

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

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

HOBBS OCD

JUL 01 2011

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75XK1535028246

4054

Form C-141

Revised October 10, 2003

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 685-4332
Facility Name	Edwards State #4	Facility Type	Tank Battery

Surface Owner: State	Mineral Owner	Lease No. 30-025-38730
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	16	17S	32E	1500	South	2290	West	Lea

Latitude N 32.49.915° Longitude W 103.46.321°

NATURE OF RELEASE

Type of Release: Water	Volume of Release 23 bbls	Volume Recovered 20 bbls
Source of Release Water Tank	Date and Hour of Occurrence 12/3/9	Date and Hour of Discovery 12/3/9
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

Caused by a combination of a power problem and an alarm failure at the battery.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. A 40 mil liner was installed, the site was backfilled with clean material, and the berms were rebuilt. Tetra Tech prepared closure report and submitted to NMOCD for review.

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

Signature: <i>Patrick L. Ellis</i>		OIL CONSERVATION DIVISION	
Printed Name: Patrick L. Ellis		Approved by District Supervisor:	
Title: Environmental and Safety Supervisor		Approval Date:	Expiration Date:
E-mail Address: pellis@conchoresources.com		Conditions of Approval:	Attached ☐
Date: 6-2-11	Phone: (432) 686-3023		

* Attach Additional Sheets If Necessary

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

0391
Form C-141
Revised October 10, 2003

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JUL 01 2011

Release Notification and Corrective **RECEIVED**

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Kanicia Carrillo
Address	550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No.	432-685-4332
Facility Name	Edward State #4	Facility Type	Battery
Surface Owner	State	Mineral Owner	
		Lease No.	30-025-38730

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	16	17S	32E	1500	South	2290	West	Lea

Latitude N32.49.915 Longitude W103.46.321

NATURE OF RELEASE

Type of Release	Water	Volume of Release	23bbls	Volume Recovered	20bbls
Source of Release	Water Tank	Date and Hour of Occurrence	12/03/09 AM	Date and Hour of Discovery	12/03/09 AM
Was Immediate Notice Given?	☐ Yes ☐ No ☒ Not Required				
By Whom?	If YES, To Whom?				
Was a Watercourse Reached?	☐ Yes ☒ No				
If YES, Volume Impacting the Watercourse.					

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Caused by a combination of a power problem and an alarm failure at the battery. Both problems are fixed.

Describe Area Affected and Cleanup Action Taken.*

The spill area was contained within the dike.

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/BLM for your approval prior to any significant remediation work.

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

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: Chasity Jackson		Approved by District Supervisor:	
Title: Agent for COG	Approval Date:	Expiration Date:	
E-mail Address: cjackson@conchoresources.com	Conditions of Approval:		Attached ☐
Date: 12/10/09	Phone: 432-686-3087		

* Attach Additional Sheets If Necessary

SITE INFORMATION

Report Type: Work Plan

General Site Information:

Site:	Edward State #4
Company:	COG Operating LLC
Section, Township and Range	Section 16, T17S, R32 E Unit Letter - K
Lease Number:	30-025-38730
County:	Lea County
GPS:	32.83196° N, 103.77201° W
Surface Owner:	State
Mineral Owner:	
Directions:	From the intersection of Hwy 529 and Co Rd. 126 (Maljamar Rd.) turn north on Co Rd. 126 and travel 2.4m, turn left travel 0.5m, turn left travel 0.1m to site.

Release Data:

Date Released:	12/3/2009
Type Release:	Produced water
Source of Contamination:	Power problem and a alarm failure
Fluid Released:	23 barrels
Fluids Recovered:	20 barrels

Official Communication:

Name:	Pat Ellis	Kim Dorey
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) 685-4332	(432) 631-0348
Fax:	(432) 684-7137	
Email:	pellis@conchoresources.com	kim.dorey@tetrattech.com

Ranking Criteria

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

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

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AUG 06 2010
HOBBSOCD



TETRA TECH

June 29, 2010

RECEIVED

AUG 06 2010

HOBBSOCD

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

Re: Work Plan for the COG Operating LLC., Edwards State #4, Unit K, Section 16, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Johnson:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Edwards State #4, Unit K, Section 16, Township 17 South, Range 32 East, Lea County, New Mexico. (Site). The spill site coordinates are N 32.83196°, W 103.77201°. 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 December 3, 2009, and released approximately twenty-three (23) barrels of produced water due to a power problem and the failure of an alarm. To alleviate the problem, COG personnel repaired both problems. Twenty (20) barrels of standing fluids were recovered. The spill was contained within the berm of the tank battery. The initial C-141 form is enclosed in Appendix C.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3945 www.tetrattech.com



Groundwater

The United States Geological Survey (USGS) Well Reports did not list any wells in Section 16. This site is shown on the edge of the NMOCD Eddy County Map. According to the NMOCD Eddy County groundwater map, the average depth to groundwater in this area is greater than 100' below surface. The Water Well 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 (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On January 6, 2010, Tetra Tech personnel inspected and sampled the spill area which measured approximately 60' x 45'. A total of three (3) auger holes (AH-1 through AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The results of the sampling 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 TPH and BTEX RRAL concentrations. Elevated chloride concentrations were detected for AH-1 (9-9.5') of 961 mg/kg, AH-2 (9-9.5') of 4,980 mg/kg, and AH-3 (9-9.5') of 3,730 mg/kg.

On March 3, 2010 and April 22, 2010, Tetra Tech personnel supervised the installation of two boreholes (BH-1 and BH-2) and collected samples for laboratory analysis. In order to delineate the chloride



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concentration impact and due to restricted access, SB-1 was installed between AH-2 and AH-3. The chloride concentration dropped to <200 mg/kg at 20-21' below grade surface (BGS). Additionally, SB-2 was installed near AH-1 and had chloride concentrations of <200 mg/kg at 25' and 30' BGS.

Work Plan

Tetra Tech proposes to supervise the removal of impacted soils as shown in attached Table 1 and Figure 4. In addition, selected excavated areas with deeper chloride impact would be capped (lined) with a 40 mil plastic liner. Once the areas are excavated to the appropriate depths, the excavation will be backfilled with clean soil. The liner will be installed at a depth of 4.0' below surface. The liner installation areas are shown on Figure 4.

