared By:	AR

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

Method Blank (1) QC Batch: 92366

QC Batch:	92366	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	QC Preparation:	2012-06-19	Prepared By:	AR

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

Method Blank (1) QC Batch: 92367

QC Batch:	92367	Date Analyzed:	2012-06-20	Analyzed By:	AR
Prep Batch:	78279	QC Preparation:	2012-06-19	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: 92273 | Date Analyzed: 2012-06-19 | Analyzed By: AR
Prep Batch: 78279 | QC Preparation: 2012-06-19 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2540	mg/Kg	1	2500	<3.85	102	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			2660	mg/Kg	1	2500	<3.85	106	85 - 115	5	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: 92365 | Date Analyzed: 2012-06-20 | Analyzed By: AR
Prep Batch: 78279 | QC Preparation: 2012-06-19 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2540	mg/Kg	1	2500	<3.85	102	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			2660	mg/Kg	1	2500	<3.85	106	85 - 115	5	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: 92366 | Date Analyzed: 2012-06-20 | Analyzed By: AR
Prep Batch: 78279 | QC Preparation: 2012-06-19 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2540	mg/Kg	1	2500	<3.85	102	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			2640	mg/Kg	1	2500	<3.85	106	85 - 115	4	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: 92367 | Date Analyzed: 2012-06-20 | Analyzed By: AR
Prep Batch: 78279 | QC Preparation: 2012-06-19 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2500	mg/Kg	1	2500	<3.85	100	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			2640	mg/Kg	1	2500	<3.85	106	85 - 115	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: 300950

QC Batch: 92273 | Date Analyzed: 2012-06-19 | Analyzed By: AR
Prep Batch: 78279 | QC Preparation: 2012-06-19 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2760	mg/Kg	5	2500	164	104	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			2880	mg/Kg	5	2500	164	109	79.4 - 120.6	4	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: 300960

QC Batch: 92365 | Date Analyzed: 2012-06-20 | Analyzed By: AR
Prep Batch: 78279 | QC Preparation: 2012-06-19 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2860	mg/Kg	5	2500	281	103	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			3010	mg/Kg	5	2500	281	109	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: 300970

QC Batch: 92366 | Date Analyzed: 2012-06-20 | Analyzed By: AR
Prep Batch: 78279 | QC Preparation: 2012-06-19 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			8410	mg/Kg	10	2500	5930	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			8190	mg/Kg	10	2500	5930	90	79.4 - 120.6	3	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: 300980

QC Batch: 92367 | Date Analyzed: 2012-06-20 | Analyzed By: AR
Prep Batch: 78279 | QC Preparation: 2012-06-19 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2820	mg/Kg	5	2500	265	102	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2940	mg/Kg	5	2500	265	107	79.4 - 120.6	4	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 92273 | Date Analyzed: 2012-06-19 | 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	2012-06-19

Standard (CCV-2)

QC Batch: 92273 | Date Analyzed: 2012-06-19 | 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	98.9	99	85 - 115	2012-06-19

Standard (CCV-1)

QC Batch: 92365 | Date Analyzed: 2012-06-20 | 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	100	100	85 - 115	2012-06-20

Standard (CCV-2)

QC Batch: 92365 | Date Analyzed: 2012-06-20 | 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	100	100	85 - 115	2012-06-20

Standard (CCV-1)

QC Batch: 92366 | Date Analyzed: 2012-06-20 | 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	100	100	85 - 115	2012-06-20

Standard (CCV-2)

QC Batch: 92366 | Date Analyzed: 2012-06-20 | 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	99.8	100	85 - 115	2012-06-20

Standard (CCV-1)

QC Batch: 92367 | Date Analyzed: 2012-06-20 | 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	98.8	99	85 - 115	2012-06-20

Standard (CCV-2)

QC Batch: 92367 | Date Analyzed: 2012-06-20 | 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	2012-06-20

Appendix

Report Definitions

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

Laboratory Certifications

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

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.

12061352

Analysis Request of Chain of Custody Record

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

PAGE: 1 OF: 4

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640 0273

PROJECT NAME: West Pearl 36 State

Lea Co., NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
300946	6/11		S		X	BH-3 0-1'	1																	X				
947						2-3'	1																	X				
948						4-5'	1																	X				
949						6-7'	1																	X				
950						9-10'	1																	X				
951						14-15'	1																	X				
952						19-20'	1																	X				
953						29-30'	1																	X				
954						39-40'	1																	X				
955						49-50'	1																	X				

RELINQUISHED BY: (Signature) Date: 6/11/12 Time: 5:18 PM

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Kim Date: 6/11/12 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:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: TRACE

ADDRESS:

CITY: MIDLAND STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: 6.13.12 TIME: 13:18

SAMPLE CONDITION WHEN RECEIVED: 3.4°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.

1206135 2

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.: 114640 0273

PROJECT NAME: West Pearl 36 State
Lea Co., NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
956	6/11		S		X	BH-3 59-60'	1																	X				
957						BH-4 4-5'	1																	X				
958						9-10'	1																	X				
959						14-15'	1																	X				
960						19-20'	1																	X				
961						29-30'	1																	X				
962						39-40'	1																	X				
963						49-50'	1																	X				
964						59-60'	1																	X				
965						BH-5 4-5'	1																	X				

RELINQUISHED BY: (Signature) — Date: 6/11/12 Time: 1:48 PM
RECEIVED BY: (Signature) — Date: — Time:
SAMPLED BY: (Print & Initial) Kim — Date: 6/11/12 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: 6-13-12 TIME: 13:18
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.4°C on ice
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.

12061352

Analysis Request of Chain of Custody Record

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

PAGE: 3 OF: 4

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400273

PROJECT NAME: West Pearl 36 State
Lea Co., NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
966	6/11		S		X	BH-5 9-10'	1																	X				
967						14-15'	1																	X				
968						19-20'	1																	X				
969						29-30'	1																	X				
970						39-40'	1																	X				
971						49-50'	1																	X				
972						59-60'	1																	X				
973						BH-6 4-5'	1																	X				
974						9-10'	1																	X				
975						14-15'	1																	X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 6/11/12 Time: 1:18 Pm	RECEIVED BY: (Signature) Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature) Date: Time:
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: 6-13-12 TIME: 13:18

SAMPLED BY: (Print & Initial) Kim Date: 6/11/12 Time:

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.4°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.

1206135 2

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.: 114-6400273

PROJECT NAME: West Pearl 36 State

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
976	6/11		S		X	BH-6 19-20'	1																	X				
977						29-30'	1																	X				
978						39-40'	1																	X				
979						49-50'	1																	X				
980						59-60'	1																	X				

RELINQUISHED BY: (Signature) — Date: 6/11/12 Time: 1:18 PM — RECEIVED BY: (Signature) — Date: — Time:

SAMPLED BY: (Print & Initial) Kim — Date: 6/11/12 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) Amelia

ADDRESS:

CITY: MIDLAND STATE: TX ZIP:

CONTACT: PHONE: DATE: 8-13-12 TIME: 13:18

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.4°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: June 1, 2011

Work Order: 11052326

Project Location: Lea Co., NM
Project Name: COG/West Pearl 36 State #1
Project Number: 114-6400273

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
267044	SB-1 15'	soil	2011-05-20	00:00	2011-05-23
267045	SB-1 20'	soil	2011-05-20	00:00	2011-05-23
267046	SB-1 25'	soil	2011-05-20	00:00	2011-05-23
267047	SB-1 30'	soil	2011-05-20	00:00	2011-05-23
267048	SB-1 40'	soil	2011-05-20	00:00	2011-05-23
267049	SB-1 50'	soil	2011-05-20	00:00	2011-05-23
267052	SB-2 30'	soil	2011-05-20	00:00	2011-05-23
267053	SB-2 40'	soil	2011-05-20	00:00	2011-05-23
267054	SB-2 50'	soil	2011-05-20	00:00	2011-05-23
267055	SB-2 60'	soil	2011-05-20	00:00	2011-05-23
267056	SB-2 70'	soil	2011-05-20	00:00	2011-05-23

Sample: 267044 - SB-1 15'

Param	Flag	Result	Units	RL
Chloride		**666**	mg/Kg	4

Sample: 267045 - SB-1 20'

Param	Flag	Result	Units	RL
Chloride		**2710**	mg/Kg	4

Sample: 267046 - SB-1 25'

Param	Flag	Result	Units	RL
Chloride		**6750**	mg/Kg	4

Sample: 267047 - SB-1 30'

Param	Flag	Result	Units	RL
Chloride		**7840**	mg/Kg	4

Sample: 267048 - SB-1 40'

Param	Flag	Result	Units	RL
Chloride		**7020**	mg/Kg	4

Sample: 267049 - SB-1 50'

Param	Flag	Result	Units	RL
Chloride		**220**	mg/Kg	4

Sample: 267052 - SB-2 30'

Param	Flag	Result	Units	RL
Chloride		**4760**	mg/Kg	4

Sample: 267053 - SB-2 40'

Param	Flag	Result	Units	RL
Chloride		**7770**	mg/Kg	4

Sample: 267054 - SB-2 50'

Param	Flag	Result	Units	RL
Chloride		**1080**	mg/Kg	4

Sample: 267055 - SB-2 60'

Param	Flag	Result	Units	RL
Chloride		**609**	mg/Kg	4

Sample: 267056 - SB-2 70'

Param	Flag	Result	Units	RL
Chloride		**611**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 | Lubbock, Texas 79424 | 800•378•1296 | 806•794•1296 | FAX 806•794•1298
200 East Sunset Road, Suite E | El Paso, Texas 79922 | 888•588•3443 | 915•585•3443 | FAX 915•585•4944
5002 Basin Street, Suite A1 | Midland, Texas 79703 | | 432•689•6301 | FAX 432•689•6313
6015 Harris Parkway, Suite 110 | Ft. Worth, Texas 76132 | | 817•201•5260 |
E-Mail: lab@traceanalysis.com

Certifications

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: June 1, 2011

Work Order: 11052326

Project Location: Lea Co., NM
Project Name: COG/West Pearl 36 State #1
Project Number: 114-6400273

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
267044	SB-1 15'	soil	2011-05-20	00:00	2011-05-23
267045	SB-1 20'	soil	2011-05-20	00:00	2011-05-23
267046	SB-1 25'	soil	2011-05-20	00:00	2011-05-23
267047	SB-1 30'	soil	2011-05-20	00:00	2011-05-23
267048	SB-1 40'	soil	2011-05-20	00:00	2011-05-23
267049	SB-1 50'	soil	2011-05-20	00:00	2011-05-23
267052	SB-2 30'	soil	2011-05-20	00:00	2011-05-23
267053	SB-2 40'	soil	2011-05-20	00:00	2011-05-23
267054	SB-2 50'	soil	2011-05-20	00:00	2011-05-23
267055	SB-2 60'	soil	2011-05-20	00:00	2011-05-23
267056	SB-2 70'	soil	2011-05-20	00:00	2011-05-23

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/West Pearl 36 State #1 were received by TraceAnalysis, Inc. on 2011-05-23 and assigned to work order 11052326. Samples for work order 11052326 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	69419	2011-05-31 at 09:25	81786	2011-06-01 at 12:17
Chloride (Titration)	SM 4500-Cl B	69419	2011-05-31 at 09:25	81787	2011-06-01 at 12:19

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 11052326 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: 267044 - SB-1 15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**666**	mg/Kg	100	4.00

Sample: 267045 - SB-1 20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2710**	mg/Kg	100	4.00

Sample: 267046 - SB-1 25'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**6750**	mg/Kg	100	4.00

Sample: 267047 - SB-1 30'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

continued ...

sample 267047 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**7840**	mg/Kg	100	4.00

Sample: 267048 - SB-1 40'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**7020**	mg/Kg	100	4.00

Sample: 267049 - SB-1 50'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**220**	mg/Kg	50	4.00

Sample: 267052 - SB-2 30'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4760**	mg/Kg	100	4.00

Sample: 267053 - SB-2 40'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**7770**	mg/Kg	100	4.00

Sample: 267054 - SB-2 50'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1080**	mg/Kg	100	4.00

Sample: 267055 - SB-2 60'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**609**	mg/Kg	100	4.00

Sample: 267056 - SB-2 70'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	81787	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	Sample Preparation:	2011-05-31	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**611**	mg/Kg	100	4.00

Method Blank (1) QC Batch: 81786

QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	QC Preparation:	2011-05-31	Prepared By:	AR

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

Method Blank (1) QC Batch: 81787

QC Batch:	81787	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	QC Preparation:	2011-05-31	Prepared By:	AR

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

Laboratory Control Spike (LCS-1)

QC Batch:	81786	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	QC Preparation:	2011-05-31	Prepared By:	AR

Param	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	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	107	mg/Kg	1	100	<3.85	107	85 - 115	12	20

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

Laboratory Control Spike (LCS-1)

QC Batch:	81787	Date Analyzed:	2011-06-01	Analyzed By:	AR
Prep Batch:	69419	QC Preparation:	2011-05-31	Prepared By:	AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	96.3	mg/Kg	1	100	<3.85	96	85 - 115

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

Param	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	8	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: 267055