Respectfully submitted,
TETRA TECH

Kim Dorey
Staff Geologist

cc: Pat Ellis – COG
cc: Trisha Bad Bear – BLM

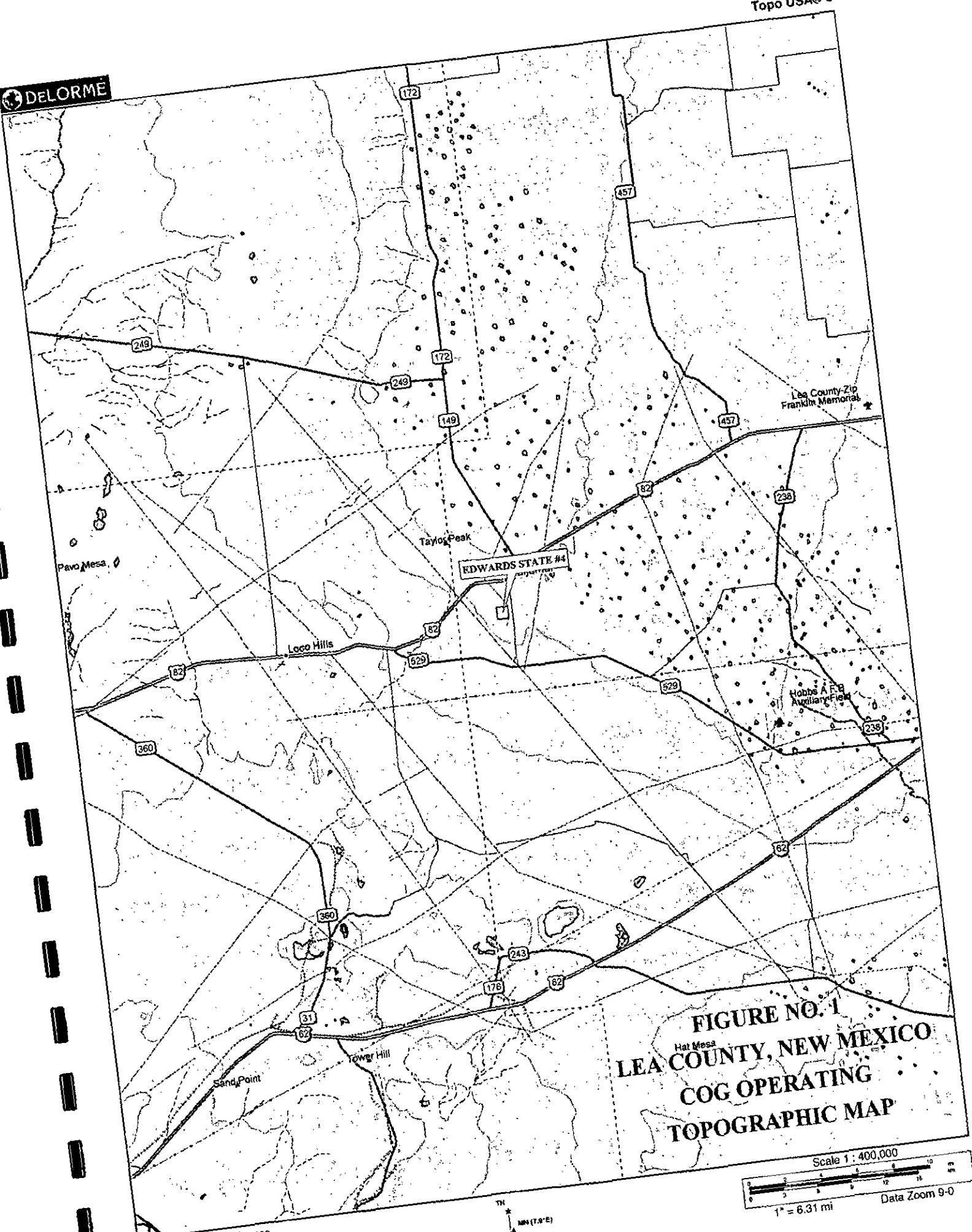
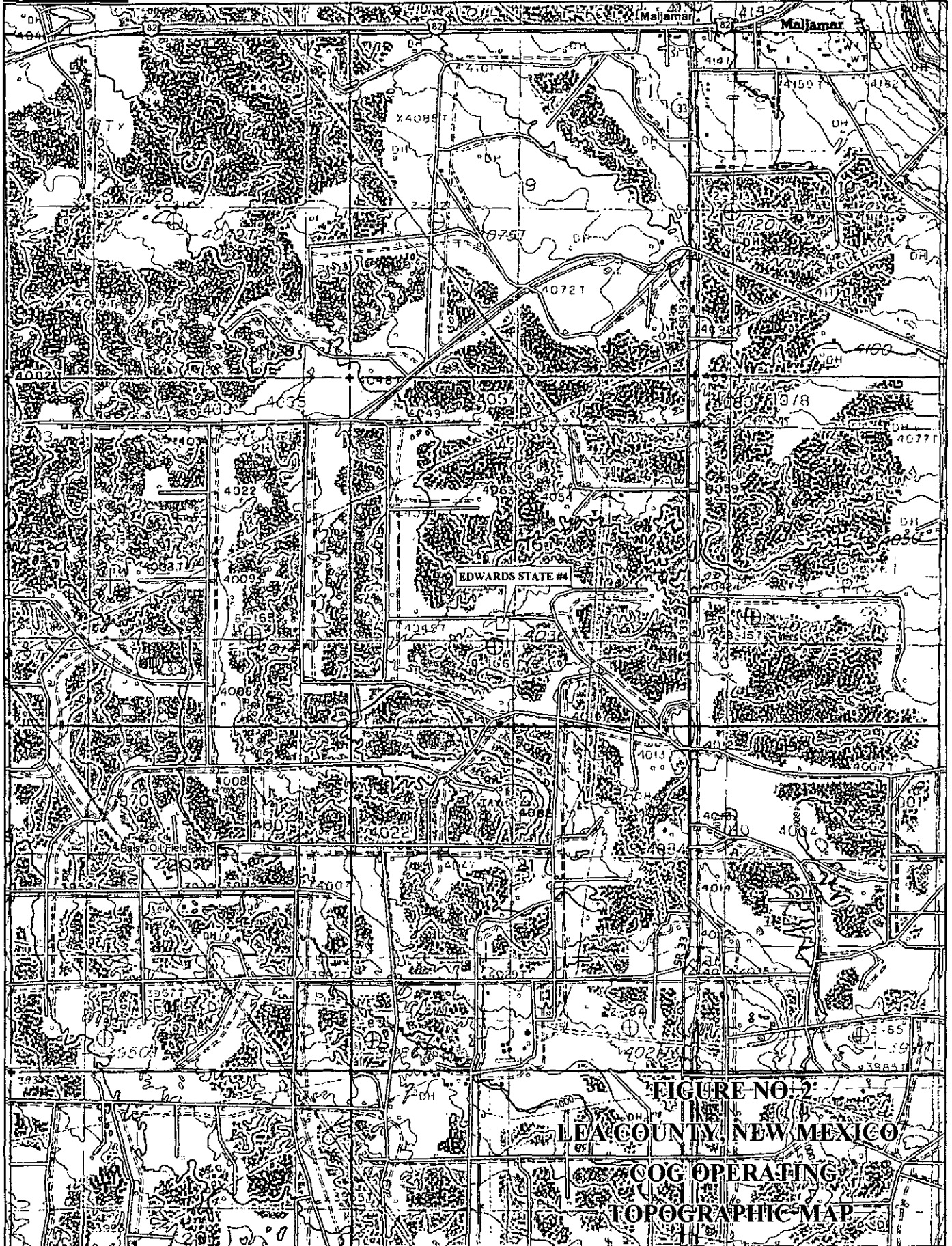


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
COG OPERATING
TOPOGRAPHIC MAP

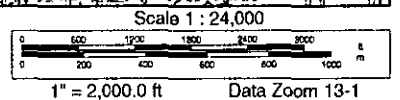
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1" = 6.31 mi
Data Zoom 9-0

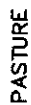


Data use subject to license.

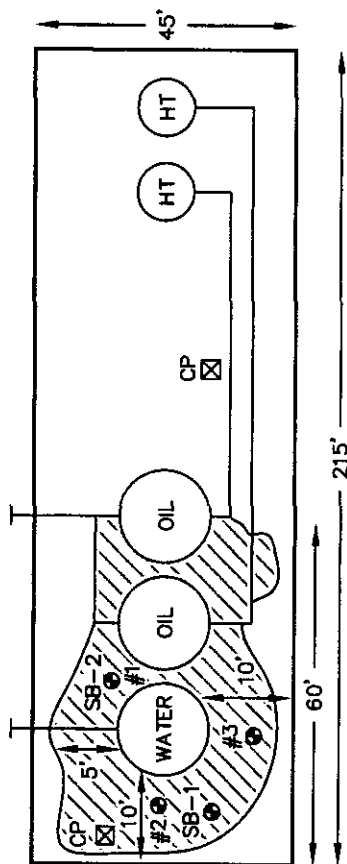
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LEASE RD.



WELL PAD

OWELL

PASTURE

FIGURE NO. 4

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

EDWARDS STATE #4 TB

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 1/14/09
DOWNL BY: JJ
FILE: H:\COPIES\4003391
STATE STATE #4

NOT TO SCALE

-  SPILL AREA
 SAMPLE LOCATIONS
 SOIL BORING LOCATIONS

Table 1
COG Operating
Edwards State #4
Lea County, NM

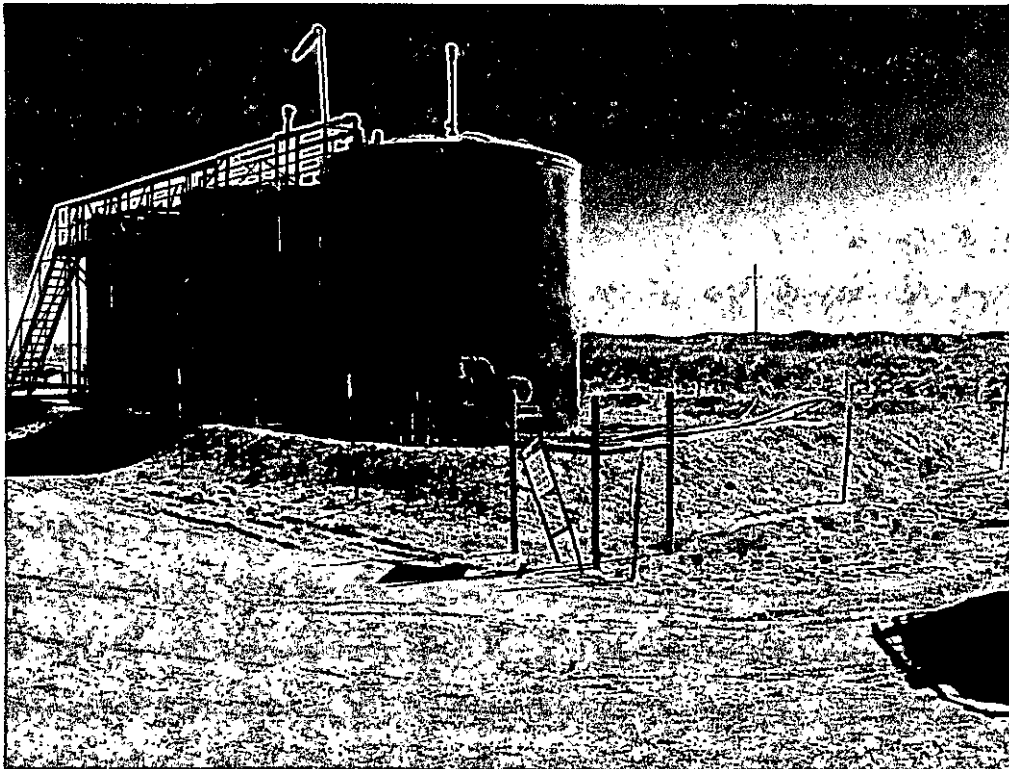
Sample ID	Sample Date	Depth (ft)	Soil Status		TPH (mg/kg)				BTEX				Chloride
			In-Situ	Removed	DRO	GRO	Total	Benzene	Toluene	Ethylbenzene	Xylene		
AH-2	1/6/10	0-1'	X		140	392	532	0.175	0.365	1.92	6.28	1,430	
		1-1.5'	X									2,370	
		2-2.5'	X									5,290	
		3-3.5'	X									6,920	
		4-4.5'	X									3,570	
		5-5.5'	X									3,010	
		6-6.5'	X									2,930	
		7-7.5'	X									3,580	
		8-8.5'	X									4,030	
		9-9.5'	X									4,980	
SB-1	3/3/10	0-1'	X									834	
		2-3'	X									2,230	
		4-5'	X									3,450	
		6-7'	X									571	
		10-11'	X									2,000	
		15-16'	X									942	
		20-21'	X									<200	
AH-3	1/6/10	0-1'	X		<50.0	<1.00	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	6,890	
		1-1.5'	X									<200	
		2-2.5'	X									<200	
		3-3.5'	X									<200	
		4-4.5'	X									<200	
		5-5.5'	X									<200	
		6-6.5'	X									243	
		7-7.5'	X									872	
		8-8.5'	X									1,070	
		9-9.5'	X									3,730	