QC Batch: 81786 | Date Analyzed: 2011-06-01 | Analyzed By: AR
Prep Batch: 69419 | QC Preparation: 2011-05-31 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11000	mg/Kg	100	10000	609	104	80 - 120

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	11400	mg/Kg	100	10000	609	108	80 - 120	4	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: 267065

QC Batch: 81787 | Date Analyzed: 2011-06-01 | Analyzed By: AR
Prep Batch: 69419 | QC Preparation: 2011-05-31 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10300	mg/Kg	100	10000	<385	103	80 - 120

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	10600	mg/Kg	100	10000	<385	106	80 - 120	3	20

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

Standard (ICV-1)

QC Batch: 81786 | Date Analyzed: 2011-06-01 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	96.0	96	85 - 115	2011-06-01

Standard (CCV-1)

QC Batch: 81786 Date Analyzed: 2011-06-01 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	104	104	85 - 115	2011-06-01

Standard (ICV-1)

QC Batch: 81787 Date Analyzed: 2011-06-01 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.2	97	85 - 115	2011-06-01

Standard (CCV-1)

QC Batch: 81787 Date Analyzed: 2011-06-01 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	103	103	85 - 115	2011-06-01

Xwo #: 1105326

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

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

ANALYSIS REQUEST (Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400273

PROJECT NAME: COG / West Pearl 36 State #1

Lea 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	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr 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. 608/808	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
267044	5/20		S		X	SB-1 15'	1				X													X				
045						20'	1				X													X				
046						25'	1				X													X				
047						30'	1				X													X				
048						40'	1				X													X				
049						50'	1				X													X				
050						60'	1				X											Hold						
051						70'	1				X											Hold						
052						SB-2 30'	1				X													X				
053						40'	1				X													X				

RELINQUISHED BY: (Signature)	Date: 5/23/11 Time: 1150	RECEIVED BY: (Signature)	Date: 5-25-11 Time: 1150
SAMPLED BY: (Print & Initial) Kim	Date: 5/23/11 Time:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX HAND DELIVERED BUS UPS	AIRBILL #: OTHER:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
TETRA TECH CONTACT PERSON: Ike 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: 4°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.

AWD #: 1105326

Analysis Request of Chain of Custody Record

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

PAGE: 2 OF: 2

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400273

PROJECT NAME: COG / West Pearl 36 State #1
Lea 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	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr 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 Antons/Cations, pH, TDS
267054	5/20		S		X	SB-2 50'	1				X													X				
055	"		"		"	60'	1				X													X				
056	"		"		"	70'	1				X													X				

RELINQUISHED BY: (Signature) — Date: 5/23/11 Time: 11:50
RECEIVED BY: (Signature) — Date: 5/23/11 Time: 1150

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

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:

SAMPLED BY: (Print & Initial) Kim — Date: 5/23/11 Time:

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4°C

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: March 15, 2010

Work Order: 10030921

Project Location: Lea Co., NM
Project Name: COG/West Pearl 36 State #1
Project Number: 114-6400273

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
224948	SB-1 2-3'	soil	2010-03-05	00:00	2010-03-09
224949	SB-1 4-5'	soil	2010-03-05	00:00	2010-03-09
224950	SB-1 6-7'	soil	2010-03-05	00:00	2010-03-09
224951	SB-1 10-11'	soil	2010-03-05	00:00	2010-03-09
224952	SB-1 15-16'	soil	2010-03-05	00:00	2010-03-09
224953	SB-1 20-21'	soil	2010-03-05	00:00	2010-03-09
224954	SB-2 2-3'	soil	2010-03-05	00:00	2010-03-09
224955	SB-2 4-5'	soil	2010-03-05	00:00	2010-03-09
224956	SB-2 6-7'	soil	2010-03-05	00:00	2010-03-09
224957	SB-2 10-11'	soil	2010-03-05	00:00	2010-03-09
224958	SB-2 15-16'	soil	2010-03-05	00:00	2010-03-09
224959	SB-2 20-21'	soil	2010-03-05	00:00	2010-03-09
224960	SB-2 25-26'	soil	2010-03-05	00:00	2010-03-09
224961	SB-2 30-31'	soil	2010-03-05	00:00	2010-03-09
224962	SB-2 40-41'	soil	2010-03-05	00:00	2010-03-09

Sample: 224948 - SB-1 2-3'

Param	Flag	Result	Units	RL
Chloride		**1050**	mg/Kg	4.00

Sample: 224949 - SB-1 4-5'

Param	Flag	Result	Units	RL
Chloride		**757**	mg/Kg	4.00

Sample: 224950 - SB-1 6-7'

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

Sample: 224951 - SB-1 10-11'

Param	Flag	Result	Units	RL
Chloride		**335**	mg/Kg	4.00

Sample: 224952 - SB-1 15-16'

Param	Flag	Result	Units	RL
Chloride		**263**	mg/Kg	4.00

Sample: 224953 - SB-1 20-21'

Param	Flag	Result	Units	RL
Chloride		**2490**	mg/Kg	4.00

Sample: 224954 - SB-2 2-3'

Param	Flag	Result	Units	RL
Chloride		**946**	mg/Kg	4.00

Sample: 224955 - SB-2 4-5'

Param	Flag	Result	Units	RL
Chloride		**573**	mg/Kg	4.00

Sample: 224956 - SB-2 6-7'

Param	Flag	Result	Units	RL
Chloride		**319**	mg/Kg	4.00

Sample: 224957 - SB-2 10-11'

Param	Flag	Result	Units	RL
Chloride		**398**	mg/Kg	4.00

Sample: 224958 - SB-2 15-16'

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

Sample: 224959 - SB-2 20-21'

Param	Flag	Result	Units	RL
Chloride		**558**	mg/Kg	4.00

Sample: 224960 - SB-2 25-26'

Param	Flag	Result	Units	RL
Chloride		**349**	mg/Kg	4.00

Sample: 224961 - SB-2 30-31'

Param	Flag	Result	Units	RL
Chloride		**3910**	mg/Kg	4.00

Sample: 224962 - SB-2 40-41'

Param	Flag	Result	Units	RL
Chloride		**7060**	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: March 15, 2010

Work Order: 10030921

Project Location: Lea Co., NM
Project Name: COG/West Pearl 36 State #1
Project Number: 114-6400273

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
224948	SB-1 2-3'	soil	2010-03-05	00:00	2010-03-09
224949	SB-1 4-5'	soil	2010-03-05	00:00	2010-03-09
224950	SB-1 6-7'	soil	2010-03-05	00:00	2010-03-09
224951	SB-1 10-11'	soil	2010-03-05	00:00	2010-03-09
224952	SB-1 15-16'	soil	2010-03-05	00:00	2010-03-09
224953	SB-1 20-21'	soil	2010-03-05	00:00	2010-03-09
224954	SB-2 2-3'	soil	2010-03-05	00:00	2010-03-09
224955	SB-2 4-5'	soil	2010-03-05	00:00	2010-03-09
224956	SB-2 6-7'	soil	2010-03-05	00:00	2010-03-09
224957	SB-2 10-11'	soil	2010-03-05	00:00	2010-03-09

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
224958	SB-2 15-16'	soil	2010-03-05	00:00	2010-03-09
224959	SB-2 20-21'	soil	2010-03-05	00:00	2010-03-09
224960	SB-2 25-26'	soil	2010-03-05	00:00	2010-03-09
224961	SB-2 30-31'	soil	2010-03-05	00:00	2010-03-09
224962	SB-2 40-41'	soil	2010-03-05	00:00	2010-03-09

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/West Pearl 36 State #1 were received by TraceAnalysis, Inc. on 2010-03-09 and assigned to work order 10030921. Samples for work order 10030921 were received intact at a temperature of 7.6 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	58319	2010-03-11 at 09:51	68196	2010-03-12 at 15:26
Chloride (Titration)	SM 4500-Cl B	58320	2010-03-11 at 09:51	68197	2010-03-12 at 15:27

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 10030921 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: 224948 - SB-1 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68196	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58319	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1050**	mg/Kg	50	4.00

Sample: 224949 - SB-1 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68196	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58319	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**757**	mg/Kg	50	4.00

Sample: 224950 - SB-1 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68196	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58319	Sample Preparation:	2010-03-11	Prepared By:	AR

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

Sample: 224951 - SB-1 10-11'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68196	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58319	Sample Preparation:	2010-03-11	Prepared By:	AR

continued ...

sample 224951 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**335**	mg/Kg	50	4.00

Sample: 224952 - SB-1 15-16'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68196	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58319	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**263**	mg/Kg	50	4.00

Sample: 224953 - SB-1 20-21'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68196	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58319	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2490**	mg/Kg	100	4.00

Sample: 224954 - SB-2 2-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**946**	mg/Kg	50	4.00

Sample: 224955 - SB-2 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**573**	mg/Kg	50	4.00

Sample: 224956 - SB-2 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**319**	mg/Kg	50	4.00

Sample: 224957 - SB-2 10-11'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**398**	mg/Kg	50	4.00

Sample: 224958 - SB-2 15-16'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	Sample Preparation:	2010-03-11	Prepared By:	AR

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

Sample: 224959 - SB-2 20-21'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**558**	mg/Kg	50	4.00

Sample: 224960 - SB-2 25-26'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**349**	mg/Kg	50	4.00

Sample: 224961 - SB-2 30-31'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**3910**	mg/Kg	100	4.00

Sample: 224962 - SB-2 40-41'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	Sample Preparation:	2010-03-11	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**7060**	mg/Kg	100	4.00

Method Blank (1) QC Batch: 68196

QC Batch:	68196	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58319	QC Preparation:	2010-03-11	Prepared By:	AR

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

Method Blank (1) QC Batch: 68197

QC Batch:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	QC Preparation:	2010-03-11	Prepared By:	AR

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

Laboratory Control Spike (LCS-1)

QC Batch:	68196	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58319	QC Preparation:	2010-03-11	Prepared By:	AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.4	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	101	mg/Kg	1	100	<2.18	101	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:	68197	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58320	QC Preparation:	2010-03-11	Prepared By:	AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.3	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	101	mg/Kg	1	100	<2.18	101	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: 224953

QC Batch: 68196 | Date Analyzed: 2010-03-12 | Analyzed By: AR
Prep Batch: 58319 | QC Preparation: 2010-03-11 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	12700	mg/Kg	100	10000	2490	102	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	12800	mg/Kg	100	10000	2490	103	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: 224980

QC Batch: 68197 | Date Analyzed: 2010-03-12 | Analyzed By: AR
Prep Batch: 58320 | QC Preparation: 2010-03-11 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14200	mg/Kg	100	10000	4223	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	14400	mg/Kg	100	10000	4223	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: 68196 | Date Analyzed: 2010-03-12 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.1	98	85 - 115	2010-03-12

Standard (CCV-1)

QC Batch: 68196 Date Analyzed: 2010-03-12 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	2010-03-12

Standard (ICV-1)

QC Batch: 68197 Date Analyzed: 2010-03-12 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.5	98	85 - 115	2010-03-12

Standard (CCV-1)

QC Batch: 68197 Date Analyzed: 2010-03-12 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	2010-03-12

Order #: 1003092 1

Analysis Request of Chain of Custody Record

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

PAGE: 1 OF: 2

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400273

PROJECT NAME: COG / West Pearl 36 State #1 Lea 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	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	Chlorides	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
224948	3/5		S		X	SB-1 2-3'	1																	X				
949	3/5		S		X	SB-1 4-5'	1																	X				
950	3/5		S		X	SB-1 6-7'	1																	X				
951	3/5		S		X	SB-1 10-11'	1																	X				
952	3/5		S		X	SB-1 15-16'	1																	X				
953	3/5		S		X	SB-1 20-21'	1																	X				
954	3/5		S		X	SB-2 2-3	1																	X				
955	3/5		S		X	SB-2 4-5	1																	X				
956	3/5		S		X	SB-2 6-7	1																	X				
957	3/5		S		X	SB-2, 10-11	1																	X				

RELINQUISHED BY: (Signature) Date: 3/5/10 Time: 1610
RECEIVED BY: (Signature) Date: 3/9/10 Time: 10:10
SAMPLED BY: (Print & Initial) Kim Date: 3/9/10 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:
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: 7.6°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 #: 100 30921

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.: 114-6400273

PROJECT NAME: COG / West Pearl 36 State #1
Lea 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	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
224958	3/5		S		X	SB-2 15-16	1																	X				
959	3/5		S		X	SB-2 20-21	1																	X				
960	3/5		S		X	SB-2 25-26	1																					
961	3/5		S		X	SB-2 30-31	1																					
962	3/5		S		X	SB-2 40-41	1																					

RELINQUISHED BY: (Signature) Date: 3/5/10 Time: 1610
RECEIVED BY: (Signature) Date: 3/9/10 Time: 16:10
SAMPLED BY: (Print & Initial) Kim Date: 3/9/10 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: 7.6°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: September 8, 2009

Work Order: 9082836

Project Location: Lea Co., NM
Project Name: COG/West Pearl 36 State #1
Project Number: 114-6400273