BEB Below Excavation Bottom
(-) Not Analyzed
Proposed excavation depths
40 mil plastic liner

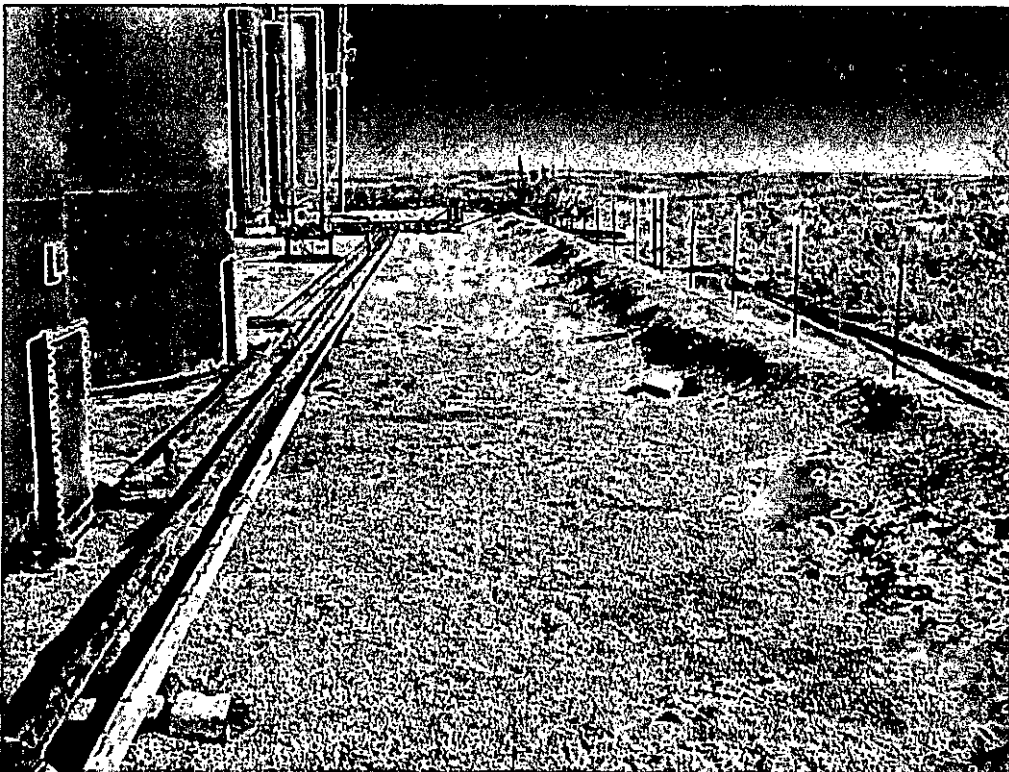
COG Operating LLC
Edwards Tank Battery
Lea County, New Mexico



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View south east – AH-2 (1/6/10)



View east – Rear of TB Near AH-3 (1/6/10)

Water Well Data
Average Depth to Groundwater (ft)
COG - Edwards State #4 Tank Battery
Lea County, New Mexico

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

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

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

16 South 32 East					
6	5	4	3	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
					260

17 South 32 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 32 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
					117

16 South 33 East					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
190	168		160		

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

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

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

Summary Report

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

Report Date: January 13, 2010

Work Order: 10010735



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
219137	AH-1 0-1'	soil	2010-01-06	00:00	2010-01-07
219138	AH-1 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219139	AH-1 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219140	AH-1 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219141	AH-1 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219142	AH-1 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219143	AH-1 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219144	AH-1 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219145	AH-1 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219146	AH-1 9'-9.5'	soil	2010-01-06	00:00	2010-01-07
219147	AH-2 0-1'	soil	2010-01-06	00:00	2010-01-07
219148	AH-2 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219149	AH-2 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219150	AH-2 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219151	AH-2 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219152	AH-2 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219153	AH-2 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219154	AH-2 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219155	AH-2 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219156	AH-2 9'-9.5'	soil	2010-01-06	00:00	2010-01-07
219157	AH-3 0-1'	soil	2010-01-06	00:00	2010-01-07
219158	AH-3 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219159	AH-3 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219160	AH-3 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219161	AH-3 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219162	AH-3 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219163	AH-3 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219164	AH-3 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219165	AH-3 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219166	AH-3 9'-9.5'	soil	2010-01-06	00:00	2010-01-07

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
219137 - AH-1 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	4.01
219147 - AH-2 0-1'	0.175	0.365	1.92	6.28	140	392
219157 - AH-3 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00

Sample: 219137 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		2110	mg/Kg	4.00

Sample: 219138 - AH-1 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		1020	mg/Kg	4.00

Sample: 219139 - AH-1 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		2920	mg/Kg	4.00

Sample: 219140 - AH-1 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		3230	mg/Kg	4.00

Sample: 219141 - AH-1 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		2610	mg/Kg	4.00

Sample: 219142 - AH-1 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		2050	mg/Kg	4.00

Sample: 219143 - AH-1 6'-6.5'

continued ...

sample 219143 continued ...

Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		1390	mg/Kg	4.00

Sample: 219144 - AH-1 7'-7.5'

Param	Flag	Result	Units	RL
Chloride		2080	mg/Kg	4.00

Sample: 219145 - AH-1 8'-8.5'

Param	Flag	Result	Units	RL
Chloride		1000	mg/Kg	4.00

Sample: 219146 - AH-1 9'-9.5'

Param	Flag	Result	Units	RL
Chloride		961	mg/Kg	4.00

Sample: 219147 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		1430	mg/Kg	4.00

Sample: 219148 - AH-2 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		2370	mg/Kg	4.00

Sample: 219149 - AH-2 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		5290	mg/Kg	4.00

Sample: 219150 - AH-2 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		6920	mg/Kg	4.00

Sample: 219151 - AH-2 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		3570	mg/Kg	4.00

Sample: 219152 - AH-2 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		3010	mg/Kg	4.00

Sample: 219153 - AH-2 6'-6.5'

Param	Flag	Result	Units	RL
Chloride		2930	mg/Kg	4.00

Sample: 219154 - AH-2 7'-7.5'

Param	Flag	Result	Units	RL
Chloride		3580	mg/Kg	4.00

Sample: 219155 - AH-2 8'-8.5'

Param	Flag	Result	Units	RL
Chloride		4030	mg/Kg	4.00

Sample: 219156 - AH-2 9'-9.5'

Param	Flag	Result	Units	RL
Chloride		4980	mg/Kg	4.00

Sample: 219157 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		6890	mg/Kg	4.00

Sample: 219158 - AH-3 1'-1.5'

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

Sample: 219159 - AH-3 2'-2.5'

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

Sample: 219160 - AH-3 3'-3.5'

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

Sample: 219161 - AH-3 4'-4.5'

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

Sample: 219162 - AH-3 5'-5.5'

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

Sample: 219163 - AH-3 6'-6.5'

Param	Flag	Result	Units	RL
Chloride		243	mg/Kg	4.00

Sample: 219164 - AH-3 7'-7.5'

Param	Flag	Result	Units	RL
Chloride		872	mg/Kg	4.00

Sample: 219165 - AH-3 8'-8.5'

Param	Flag	Result	Units	RL
Chloride		1070	mg/Kg	4.00

Sample: 219166 - AH-3 9'-9.5'

Param	Flag	Result	Units	RL
Chloride		3730	mg/Kg	4.00



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Certifications

WBENC: 237019

HUB: 1752439743100-86536
NCTRCA WFWB38444Y0909

DBE: VN 20657

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: January 13, 2010

Work Order: 10010735



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

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
219137	AH-1 0-1'	soil	2010-01-06	00:00	2010-01-07
219138	AH-1 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219139	AH-1 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219140	AH-1 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219141	AH-1 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219142	AH-1 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219143	AH-1 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219144	AH-1 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219145	AH-1 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219146	AH-1 9'-9.5'	soil	2010-01-06	00:00	2010-01-07

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
219147	AH-2 0-1'	soil	2010-01-06	00:00	2010-01-07
219148	AH-2 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219149	AH-2 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219150	AH-2 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219151	AH-2 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219152	AH-2 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219153	AH-2 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219154	AH-2 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219155	AH-2 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219156	AH-2 9'-9.5'	soil	2010-01-06	00:00	2010-01-07
219157	AH-3 0-1'	soil	2010-01-06	00:00	2010-01-07
219158	AH-3 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219159	AH-3 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219160	AH-3 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219161	AH-3 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219162	AH-3 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219163	AH-3 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219164	AH-3 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219165	AH-3 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219166	AH-3 9'-9.5'	soil	2010-01-06	00:00	2010-01-07

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 24 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/Edwards State #4 were received by TraceAnalysis, Inc. on 2010-01-07 and assigned to work order 10010735. Samples for work order 10010735 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
BTEX	S 8021B	56978	2010-01-11 at 10:00	66642	2010-01-11 at 10:07
Chloride (Titration)	SM 4500-Cl B	56980	2010-01-11 at 08:41	66654	2010-01-12 at 12:49
Chloride (Titration)	SM 4500-Cl B	56981	2010-01-11 at 08:42	66655	2010-01-12 at 12:49
Chloride (Titration)	SM 4500-Cl B	56982	2010-01-11 at 08:42	66656	2010-01-12 at 12:50
TPH DRO - NEW	Mod. 8015B	56947	2010-01-08 at 13:30	66599	2010-01-08 at 13:30
TPH GRO	S 8015B	56978	2010-01-11 at 10:00	66643	2010-01-11 at 10:34

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 10010735 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

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114-6400391

Work Order: 10010735
COG/Edwards State #4

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Lea County, NM

Analytical Report

Sample: 219137 - AH-1 0-1'