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
208529	AH-1 (0-1')	soil	2009-08-26	00:00	2009-08-28
208530	AH-1 (1-1.5')	soil	2009-08-26	00:00	2009-08-28
208531	AH-1 (2-2.5')	soil	2009-08-26	00:00	2009-08-28
208532	AH-1 (3-3.5')	soil	2009-08-26	00:00	2009-08-28
208533	AH-2 (0-1')	soil	2009-08-26	00:00	2009-08-28
208534	AH-2 (1-1.5')	soil	2009-08-26	00:00	2009-08-28
208535	AH-2 (2-2.5')	soil	2009-08-26	00:00	2009-08-28
208536	AH-2 (3-3.5')	soil	2009-08-26	00:00	2009-08-28
208537	AH-3 (0-1')	soil	2009-08-26	00:00	2009-08-28
208538	AH-3 (1-1.5')	soil	2009-08-26	00:00	2009-08-28
208539	AH-3 (2-2.5')	soil	2009-08-26	00:00	2009-08-28
208540	AH-3 (3-3.5')	soil	2009-08-26	00:00	2009-08-28
208541	AH-3 (4-4.5')	soil	2009-08-26	00:00	2009-08-28
208542	AH-3 (5-5.5')	soil	2009-08-26	00:00	2009-08-28
208543	AH-4 (0-1')	soil	2009-08-26	00:00	2009-08-28
208544	AH-4 (1-1.5')	soil	2009-08-26	00:00	2009-08-28
208545	AH-4 (2-2.5')	soil	2009-08-26	00:00	2009-08-28
208546	AH-4 (3-3.5')	soil	2009-08-26	00:00	2009-08-28
208547	AH-4 (4-4.5')	soil	2009-08-26	00:00	2009-08-28

	BTEX				TPH DRO	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
208529 - AH-1 (0-1')	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
208533 - AH-2 (0-1')	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
208537 - AH-3 (0-1')					<50.0	<1.00
208543 - AH-4 (0-1')					<50.0	<1.00

Sample: 208529 - AH-1 (0-1')

Param	Flag	Result	Units	RL
Chloride		**1340**	mg/Kg	4.00

Sample: 208530 - AH-1 (1-1.5')

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

Sample: 208531 - AH-1 (2-2.5')

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

Sample: 208532 - AH-1 (3-3.5')

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

Sample: 208533 - AH-2 (0-1')

Param	Flag	Result	Units	RL
Chloride		**2070**	mg/Kg	4.00

Sample: 208534 - AH-2 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**1720**	mg/Kg	4.00

Sample: 208535 - AH-2 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		**762**	mg/Kg	4.00

Sample: 208536 - AH-2 (3-3.5')

Param	Flag	Result	Units	RL
Chloride		**459**	mg/Kg	4.00

Sample: 208537 - AH-3 (0-1')

Param	Flag	Result	Units	RL
Chloride		**611**	mg/Kg	4.00

Sample: 208538 - AH-3 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**631**	mg/Kg	4.00

Sample: 208539 - AH-3 (2-2.5')

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

Sample: 208540 - AH-3 (3-3.5')

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

Sample: 208541 - AH-3 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		**994**	mg/Kg	4.00

Sample: 208542 - AH-3 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		**1080**	mg/Kg	4.00

Sample: 208543 - AH-4 (0-1')

Param	Flag	Result	Units	RL
Chloride		**1960**	mg/Kg	4.00

Sample: 208544 - AH-4 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**528**	mg/Kg	4.00

Sample: 208545 - AH-4 (2-2.5')

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

Sample: 208546 - AH-4 (3-3.5')

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

Sample: 208547 - AH-4 (4-4.5')

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: September 8, 2009

Work Order: 9082836

Project Location: Lea Co., NM
Project Name: COG/West Pearl 36 State #1
Project Number: 114-6400273

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
208529	AH-1 (0-1')	soil	2009-08-26	00:00	2009-08-28
208530	AH-1 (1-1.5')	soil	2009-08-26	00:00	2009-08-28
208531	AH-1 (2-2.5')	soil	2009-08-26	00:00	2009-08-28
208532	AH-1 (3-3.5')	soil	2009-08-26	00:00	2009-08-28
208533	AH-2 (0-1')	soil	2009-08-26	00:00	2009-08-28
208534	AH-2 (1-1.5')	soil	2009-08-26	00:00	2009-08-28
208535	AH-2 (2-2.5')	soil	2009-08-26	00:00	2009-08-28
208536	AH-2 (3-3.5')	soil	2009-08-26	00:00	2009-08-28
208537	AH-3 (0-1')	soil	2009-08-26	00:00	2009-08-28
208538	AH-3 (1-1.5')	soil	2009-08-26	00:00	2009-08-28

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
208539	AH-3 (2-2.5')	soil	2009-08-26	00:00	2009-08-28
208540	AH-3 (3-3.5')	soil	2009-08-26	00:00	2009-08-28
208541	AH-3 (4-4.5')	soil	2009-08-26	00:00	2009-08-28
208542	AH-3 (5-5.5')	soil	2009-08-26	00:00	2009-08-28
208543	AH-4 (0-1')	soil	2009-08-26	00:00	2009-08-28
208544	AH-4 (1-1.5')	soil	2009-08-26	00:00	2009-08-28
208545	AH-4 (2-2.5')	soil	2009-08-26	00:00	2009-08-28
208546	AH-4 (3-3.5')	soil	2009-08-26	00:00	2009-08-28
208547	AH-4 (4-4.5')	soil	2009-08-26	00:00	2009-08-28

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/West Pearl 36 State #1 were received by TraceAnalysis, Inc. on 2009-08-28 and assigned to work order 9082836. Samples for work order 9082836 were received intact at a temperature of 10.9 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	53903	2009-08-31 at 14:00	63149	2009-08-31 at 05:42
Chloride (Titration)	SM 4500-Cl B	53889	2009-09-01 at 12:32	63213	2009-09-03 at 09:32
Chloride (Titration)	SM 4500-Cl B	53890	2009-09-01 at 12:33	63264	2009-09-04 at 10:58
Chloride (Titration)	SM 4500-Cl B	53891	2009-09-01 at 12:34	63265	2009-09-04 at 10:59
TPH DRO	Mod. 8015B	53845	2009-08-31 at 11:57	63088	2009-08-31 at 11:57
TPH DRO	Mod. 8015B	53847	2009-08-31 at 11:57	63091	2009-08-31 at 11:57
TPH GRO	S 8015B	53903	2009-08-31 at 14:00	63148	2009-09-01 at 06:10

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 9082836 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: 208529 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	63149	Date Analyzed:	2009-08-31	Analyzed By:	AG
Prep Batch:	53903	Sample Preparation:	2009-08-31	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)		1.98	mg/Kg	1	2.00	99	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.17	mg/Kg	1	2.00	58	45.2 - 144.3