Laboratory: Midland

Analysis: BTEX

QC Batch: 66642

Prep Batch: 56978

Analytical Method: S 8021B

Date Analyzed: 2010-01-11

Sample Preparation: 2010-01-11

Prep Method: S 5035

Analyzed By: AG

Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.06	mg/Kg	1	2.00	103	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		2.05	mg/Kg	1	2.00	102	43.1 - 158.4

Sample: 219137 - AH-1 0-1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 66654

Prep Batch: 56980

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-01-12

Sample Preparation: 2010-01-11

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2110	mg/Kg	100	4.00

Sample: 219137 - AH-1 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 66599

Prep Batch: 56947

Analytical Method: Mod. 8015B

Date Analyzed: 2010-01-08

Sample Preparation: 2010-01-08

Prep Method: N/A

Analyzed By: kg

Prepared By: kg

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		107	mg/Kg	1	100	107	70 - 130

Sample: 219137 - AH-1 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 66643
Prep Batch: 56978

Analytical Method: S 8015B
Date Analyzed: 2010-01-11
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		4.01	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.05	mg/Kg	1	2.00	102	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.05	mg/Kg	1	2.00	102	61.7 - 131.1

Sample: 219138 - AH-1 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66654
Prep Batch: 56980

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1020	mg/Kg	50	4.00

Sample: 219139 - AH-1 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66654
Prep Batch: 56980

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2920	mg/Kg	100	4.00

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Sample: 219140 - AH-1 3'-3.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66654
Prep Batch: 56980

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3230	mg/Kg	100	4.00

Sample: 219141 - AH-1 4'-4.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66654
Prep Batch: 56980

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2610	mg/Kg	100	4.00

Sample: 219142 - AH-1 5'-5.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66654
Prep Batch: 56980

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2050	mg/Kg	50	4.00

Sample: 219143 - AH-1 6'-6.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66654
Prep Batch: 56980

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1390	mg/Kg	50	4.00

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Sample: 219144 - AH-1 7'-7.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66654	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56980				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2080	mg/Kg	50	4.00

Sample: 219145 - AH-1 8'-8.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66654	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56980				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1000	mg/Kg	50	4.00

Sample: 219146 - AH-1 9'-9.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66654	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56980				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		961	mg/Kg	50	4.00

Sample: 219147 - AH-2 0-1'

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2010-01-11	Analyzed By:	AG
QC Batch:	66642	Sample Preparation:	2010-01-11	Prepared By:	AG
Prep Batch:	56978				

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		0.175	mg/Kg	5	0.0100
Toluene		0.365	mg/Kg	5	0.0100

continued ...

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sample 219147 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Ethylbenzene		1.92	mg/Kg	5	0.0100
Xylene		6.28	mg/Kg	5	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		4.48	mg/Kg	5	5.00	90	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		6.81	mg/Kg	5	5.00	136	43.1 - 158.4

Sample: 219147 - AH-2 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66655
Prep Batch: 56981

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1430	mg/Kg	50	4.00

Sample: 219147 - AH-2 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 66599
Prep Batch: 56947

Analytical Method: Mod. 8015B
Date Analyzed: 2010-01-08
Sample Preparation: 2010-01-08

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

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		140	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		112	mg/Kg	1	100	112	70 - 130

Sample: 219147 - AH-2 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 66643
Prep Batch: 56978

Analytical Method: S 8015B
Date Analyzed: 2010-01-11
Sample Preparation: 2010-01-11

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

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Parameter	Flag	RL Result	Units	Dilution	RL
GRO		392	mg/Kg	5	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		4.43	mg/Kg	5	5.00	89	65.3 - 145
4-Bromofluorobenzene (4-BFB)	¹	6.68	mg/Kg	5	5.00	134	61.7 - 131.1

Sample: 219148 - AH-2 1'-1.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-01-12	Analyzed By: AR
QC Batch: 66655	Sample Preparation: 2010-01-11	Prepared By: AR
Prep Batch: 56981		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2370	mg/Kg	100	4.00

Sample: 219149 - AH-2 2'-2.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-01-12	Analyzed By: AR
QC Batch: 66655	Sample Preparation: 2010-01-11	Prepared By: AR
Prep Batch: 56981		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5290	mg/Kg	100	4.00

Sample: 219150 - AH-2 3'-3.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-01-12	Analyzed By: AR
QC Batch: 66655	Sample Preparation: 2010-01-11	Prepared By: AR
Prep Batch: 56981		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6920	mg/Kg	100	4.00

¹ High surrogate recovery due to peak interference.

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Sample: 219151 - AH-2 4'-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3570	mg/Kg	100	4.00

Sample: 219152 - AH-2 5'-5.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3010	mg/Kg	100	4.00

Sample: 219153 - AH-2 6'-6.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2930	mg/Kg	100	4.00

Sample: 219154 - AH-2 7'-7.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3580	mg/Kg	100	4.00

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Sample: 219155 - AH-2 8'-8.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4030	mg/Kg	100	4.00

Sample: 219156 - AH-2 9'-9.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4980	mg/Kg	100	4.00

Sample: 219157 - AH-3 0-1'

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2010-01-11	Analyzed By:	AG
QC Batch:	66642	Sample Preparation:	2010-01-11	Prepared By:	AG
Prep Batch:	56978				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.99	mg/Kg	1	2.00	100	43.1 - 158.4

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Sample: 219157 - AH-3 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66656
Prep Batch: 56982

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6890	mg/Kg	100	4.00

Sample: 219157 - AH-3 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 66599
Prep Batch: 56947

Analytical Method: Mod. 8015B
Date Analyzed: 2010-01-08
Sample Preparation: 2010-01-08

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		111	mg/Kg	1	100	111	70 - 130

Sample: 219157 - AH-3 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 66643
Prep Batch: 56978

Analytical Method: S 8015B
Date Analyzed: 2010-01-11
Sample Preparation: 2010-01-11

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.05	mg/Kg	1	2.00	102	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.09	mg/Kg	1	2.00	104	61.7 - 131.1

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Sample: 219158 - AH-3 1'-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

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

Sample: 219159 - AH-3 2'-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

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

Sample: 219160 - AH-3 3'-3.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

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

Sample: 219161 - AH-3 4'-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

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

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Sample: 219162 - AH-3 5'-5.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

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

Sample: 219163 - AH-3 6'-6.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		243	mg/Kg	50	4.00

Sample: 219164 - AH-3 7'-7.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		872	mg/Kg	50	4.00

Sample: 219165 - AH-3 8'-8.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1070	mg/Kg	50	4.00

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Sample: 219166 - AH-3 9'-9.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3730	mg/Kg	50	4.00

Method Blank (1) QC Batch: 66599

QC Batch:	66599	Date Analyzed:	2010-01-08	Analyzed By:	kg
Prep Batch:	56947	QC Preparation:	2010-01-08	Prepared By:	kg

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

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

Method Blank (1) QC Batch: 66642

QC Batch:	66642	Date Analyzed:	2010-01-11	Analyzed By:	AG
Prep Batch:	56978	QC Preparation:	2010-01-11	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.11	mg/Kg	1	2.00	106	64.9 - 142.7
4-Bromofluorobenzene (4-BFB)		1.98	mg/Kg	1	2.00	99	43.9 - 141.9

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Method Blank (1) QC Batch: 66643

QC Batch: 66643
Prep Batch: 56978

Date Analyzed: 2010-01-11
QC Preparation: 2010-01-11

Analyzed By: AG
Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.07	mg/Kg	1	2.00	104	66.2 - 145
4-Bromofluorobenzene (4-BFB)		1.92	mg/Kg	1	2.00	96	62 - 120.5

Method Blank (1) QC Batch: 66654

QC Batch: 66654
Prep Batch: 56980

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 66655

QC Batch: 66655
Prep Batch: 56981

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 66656

QC Batch: 66656
Prep Batch: 56982

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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

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Laboratory Control Spike (LCS-1)

QC Batch: 66599
Prep Batch: 56947

Date Analyzed: 2010-01-08
QC Preparation: 2010-01-08

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	280	mg/Kg	1	250	<5.86	112	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	266	mg/Kg	1	250	<5.86	106	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-Tricosane	123	120	mg/Kg	1	100	123	120	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 66642
Prep Batch: 56978

Date Analyzed: 2010-01-11
QC Preparation: 2010-01-11

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.20	mg/Kg	1	2.00	<0.00410	110	75.4 - 115.7
Toluene	2.02	mg/Kg	1	2.00	<0.00310	101	78.4 - 113.6
Ethylbenzene	1.94	mg/Kg	1	2.00	<0.00240	97	76 - 114.2
Xylene	5.83	mg/Kg	1	6.00	<0.00650	97	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.16	mg/Kg	1	2.00	<0.00410	108	75.4 - 115.7	2	20
Toluene	2.00	mg/Kg	1	2.00	<0.00310	100	78.4 - 113.6	1	20
Ethylbenzene	1.94	mg/Kg	1	2.00	<0.00240	97	76 - 114.2	0	20
Xylene	5.84	mg/Kg	1	6.00	<0.00650	97	76.9 - 113.6	0	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)	2.02	1.96	mg/Kg	1	2.00	101	98	65 - 142.9
4-Bromofluorobenzene (4-BFB)	2.00	1.98	mg/Kg	1	2.00	100	99	43.8 - 144.9

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Laboratory Control Spike (LCS-1)

QC Batch: 66643
Prep Batch: 56978

Date Analyzed: 2010-01-11
QC Preparation: 2010-01-11

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.7	mg/Kg	1	20.0	<0.396	84	52.5 - 114.3

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	17.5	mg/Kg	1	20.0	<0.396	88	52.5 - 114.3	5	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.94	1.90	mg/Kg	1	2.00	97	95	66.2 - 148.7
4-Bromofluorobenzene (4-BFB)	1.88	1.87	mg/Kg	1	2.00	94	94	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch: 66654
Prep Batch: 56980

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.5	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	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: 66655
Prep Batch: 56981

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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

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

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Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.5	mg/Kg	1	100	<2.18	100	85 - 115	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: 66656
Prep Batch: 56982

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	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.

Matrix Spike (MS-1) Spiked Sample: 219157

QC Batch: 66599
Prep Batch: 56947

Date Analyzed: 2010-01-08
QC Preparation: 2010-01-08

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	303	mg/Kg	1	250	<5.86	121	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	304	mg/Kg	1	250	<5.86	122	35.2 - 167.1	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	104	107	mg/Kg	1	100	104	107	70 - 130

Matrix Spike (MS-1) Spiked Sample: 219157

QC Batch: 66642
Prep Batch: 56978

Date Analyzed: 2010-01-11
QC Preparation: 2010-01-11

Analyzed By: AG
Prepared By: AG

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.27	mg/Kg	1	2.00	<0.00410	114	57.7 - 140.7
Toluene	2.12	mg/Kg	1	2.00	<0.00310	106	53.4 - 146.6
Ethylbenzene	2.11	mg/Kg	1	2.00	<0.00240	106	62.1 - 141.6
Xylene	6.33	mg/Kg	1	6.00	<0.00650	106	61.2 - 142.7

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.08	mg/Kg	1	2.00	<0.00410	104	57.7 - 140.7	9	20
Toluene	1.92	mg/Kg	1	2.00	<0.00310	96	53.4 - 146.6	10	20
Ethylbenzene	1.85	mg/Kg	1	2.00	<0.00240	92	62.1 - 141.6	13	20
Xylene	5.58	mg/Kg	1	6.00	<0.00650	93	61.2 - 142.7	13	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)	2.10	1.96	mg/Kg	1	2	105	98	62.7 - 139.6
4-Bromofluorobenzene (4-BFB)	2.07	2.01	mg/Kg	1	2	104	100	49.6 - 146.7

Matrix Spike (MS-1) Spiked Sample: 219023

QC Batch: 66643
Prep Batch: 56978

Date Analyzed: 2010-01-11
QC Preparation: 2010-01-11

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	19.5	mg/Kg	1	20.0	3.56	80	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	19.3	mg/Kg	1	20.0	3.56	79	10 - 198.3	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	1.76	mg/Kg	1	2	101	88	65.5 - 143
4-Bromofluorobenzene (4-BFB)	2.09	1.94	mg/Kg	1	2	104	97	58.6 - 140

Matrix Spike (MS-1) Spiked Sample: 219146

QC Batch: 66654
Prep Batch: 56980

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10700	mg/Kg	100	10000	961	97	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	10800	mg/Kg	100	10000	961	98	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: 219156

QC Batch: 66655
Prep Batch: 56981

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14900	mg/Kg	100	10000	4980	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	15000	mg/Kg	100	10000	4980	100	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 219166

QC Batch: 66656
Prep Batch: 56982

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14400	mg/Kg	100	10000	4980	94	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	14600	mg/Kg	100	10000	4980	96	85 - 115	1	20

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

Standard (CCV-1)

QC Batch: 66599

Date Analyzed: 2010-01-08

Analyzed By: kg

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	278	111	80 - 120	2010-01-08

Standard (CCV-2)

QC Batch: 66599

Date Analyzed: 2010-01-08

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	283	113	80 - 120	2010-01-08

Standard (CCV-1)

QC Batch: 66642

Date Analyzed: 2010-01-11

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	0.103	103	80 - 120	2010-01-11
Toluene		mg/Kg	0.100	0.0944	94	80 - 120	2010-01-11
Ethylbenzene		mg/Kg	0.100	0.0852	85	80 - 120	2010-01-11
Xylene		mg/Kg	0.300	0.258	86	80 - 120	2010-01-11

Standard (CCV-2)

QC Batch: 66642

Date Analyzed: 2010-01-11

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	0.104	104	80 - 120	2010-01-11
Toluene		mg/Kg	0.100	0.0946	95	80 - 120	2010-01-11
Ethylbenzene		mg/Kg	0.100	0.0903	90	80 - 120	2010-01-11
Xylene		mg/Kg	0.300	0.272	91	80 - 120	2010-01-11

Standard (CCV-3)

QC Batch: 66642

Date Analyzed: 2010-01-11

Analyzed By: AG

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.104	104	80 - 120	2010-01-11
Toluene		mg/Kg	0.100	0.0947	95	80 - 120	2010-01-11
Ethylbenzene		mg/Kg	0.100	0.0891	89	80 - 120	2010-01-11
Xylene		mg/Kg	0.300	0.268	89	80 - 120	2010-01-11

Standard (CCV-1)

QC Batch: 66643

Date Analyzed: 2010-01-11

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	2010-01-11

Standard (CCV-2)

QC Batch: 66643

Date Analyzed: 2010-01-11

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	1.15	115	80 - 120	2010-01-11

Standard (CCV-3)

QC Batch: 66643

Date Analyzed: 2010-01-11

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	1.03	103	80 - 120	2010-01-11

Standard (ICV-1)

QC Batch: 66654

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2010-01-12

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Standard (CCV-1)

QC Batch: 66654

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-01-12

Standard (ICV-1)

QC Batch: 66655

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2010-01-12

Standard (CCV-1)

QC Batch: 66655

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-01-12

Standard (ICV-1)

QC Batch: 66656

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.9	100	85 - 115	2010-01-12

Standard (CCV-1)

QC Batch: 66656

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-01-12

Order #: 10010735

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 Tavaraz						
PROJECT NO.: 114-400391		PROJECT NAME: COG / Edwards State #4						
LAB I.D. NUMBER	DATE TO GO	TIME	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	PRESERVATIVE METHOD			
					HCL	HNO3	ICE	NONE
219137	1/6		3 AH-1 0-1'	1			X	
138			1'-1.5'					
139			2'-2.5'					
140			3'-3.5'					
141			4'-4.5'					
142			5'-5.5'					
143			6'-6.5'					
144			7'-7.5'					
145			8'-8.5'					
146			9'-9.5'					

RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
<i>[Signature]</i>	1/16	13:30	<i>[Signature]</i>	1/16	15:30
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RECEIVING LABORATORY: Tetra	RECEIVED BY: (Signature)				
ADDRESS: Midland	RECEIVED BY: (Signature)				
CITY: Midland	RECEIVED BY: (Signature)				
STATE: TX	RECEIVED BY: (Signature)				
ZIP: 79701	RECEIVED BY: (Signature)				
PHONE: 682-4559	RECEIVED BY: (Signature)				

SAMPLED BY: (Print & Initial)	Date:	Time:	SAMPLE SHIPPED BY: (Circle)	Date:	Time:
ST	1/16	15:30	FEDEX	1/16	15:30
			BUS		
			UPS		
TETRA TECH CONTACT PERSON: Ike Tavaraz			AIRBILL #:		
			OTHER:		
			Results by:		
			RUSH Charges Authorized: Yes No		

PAH 8270	PCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCSP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/824	GC/MS Semi Vol. 8270/825	PCB's 8080/808	Post 808/608	Chloride	Gamma Spec.	Alpha Beta (M)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

REMARKS: **40c intact** **If total BTEX exceeds 50 run deeper samples** **If TPH exceeds 1000 mg/kg, run deeper samples**

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

Order #: 10010735

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 3

ANALYSIS REQUEST
(Circle or Specify Method No.)



TETRA TECH

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

CLIENT NAME: COG		SITE MANAGER: Ike Tovar	
PROJECT NO.: 114-6406391		PROJECT NAME: COG / Edwards Santa Fe La Co, NM	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
219147 1/2	2010		1 X AH-Z 0-1'
148			1-1.5'
149			2-2.5'
150			3-3.5'
151			4-4.5'
152			5-5.5'
153			6-6.5'
154			7-7.5'
155			8-8.5'
156			9-9.5'

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
[Signature]	11/10	12:34	[Signature]	11/10	15:00
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
RECEIVING LABORATORY:	ADDRESS:	CITY:	STATE:	ZIP:	PHONE:

REMARKS: If top 1 BTX exceeds 50 run deeper sample / If TPH exceeds 1000 mg/kg, run deeper sample	
SAMPLE CONDITION WHEN RECEIVED: 40°C intact	

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

PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	RCI	GC/MS Vol. 8240/8260/824	GC/MS Semi. Vol. 8270/825	PCB's 8080/808	Post. 808/608	Chloride	Gamma Spec.	Alpha Beta (At)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
BTX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)											

TETRA TECH CONTACT PERSON: Ike Tovar	
Results by:	RUSH Charges Authorized:
	Yes No

SAMPLED BY: (Print & Initial)	DATE	TIME
	11/10	15:00
SAMPLE SHIPPED BY: (Circle)	AIRBILL #	OTHER
FEDEX		
HAND DELIVERED		
UPS		

Summary Report

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

Report Date: March 15, 2010

Work Order: 10030920



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
224934	SB-1 0-1'	soil	2010-03-03	00:00	2010-03-09
224935	SB-1 2-3'	soil	2010-03-03	00:00	2010-03-09
224936	SB-1 4-5'	soil	2010-03-03	00:00	2010-03-09
224937	SB-1 6-7'	soil	2010-03-03	00:00	2010-03-09
224938	SB-1 10-11'	soil	2010-03-03	00:00	2010-03-09
224939	SB-1 15-16'	soil	2010-03-03	00:00	2010-03-09
224940	SB-1 20-21'	soil	2010-03-03	00:00	2010-03-09
224941	SB-2 0-1'	soil	2010-03-03	00:00	2010-03-09
224942	SB-2 2-3'	soil	2010-03-03	00:00	2010-03-09
224943	SB-2 4-5'	soil	2010-03-03	00:00	2010-03-09
224944	SB-2 6-7'	soil	2010-03-03	00:00	2010-03-09
224945	SB-2 10-11'	soil	2010-03-03	00:00	2010-03-09
224946	SB-2 15-16'	soil	2010-03-03	00:00	2010-03-09
224947	SB-2 20-21'	soil	2010-03-03	00:00	2010-03-09