Sample: 208529 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63213	Date Analyzed:	2009-09-03	Analyzed By:	AR
Prep Batch:	53889	Sample Preparation:	2009-09-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1340**	mg/Kg	50	4.00

Sample: 208529 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	63088	Date Analyzed:	2009-08-31	Analyzed By:	kg
Prep Batch:	53845	Sample Preparation:	2009-08-31	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-Triacontane		108	mg/Kg	1	100	108	13.2 - 219.3

Sample: 208529 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	63148	Date Analyzed:	2009-09-01	Analyzed By:	AG
Prep Batch:	53903	Sample Preparation:	2009-08-31	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)		1.88	mg/Kg	1	2.00	94	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.27	mg/Kg	1	2.00	64	31 - 135

Sample: 208530 - AH-1 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63213	Date Analyzed:	2009-09-03	Analyzed By:	AR
Prep Batch:	53889	Sample Preparation:	2009-09-01	Prepared By:	AR

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

Sample: 208531 - AH-1 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63264	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53890	Sample Preparation:	2009-09-01	Prepared By:	AR

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

Sample: 208532 - AH-1 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63264	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53890	Sample Preparation:	2009-09-01	Prepared By:	AR

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

Sample: 208533 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	63149	Date Analyzed:	2009-08-31	Analyzed By:	AG
Prep Batch:	53903	Sample Preparation:	2009-08-31	Prepared By:	AG

Parameter	Flag	Result	RL 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)		1.95	mg/Kg	1	2.00	98	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.10	mg/Kg	1	2.00	55	45.2 - 144.3

Sample: 208533 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63264	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53890	Sample Preparation:	2009-09-01	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**2070**	mg/Kg	100	4.00

Sample: 208533 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	63088	Date Analyzed:	2009-08-31	Analyzed By:	kg
Prep Batch:	53845	Sample Preparation:	2009-08-31	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-Triacontane		108	mg/Kg	1	100	108	13.2 - 219.3

Sample: 208533 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	63148	Date Analyzed:	2009-09-01	Analyzed By:	AG
Prep Batch:	53903	Sample Preparation:	2009-08-31	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)		1.85	mg/Kg	1	2.00	92	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.22	mg/Kg	1	2.00	61	31 - 135

Sample: 208534 - AH-2 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63264	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53890	Sample Preparation:	2009-09-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1720**	mg/Kg	50	4.00

Sample: 208535 - AH-2 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63264	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53890	Sample Preparation:	2009-09-01	Prepared By:	AR

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

Sample: 208536 - AH-2 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63264	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53890	Sample Preparation:	2009-09-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**459**	mg/Kg	50	4.00

Sample: 208537 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63264	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53890	Sample Preparation:	2009-09-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**611**	mg/Kg	50	4.00

Sample: 208537 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	63091	Date Analyzed:	2009-08-31	Analyzed By:	kg
Prep Batch:	53847	Sample Preparation:	2009-08-31	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-Triacontane		112	mg/Kg	1	100	112	13.2 - 219.3

Sample: 208537 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	63148	Date Analyzed:	2009-09-01	Analyzed By:	AG
Prep Batch:	53903	Sample Preparation:	2009-08-31	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)		1.83	mg/Kg	1	2.00	92	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.19	mg/Kg	1	2.00	60	31 - 135

Sample: 208538 - AH-3 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63264	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53890	Sample Preparation:	2009-09-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**631**	mg/Kg	50	4.00

Sample: 208539 - AH-3 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63264	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53890	Sample Preparation:	2009-09-01	Prepared By:	AR

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

Sample: 208540 - AH-3 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63264	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53890	Sample Preparation:	2009-09-01	Prepared By:	AR

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

Sample: 208541 - AH-3 (4-4.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63265	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53891	Sample Preparation:	2009-09-01	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**994**	mg/Kg	50	4.00

Sample: 208542 - AH-3 (5-5.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63265	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53891	Sample Preparation:	2009-09-01	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1080**	mg/Kg	50	4.00

Sample: 208543 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63265	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53891	Sample Preparation:	2009-09-01	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1960**	mg/Kg	50	4.00

Sample: 208543 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	63088	Date Analyzed:	2009-08-31	Analyzed By:	kg
Prep Batch:	53845	Sample Preparation:	2009-08-31	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-Triacontane		107	mg/Kg	1	100	107	13.2 - 219.3

Sample: 208543 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	63148	Date Analyzed:	2009-09-01	Analyzed By:	AG
Prep Batch:	53903	Sample Preparation:	2009-08-31	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)		1.88	mg/Kg	1	2.00	94	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.19	mg/Kg	1	2.00	60	31 - 135

Sample: 208544 - AH-4 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63265	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53891	Sample Preparation:	2009-09-01	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		528	mg/Kg	50	4.00

Sample: 208545 - AH-4 (2-2.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63265	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53891	Sample Preparation:	2009-09-01	Prepared By:	AR

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

Sample: 208546 - AH-4 (3-3.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63265	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53891	Sample Preparation:	2009-09-01	Prepared By:	AR

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

Sample: 208547 - AH-4 (4-4.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	63265	Date Analyzed:	2009-09-04	Analyzed By:	AR
Prep Batch:	53891	Sample Preparation:	2009-09-01	Prepared By:	AR

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

Method Blank (1) QC Batch: 63088

QC Batch:	63088	Date Analyzed:	2009-08-31	Analyzed By:	kg
Prep Batch:	53845	QC Preparation:	2009-08-31	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-Triacontane		98.8	mg/Kg	1	100	99	13 - 178.5

Method Blank (1) QC Batch: 63091

QC Batch: 63091 | Date Analyzed: 2009-08-31 | Analyzed By: kg
Prep Batch: 53847 | QC Preparation: 2009-08-31 | 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-Triacontane		115	mg/Kg	1	100	115	13 - 178.5

Method Blank (1) QC Batch: 63148

QC Batch: 63148 | Date Analyzed: 2009-09-01 | Analyzed By: AG
Prep Batch: 53903 | QC Preparation: 2009-08-31 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.482	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.86	mg/Kg	1	2.00	93	71.9 - 115
4-Bromofluorobenzene (4-BFB)		1.41	mg/Kg	1	2.00	70	38.1 - 146.2

Method Blank (1) QC Batch: 63149

QC Batch: 63149 | Date Analyzed: 2009-08-31 | Analyzed By: AG
Prep Batch: 53903 | QC Preparation: 2009-08-31 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00100	mg/Kg	0.01
Toluene		<0.00100	mg/Kg	0.01
Ethylbenzene		<0.00110	mg/Kg	0.01
Xylene		<0.00360	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.94	mg/Kg	1	2.00	97	65.6 - 130.6
4-Bromofluorobenzene (4-BFB)		1.23	mg/Kg	1	2.00	62	51.9 - 128.1

Method Blank (1) QC Batch: 63213

QC Batch: 63213 Date Analyzed: 2009-09-03 Analyzed By: AR
Prep Batch: 53889 QC Preparation: 2009-09-01 Prepared By: AR

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

Method Blank (1) QC Batch: 63264

QC Batch: 63264 Date Analyzed: 2009-09-04 Analyzed By: AR
Prep Batch: 53890 QC Preparation: 2009-09-01 Prepared By: AR

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

Method Blank (1) QC Batch: 63265

QC Batch: 63265 Date Analyzed: 2009-09-04 Analyzed By: AR
Prep Batch: 53891 QC Preparation: 2009-09-01 Prepared By: AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 63088 Date Analyzed: 2009-08-31 Analyzed By: kg
Prep Batch: 53845 QC Preparation: 2009-08-31 Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	167	mg/Kg	1	250	<5.86	67	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	176	mg/Kg	1	250	<5.86	70	57.4 - 133.4	5	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	92.1	95.6	mg/Kg	1	100	92	96	48.5 - 146.7

Laboratory Control Spike (LCS-1)

QC Batch: 63091 | Date Analyzed: 2009-08-31 | Analyzed By: kg
Prep Batch: 53847 | QC Preparation: 2009-08-31 | Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	162	mg/Kg	1	250	<5.86	65	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	172	mg/Kg	1	250	<5.86	69	57.4 - 133.4	6	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-Triacontane	109	107	mg/Kg	1	100	109	107	48.5 - 146.7

Laboratory Control Spike (LCS-1)

QC Batch: 63148 | Date Analyzed: 2009-09-01 | Analyzed By: AG
Prep Batch: 53903 | QC Preparation: 2009-08-31 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.0	mg/Kg	1	20.0	<0.482	80	60.5 - 120.1

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	15.0	mg/Kg	1	20.0	<0.482	75	60.5 - 120.1	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	1.91	mg/Kg	1	2.00	96	96	78.8 - 124.7
4-Bromofluorobenzene (4-BFB)	1.65	1.55	mg/Kg	1	2.00	82	78	66.1 - 128.3

Laboratory Control Spike (LCS-1)

QC Batch: 63149 | Date Analyzed: 2009-08-31 | Analyzed By: AG
Prep Batch: 53903 | QC Preparation: 2009-08-31 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.87	mg/Kg	1	2.00	<0.00100	94	72.7 - 129.8
Toluene	1.88	mg/Kg	1	2.00	<0.00100	94	71.6 - 129.6
Ethylbenzene	1.90	mg/Kg	1	2.00	<0.00110	95	70.8 - 129.7
Xylene	5.42	mg/Kg	1	6.00	<0.00360	90	70.9 - 129.4

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
Benzene	1.88	mg/Kg	1	2.00	<0.00100	94	72.7 - 129.8	0	20
Toluene	1.93	mg/Kg	1	2.00	<0.00100	96	71.6 - 129.6	3	20
Ethylbenzene	1.96	mg/Kg	1	2.00	<0.00110	98	70.8 - 129.7	3	20
Xylene	5.59	mg/Kg	1	6.00	<0.00360	93	70.9 - 129.4	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.01	1.95	mg/Kg	1	2.00	100	98	65.9 - 132
4-Bromofluorobenzene (4-BFB)	1.32	1.31	mg/Kg	1	2.00	66	66	55.2 - 128.9

Laboratory Control Spike (LCS-1)

QC Batch: 63213 | Date Analyzed: 2009-09-03 | Analyzed By: AR
Prep Batch: 53889 | QC Preparation: 2009-09-01 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.9	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	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: 63264 | Date Analyzed: 2009-09-04 | Analyzed By: AR
Prep Batch: 53890 | QC Preparation: 2009-09-01 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.3	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	99.8	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: 63265 | Date Analyzed: 2009-09-04 | Analyzed By: AR
Prep Batch: 53891 | QC Preparation: 2009-09-01 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.8	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	101	mg/Kg	1	100	<2.18	101	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: 208566

QC Batch: 63088 | Date Analyzed: 2009-08-31 | Analyzed By: kg
Prep Batch: 53845 | QC Preparation: 2009-08-31 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	197	mg/Kg	1	250	<5.86	79	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	216	mg/Kg	1	250	<5.86	86	35.2 - 167.1	9	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	107	108	mg/Kg	1	100	107	108	34.5 - 178.4

Matrix Spike (MS-1) Spiked Sample: 208537

QC Batch: 63091 | Date Analyzed: 2009-08-31 | Analyzed By: kg
Prep Batch: 53847 | QC Preparation: 2009-08-31 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	196	mg/Kg	1	250	<5.86	78	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	179	mg/Kg	1	250	<5.86	72	35.2 - 167.1	9	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	105	112	mg/Kg	1	100	105	112	34.5 - 178.4

Matrix Spike (MS-1) Spiked Sample: 208533

QC Batch: 63148 | Date Analyzed: 2009-09-01 | Analyzed By: AG
Prep Batch: 53903 | QC Preparation: 2009-08-31 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	13.2	mg/Kg	1	20.0	<0.482	66	12.8 - 175.2

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	13.2	mg/Kg	1	20.0	<0.482	66	12.8 - 175.2	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.80	1.82	mg/Kg	1	2	90	91	60.8 - 132.1
4-Bromofluorobenzene (4-BFB)	1.27	1.24	mg/Kg	1	2	64	62	31.3 - 161.7

Matrix Spike (MS-1) Spiked Sample: 208569

QC Batch: 63149 | Date Analyzed: 2009-08-31 | Analyzed By: AG
Prep Batch: 53903 | QC Preparation: 2009-08-31 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.62	mg/Kg	1	2.00	<0.00100	81	58.6 - 165.2
Toluene	1.70	mg/Kg	1	2.00	<0.00100	85	64.2 - 153.8
Ethylbenzene	1.75	mg/Kg	1	2.00	<0.00110	88	61.6 - 159.4
Xylene	4.89	mg/Kg	1	6.00	<0.00360	82	64.4 - 155.3

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
Benzene		1.97	mg/Kg	1	2.00	<0.00100	98	58.6 - 165.2	20	20
Toluene	[1]	2.11	mg/Kg	1	2.00	<0.00100	106	64.2 - 153.8	22	20
Ethylbenzene	[2]	2.21	mg/Kg	1	2.00	<0.00110	110	61.6 - 159.4	23	20
Xylene	[3]	6.24	mg/Kg	1	6.00	<0.00360	104	64.4 - 155.3	24	20

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

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)		2.03	2.00	mg/Kg	1	2	102	100	76 - 127.9
4-Bromofluorobenzene (4-BFB)	[4] [5]	1.09	1.14	mg/Kg	1	2	54	57	72 - 127.8

Matrix Spike (MS-1) Spiked Sample: 208530

QC Batch: 63213 | Date Analyzed: 2009-09-03 | Analyzed By: AR
Prep Batch: 53889 | QC Preparation: 2009-09-01 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10300	mg/Kg	100	10000	<218	102	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	10500	mg/Kg	100	10000	<218	104	85 - 115	2	20

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

[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]Surrogate out due to peak interference.
[5]Surrogate out due to peak interference.