Sample: 224934 - SB-1 0-1'

Param	Flag	Result	Units	RL
Chloride		834	mg/Kg	4.00

Sample: 224935 - SB-1 2-3'

Param	Flag	Result	Units	RL
Chloride		2230	mg/Kg	4.00

Sample: 224936 - SB-1 4-5'

Param	Flag	Result	Units	RL
Chloride		3450	mg/Kg	4.00

Sample: 224937 - SB-1 6-7'

Param	Flag	Result	Units	RL
Chloride		571	mg/Kg	4.00

Sample: 224938 - SB-1 10-11'

Param	Flag	Result	Units	RL
Chloride		2000	mg/Kg	4.00

Sample: 224939 - SB-1 15-16'

Param	Flag	Result	Units	RL
Chloride		942	mg/Kg	4.00

Sample: 224940 - SB-1 20-21'

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

Sample: 224941 - SB-2 0-1'

Param	Flag	Result	Units	RL
Chloride		201	mg/Kg	4.00

Sample: 224942 - SB-2 2-3'

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

Sample: 224943 - SB-2 4-5'

Param	Flag	Result	Units	RL
Chloride		510	mg/Kg	4.00

Sample: 224944 - SB-2 6-7'

Param	Flag	Result	Units	RL
Chloride		1220	mg/Kg	4.00

Sample: 224945 - SB-2 10-11'

Param	Flag	Result	Units	RL
Chloride		1870	mg/Kg	4.00

Sample: 224946 - SB-2 15-16'

Param	Flag	Result	Units	RL
Chloride		2160	mg/Kg	4.00

Sample: 224947 - SB-2 20-21'

Param	Flag	Result	Units	RL
Chloride		1530	mg/Kg	4.00



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
NCTRCA WFWB38444Y0909

DBE: VN 20657

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

Report Date: March 15, 2010

Work Order: 10030920



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

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
224934	SB-1 0-1'	soil	2010-03-03	00:00	2010-03-09
224935	SB-1 2-3'	soil	2010-03-03	00:00	2010-03-09
224936	SB-1 4-5'	soil	2010-03-03	00:00	2010-03-09
224937	SB-1 6-7'	soil	2010-03-03	00:00	2010-03-09
224938	SB-1 10-11'	soil	2010-03-03	00:00	2010-03-09
224939	SB-1 15-16'	soil	2010-03-03	00:00	2010-03-09
224940	SB-1 20-21'	soil	2010-03-03	00:00	2010-03-09
224941	SB-2 0-1'	soil	2010-03-03	00:00	2010-03-09
224942	SB-2 2-3'	soil	2010-03-03	00:00	2010-03-09
224943	SB-2 4-5'	soil	2010-03-03	00:00	2010-03-09

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
224944	SB-2 6-7'	soil	2010-03-03	00:00	2010-03-09
224945	SB-2 10-11'	soil	2010-03-03	00:00	2010-03-09
224946	SB-2 15-16'	soil	2010-03-03	00:00	2010-03-09
224947	SB-2 20-21'	soil	2010-03-03	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.

This report consists of a total of 10 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/Edwards State #4 were received by TraceAnalysis, Inc. on 2010-03-09 and assigned to work order 10030920. Samples for work order 10030920 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	58318	2010-03-11 at 09:50	68195	2010-03-12 at 15:26
Chloride (Titration)	SM 4500-Cl B	58319	2010-03-11 at 09:51	68196	2010-03-12 at 15:26

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 10030920 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: March 15, 2010
114-6400391

Work Order: 10030920
COG/Edwards State #4

Page Number: 4 of 10
Lea County, NM

Analytical Report

Sample: 224934 - SB-1 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 68195
Prep Batch: 58318

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-03-12
Sample Preparation: 2010-03-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		834	mg/Kg	50	4.00

Sample: 224935 - SB-1 2-3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 68195
Prep Batch: 58318

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-03-12
Sample Preparation: 2010-03-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2230	mg/Kg	100	4.00

Sample: 224936 - SB-1 4-5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 68195
Prep Batch: 58318

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-03-12
Sample Preparation: 2010-03-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3450	mg/Kg	100	4.00

Sample: 224937 - SB-1 6-7'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 68195
Prep Batch: 58318

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-03-12
Sample Preparation: 2010-03-11

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

continued ...

Report Date: March 15, 2010
114-6400391

Work Order: 10030920
COG/Edwards State #4

Page Number: 5 of 10
Lea County, NM

sample 224937 continued ...

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

Sample: 224938 - SB-1 10-11'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-03-12	Analyzed By: AR
QC Batch: 68195	Sample Preparation: 2010-03-11	Prepared By: AR
Prep Batch: 58318		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2000	mg/Kg	50	4.00

Sample: 224939 - SB-1 15-16'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-03-12	Analyzed By: AR
QC Batch: 68195	Sample Preparation: 2010-03-11	Prepared By: AR
Prep Batch: 58318		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		942	mg/Kg	50	4.00

Sample: 224940 - SB-1 20-21'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-03-12	Analyzed By: AR
QC Batch: 68195	Sample Preparation: 2010-03-11	Prepared By: AR
Prep Batch: 58318		

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

Report Date: March 15, 2010
114-6400391

Work Order: 10030920
COG/Edwards State #4

Page Number: 6 of 10
Lea County, NM

Sample: 224941 - SB-2 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 68195
Prep Batch: 58318

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-03-12
Sample Preparation: 2010-03-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		201	mg/Kg	50	4.00

Sample: 224942 - SB-2 2-3'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 68195
Prep Batch: 58318

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-03-12
Sample Preparation: 2010-03-11

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

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

Sample: 224943 - SB-2 4-5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 68195
Prep Batch: 58318

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-03-12
Sample Preparation: 2010-03-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		510	mg/Kg	50	4.00

Sample: 224944 - SB-2 6-7'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 68196
Prep Batch: 58319

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-03-12
Sample Preparation: 2010-03-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1220	mg/Kg	50	4.00

Report Date: March 15, 2010
114-6400391

Work Order: 10030920
COG/Edwards State #4

Page Number: 7 of 10
Lea County, NM

Sample: 224945 - SB-2 10-11'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1870	mg/Kg	50	4.00

Sample: 224946 - SB-2 15-16'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2160	mg/Kg	100	4.00

Sample: 224947 - SB-2 20-21'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1530	mg/Kg	50	4.00

Method Blank (1) QC Batch: 68195

QC Batch:	68195	Date Analyzed:	2010-03-12	Analyzed By:	AR
Prep Batch:	58318	QC Preparation:	2010-03-11	Prepared By:	AR

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

Report Date: March 15, 2010
114-6400391

Work Order: 10030920
COG/Edwards State #4

Page Number: 8 of 10
Lea County, NM

Method Blank (1) QC Batch: 68196

QC Batch: 68196
Prep Batch: 58319

Date Analyzed: 2010-03-12
QC Preparation: 2010-03-11

Analyzed By: AR
Prepared By: AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 68195
Prep Batch: 58318

Date Analyzed: 2010-03-12
QC Preparation: 2010-03-11

Analyzed By: AR
Prepared By: AR

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

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	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: 68196
Prep Batch: 58319

Date Analyzed: 2010-03-12
QC Preparation: 2010-03-11

Analyzed By: AR
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.

Matrix Spike (MS-1) Spiked Sample: 224943

QC Batch: 68195
Prep Batch: 58318

Date Analyzed: 2010-03-12
QC Preparation: 2010-03-11

Analyzed By: AR
Prepared By: AR

Report Date: March 15, 2010
114-6400391

Work Order: 10030920
COG/Edwards State #4

Page Number: 9 of 10
Lea County, NM

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10300	mg/Kg	100	10000	510	98	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10500	mg/Kg	100	10000	510	100	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
Prep Batch: 58319

Date Analyzed: 2010-03-12
QC Preparation: 2010-03-11

Analyzed By: AR
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.

Standard (ICV-1)

QC Batch: 68195

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	102	102	85 - 115	2010-03-12

Standard (CCV-1)

QC Batch: 68195

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	98.1	98	85 - 115	2010-03-12

Report Date: March 15, 2010
114-6400391

Work Order: 10030920
COG/Edwards State #4

Page Number: 10 of 10
Lea County, NM

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

Order #: 10030900

Analysis Request of Chain of Custody Record



TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 582-4559 • Fax (432) 582-3946

CLIENT NAME: COG		SITE MANAGER: Ike Tavaré	
PROJECT NO.: 1146400391		PROJECT NAME: COG / Edwards Site #41	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
224944	3/3		Len Co., NM
945	3/3		
946	3/3		
947	3/3		

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD				BTEX 8021B	TPH 8016 MOD. TX1005 (Ext. to C35)	PAH 8270	HCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	ROI	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					
								HCL	HNO3	ICE	NONE																						
224944	3/3		S		X	1																											
945	3/3		S		X	1																											
946	3/3		S		X	1																											
947	3/3		S		X	1																											

RELINQUISHED BY: (Signature)	Date: 3/3/10	Time: 10:10	RECEIVED BY: (Signature)	Date: 3/3/10	Time: 10:10
RELINQUISHED BY: (Signature)	Date: 3/3/10	Time: 10:10	RECEIVED BY: (Signature)	Date: 3/3/10	Time: 10:10
RELINQUISHED BY: (Signature)	Date: 3/3/10	Time: 10:10	RECEIVED BY: (Signature)	Date: 3/3/10	Time: 10:10
RECEIVING LABORATORY:	TRACE				
ADDRESS:	716 C in tact				
CITY:	Midland	STATE:	TX	ZIP:	
CONTACT:	PHONE: DATE: TIME:				
SAMPLE CONDITION WHEN RECEIVED:					
716 C in tact					

SAMPLER BY: (Print & Initial)		Date: 3/3/10	Time: 10:10
SAMPLE SHIPPED BY: (Circle)		AIRBILL #:	
FEDEX		BUS	
HAND DELIVERED		OTHER:	
TETRA TECH CONTACT PERSON:		Results by:	
Ike Tavaré		RUSH Charges Authorized:	
		Yes No	

Summary Report

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

Report Date: April 30, 2010

Work Order: 10042609



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
229531	SB-2 15'	soil	2010-04-22	00:00	2010-04-23
229532	SB-2 20'	soil	2010-04-22	00:00	2010-04-23
229533	SB-2 25'	soil	2010-04-22	00:00	2010-04-23
229534	SB-2 30'	soil	2010-04-22	00:00	2010-04-23

Sample: 229531 - SB-2 15'

Param	Flag	Result	Units	RL
Chloride		2640	mg/Kg	4.00

Sample: 229532 - SB-2 20'

Param	Flag	Result	Units	RL
Chloride		311	mg/Kg	4.00

Sample: 229533 - SB-2 25'

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

Sample: 229534 - SB-2 30'

Report Date: April 30, 2010

Work Order: 10042609

Page Number: 2 of 2

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



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

Certifications

WBENC: 237019

HUB: 1752439743100-86536
NCTRCA WFWB38444Y0909

DBE: VN 20657

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: April 30, 2010

Work Order: 10042609



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

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
229531	SB-2 15'	soil	2010-04-22	00:00	2010-04-23
229532	SB-2 20'	soil	2010-04-22	00:00	2010-04-23
229533	SB-2 25'	soil	2010-04-22	00:00	2010-04-23
229534	SB-2 30'	soil	2010-04-22	00:00	2010-04-23

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

Michael Abel

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

Standard Flags

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

Case Narrative

Samples for project COG/Edwards State #4 were received by TraceAnalysis, Inc. on 2010-04-23 and assigned to work order 10042609. Samples for work order 10042609 were received intact at a temperature of 24.0 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	59411	2010-04-26 at 09:11	69514	2010-04-29 at 12:16

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 10042609 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: April 30, 2010
114-6400391

Work Order: 10042609
COG/Edwards State #4

Page Number: 4 of 6
Lea County, NM

Analytical Report

Sample: 229531 - SB-2 15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-04-29	Analyzed By:	AR
QC Batch:	69514	Sample Preparation:	2010-04-28	Prepared By:	AR
Prep Batch:	59411				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2640	mg/Kg	100	4.00

Sample: 229532 - SB-2 20'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-04-29	Analyzed By:	AR
QC Batch:	69514	Sample Preparation:	2010-04-28	Prepared By:	AR
Prep Batch:	59411				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		311	mg/Kg	50	4.00

Sample: 229533 - SB-2 25'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-04-29	Analyzed By:	AR
QC Batch:	69514	Sample Preparation:	2010-04-28	Prepared By:	AR
Prep Batch:	59411				

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

Sample: 229534 - SB-2 30'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-04-29	Analyzed By:	AR
QC Batch:	69514	Sample Preparation:	2010-04-28	Prepared By:	AR
Prep Batch:	59411				

continued ...

Report Date: April 30, 2010
114-6400391

Work Order: 10042609
COG/Edwards State #4

Page Number: 5 of 6
Lea County, NM

sample 229534 continued ...

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

Method Blank (1) QC Batch: 69514

QC Batch: 69514
Prep Batch: 59411

Date Analyzed: 2010-04-29
QC Preparation: 2010-04-26

Analyzed By: AR
Prepared By: AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 69514
Prep Batch: 59411

Date Analyzed: 2010-04-29
QC Preparation: 2010-04-26

Analyzed By: AR
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.

Matrix Spike (MS-1) Spiked Sample: 229534

QC Batch: 69514
Prep Batch: 59411

Date Analyzed: 2010-04-29
QC Preparation: 2010-04-26

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9720	mg/Kg	100	10000	<218	97	85 - 115

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

Report Date: April 30, 2010
114-6400391

Work Order: 10042609
COG/Edwards State #4

Page Number: 6 of 6
Lea County, NM

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	9870	mg/Kg	100	10000	<218	99	85 - 115	2	20

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

Standard (ICV-1)

QC Batch: 69514

Date Analyzed: 2010-04-29

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	103	103	85 - 115	2010-04-29

Standard (CCV-1)

QC Batch: 69514

Date Analyzed: 2010-04-29

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	96.6	97	85 - 115	2010-04-29

Analysis Request of Chain of Custody Record



TETRA TECH

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

[illegible]

REMARKS:	x All tests Midland
----------	---------------------

SAMPLE CONDITION WHEN RECEIVED:
24.0°C intact

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

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Edward State #4 Tank Battery
Company:	COG Operating LLC
Section, Township and Range	Unit K - Sec 16 - T-17S - R-32E
Lease Number:	30-025-38730
County:	Lea County
GPS:	32.83196° N, 103.77201° W
Surface Owner:	State
Mineral Owner:	
Directions:	From the intersection of Hwy 529 and Co Rd. 126 (Maljamar Rd.) turn north on Co Rd. 126 and travel 2.4m, turn left travel 0.5m, turn left travel 0.1m to site.

Release Data:

Date Released:	12/3/2009
Type Release:	Produced water
Source of Contamination:	Water Tank
Fluid Released:	23 barrels
Fluids Recovered:	20 barrels

Official Communication:

Name:	Pat Ellis	Kim Dorey
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) 685-4332	(432) 631-0348
Fax:	(432) 684-7137	
Email:	pellis@conchoresources.com	kim.dorey@tetrattech.com

Ranking Criteria

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

HOBBS OCD

JUL 01 2011

RECEIVED

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



TETRA TECH

April 14, 2011

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

HOBBS OCD

JUL 01 2011

RECEIVED

Re: Closure Report for the COG Operating LLC., Edwards State #4 Tank Battery, Unit K, Section 16, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Edwards State #4 Tank Battery, Unit K, Section 16, Township 17 South, Range 32 East, Lea County, New Mexico. (Site). The spill site coordinates are N 32.83196°, W 103.77201°. 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 December 3, 2009, and released approximately twenty-three (23) barrels of produced water for a water tank due to a power problem and the failure of an alarm. To alleviate the problem, COG personnel repaired both problems. Twenty (20) barrels of standing fluids were recovered. The spill was contained within the berm of the tank battery. The initial C-141 form is enclosed in Appendix C.

Groundwater

The United States Geological Survey (USGS) Well Reports did not list any wells in Section 16. According to the NMOCD Lea County groundwater map, the average depth to groundwater in this area is greater than 100' below surface. The Water Well Data is shown in Appendix A.



Regulatory

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

Soil Assessment and Analytical Results

On January 6, 2010, Tetra Tech personnel inspected and sampled the spill area which measured approximately 60' x 45'. A total of three (3) auger holes (AH-1 through AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were below the TPH and BTEX RRAL concentrations. Elevated chloride concentrations were detected for AH-1 (9-9.5') of 961 mg/kg, AH-2 (9-9.5') of 4,980 mg/kg, and AH-3 (9-9.5') of 3,730 mg/kg.

On March 3, 2010 and April 22, 2010, Tetra Tech personnel supervised the installation of two soil boring (SB-1 and SB-2) and collected samples for laboratory analysis, in order to delineate the chloride impact. Due to access issues, SB-1 was installed between AH-2 and AH-3. Referring to Table 1, the chloride concentrations dropped to <200 mg/kg at 20-21' below surface. Additionally, SB-2 was installed near AH-1 and had chloride concentrations of <200 mg/kg at 25' and 30' below surface. Based on the assessment, a work plan was submitted to the NMOCD for approval.