Matrix Spike (MS-1) Spiked Sample: 208540

QC Batch: 63264 Date Analyzed: 2009-09-04 Analyzed By: AR
Prep Batch: 53890 QC Preparation: 2009-09-01 Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11100	mg/Kg	100	10000	1120	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	11300	mg/Kg	100	10000	1120	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: 208550

QC Batch: 63265 Date Analyzed: 2009-09-04 Analyzed By: AR
Prep Batch: 53891 QC Preparation: 2009-09-01 Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9920	mg/Kg	100	10000	<218	99	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	10000	mg/Kg	100	10000	<218	100	85 - 115	1	20

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

Standard (CCV-2)

QC Batch: 63088 Date Analyzed: 2009-08-31 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	224	90	80 - 120	2009-08-31

Standard (CCV-3)

QC Batch: 63088 Date Analyzed: 2009-08-31 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	225	90	80 - 120	2009-08-31

Standard (CCV-1)

QC Batch: 63091 Date Analyzed: 2009-08-31 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	203	81	80 - 120	2009-08-31

Standard (CCV-2)

QC Batch: 63091 Date Analyzed: 2009-08-31 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	213	85	80 - 120	2009-08-31

Standard (CCV-1)

QC Batch: 63148 Date Analyzed: 2009-09-01 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	0.948	95	80 - 120	2009-09-01

Standard (CCV-2)

QC Batch: 63148 Date Analyzed: 2009-09-01 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	1.17	117	80 - 120	2009-09-01

Standard (CCV-1)

QC Batch: 63149 Date Analyzed: 2009-08-31 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	0.107	107	80 - 120	2009-08-31
Toluene		mg/Kg	0.100	0.113	113	80 - 120	2009-08-31
Ethylbenzene		mg/Kg	0.100	0.114	114	80 - 120	2009-08-31
Xylene		mg/Kg	0.300	0.315	105	80 - 120	2009-08-31

Standard (CCV-2)

QC Batch: 63149 Date Analyzed: 2009-08-31 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	0.0911	91	80 - 120	2009-08-31
Toluene		mg/Kg	0.100	0.0950	95	80 - 120	2009-08-31
Ethylbenzene		mg/Kg	0.100	0.0936	94	80 - 120	2009-08-31
Xylene		mg/Kg	0.300	0.266	89	80 - 120	2009-08-31

Standard (ICV-1)

QC Batch: 63213 Date Analyzed: 2009-09-03 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.6	98	85 - 115	2009-09-03

Standard (CCV-1)

QC Batch: 63213 Date Analyzed: 2009-09-03 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	2009-09-03

Standard (ICV-1)

QC Batch: 63264 Date Analyzed: 2009-09-04 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	2009-09-04

Standard (CCV-1)

QC Batch: 63264 Date Analyzed: 2009-09-04 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.6	100	85 - 115	2009-09-04

Standard (ICV-1)

QC Batch: 63265 Date Analyzed: 2009-09-04 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	2009-09-04

Standard (CCV-1)

QC Batch: 63265 Date Analyzed: 2009-09-04 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	2009-09-04

Order #: 9082836

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: IKE TAVAREZ

PROJECT NO.: 114-6400273

PROJECT NAME: COG/ WEST PEARL 36 STATE #1

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD (Ext. to C35)	TX1005	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. 8240/8260/824	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/606	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
208529	08/26/09		S		X	AH-1 (0-1')	1				X			X												X				
530			S		X	AH-1 (1-1.5')	1				X															X				
531			S		X	AH-1 (2-2.5')	1				X															X				
532			S		X	AH-1 (3-3.5')	1				X															X				
533			S		X	AH-2 (0-1')	1				X			X												X				
534			S		X	AH-2 (1-1.5')	1				X															X				
535			S		X	AH-2 (2-2.5')	1				X															X				
536			S		X	AH-2 (3-3.5')	1				X															X				
537			S		X	AH-3 0-1'	1				X			X												X				
538			S		X	AH-3 1-1.5'	1				X															X				

RELINQUISHED BY: (Signature) — Date: 08/28/09 Time: 3:55
RECEIVED BY: (Signature) — Date: — Time:

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

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: 8/28/09 TIME: 15:16

SAMPLED BY: (Print & Initial) JOHNNY TISWORTH — Date: 08/28/09 Time: 1045

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

TETRA TECH CONTACT PERSON: IKE TAVAREZ

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 10.9°c intact

REMARKS: Run deeper Sample if Test exceed 100 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.

Run (2) BTEX on Lowest TPH - All tests Midland

Order #: 9082836

Analysis Request of Chain of Custody Record

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

CLIENT NAME: COG

SITE MANAGER: IKE TAVAREZ

PROJECT NO.: 114-6400273

PROJECT NAME: COG / WEST PEARL 36 STATE #1 LEA CO., NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
208539	08/26/09		S		X	AH-3 (2-2.5')	1				X	
540			S		X	AH-3 (3-3.5')	1				X	
541			S		X	AH-3 (4-4.5')	1				X	
542			S		X	AH-3 (5-5.5')	1				X	
543			S		X	AH-4 (0-1')	1				X	
544			S		X	AH-4 (1-1.5')	1				X	
545			S		X	AH-4 (2-2.5')	1				X	
546			S		X	AH-4 (3-3.5')	1				X	
547			S		X	AH-4 (4-4.5')	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

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

RELINQUISHED BY: (Signature) — Date: 08/28/09 Time: 3:55
RECEIVED BY: (Signature) — Date: Time:

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

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

SAMPLED BY: (Print & Initial) JOHNNY JETSWORTH — Date: 08/26/09 Time: 1045

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

RECEIVING LABORATORY: TRACE
ADDRESS:
CITY: MIDLAND STATE: TX ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature)
DATE: 8/28/09 TIME: 15:55

TETRA TECH CONTACT PERSON: IKE TAVAREZ

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 10.9°c intact

REMARKS: All tests Midland

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