TETRA TECH

Remedial Activities

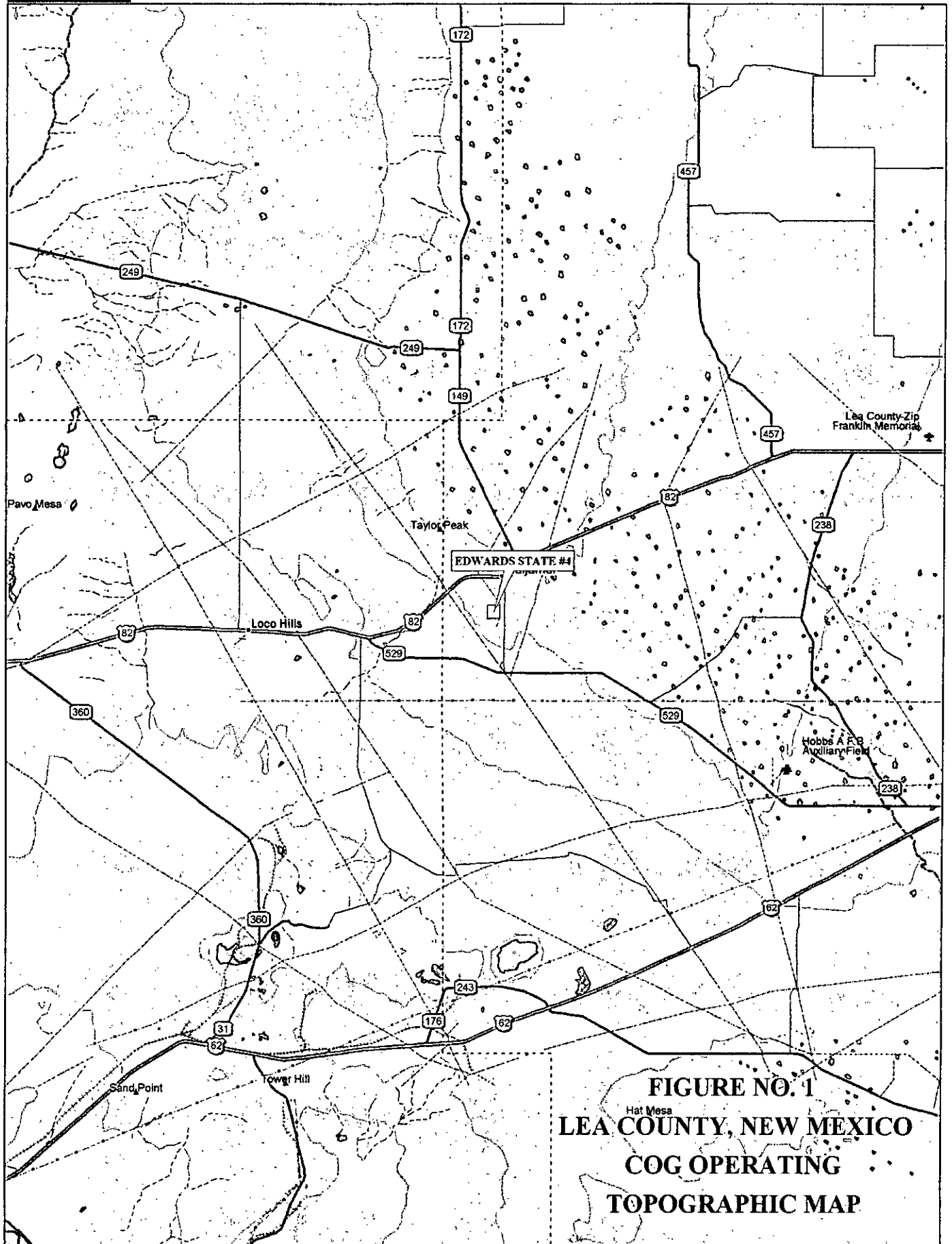
On January 19-24, 2011, Tetra Tech personnel supervised the excavation of the site. The proposed excavation depths were not achieved, as proposed in the work plan, due to the sandy formation and tank stability. The excavation measured approximately 10' x 30' on both sides of the water tank inside the facility berms, with excavation depth of 4' below grade surface. Once the excavation was completed, a 40 mil liner was installed and backfilled with clean material to surface grade.

Approximately 160 yards³ of soil were removed and hauled to CRI Inc. for proper disposal. Photos of the excavation and liner are attached. The excavation depths are highlighted on Table 1 and shown on Figure 4. Based on the remedial activities performed, COG request closure of the site. The final C-141 is enclosed in Appendix C.

Respectfully submitted,
TETRA TECH

Kim Dorey
Staff II Geologist

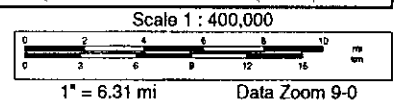
cc: Pat Ellis – COG



Data use subject to license.

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www.delorme.com



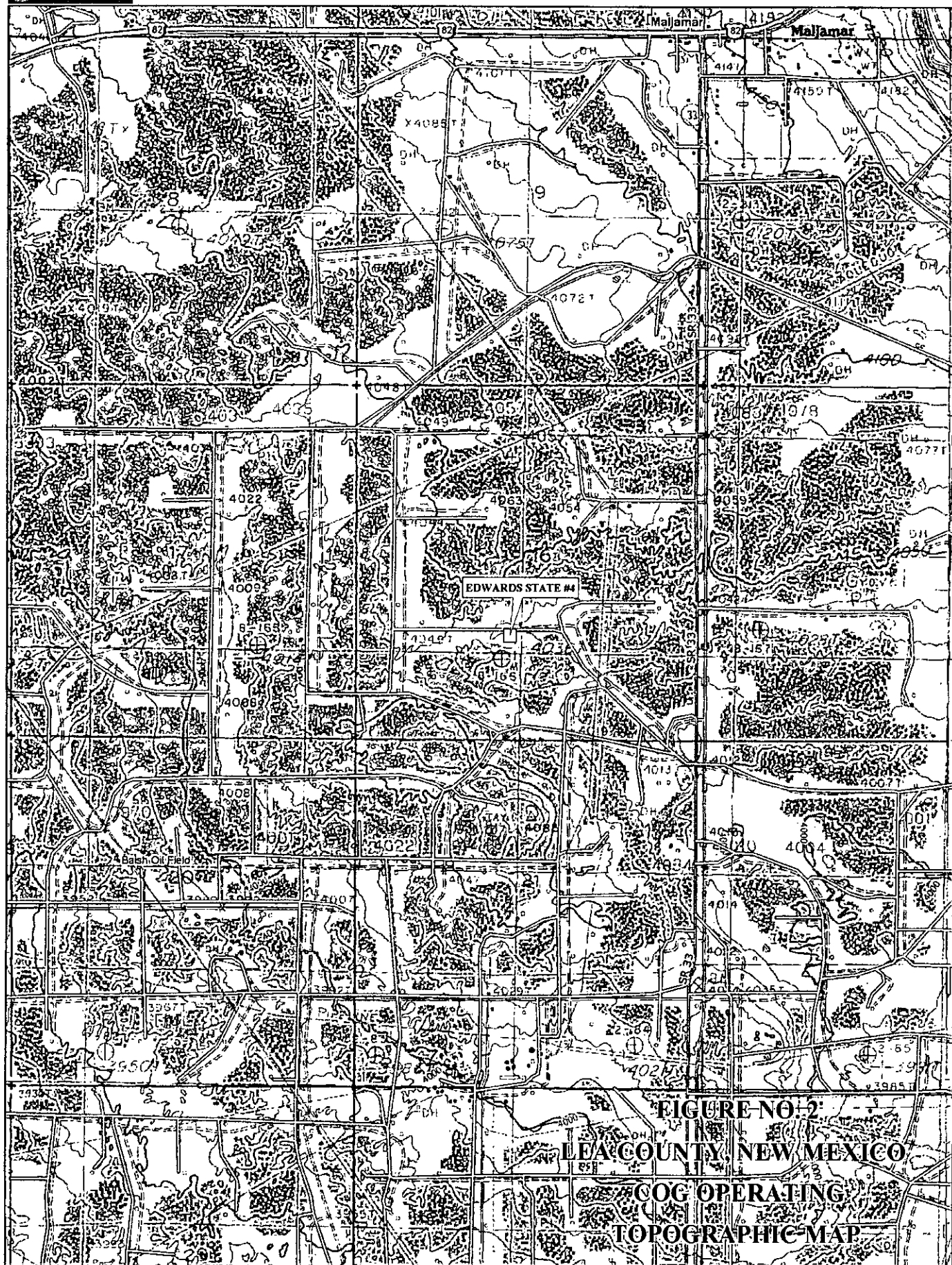


FIGURE NO. 2
LEA COUNTY, NEW MEXICO
COG OPERATING
TOPOGRAPHIC MAP

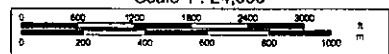
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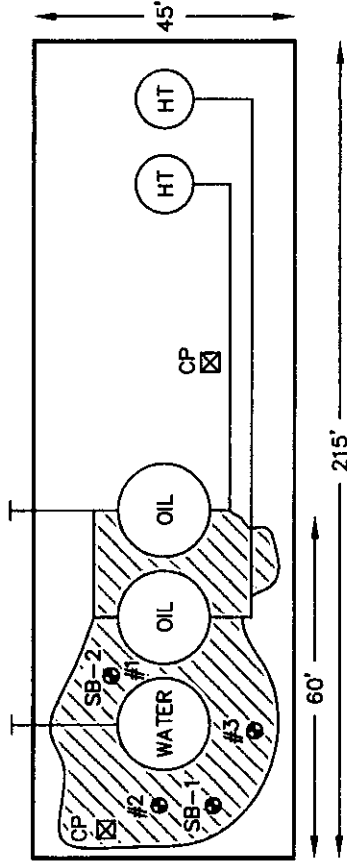
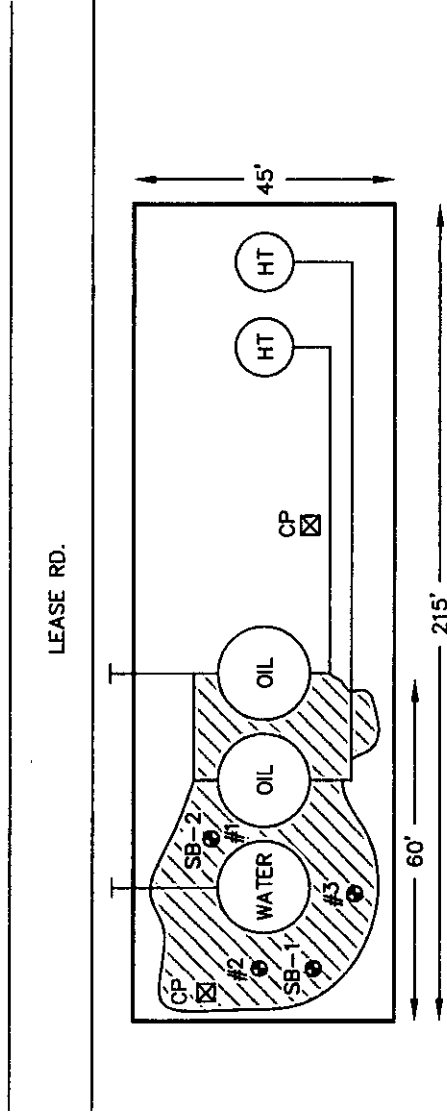
www.delorme.com



Scale 1: 24,000



1" = 2,000.0 ft Data Zoom 13-1



 SPILL AREA
 SAMPLE LOCATIONS
 SOIL BORING LOCATIONS

DATE: 1/14/09	OWN. BY: JJ	FILE: H:\COPY\8400381 EX-108 STUJ 44
------------------	----------------	--

SOIL BORING LOCATIONS

NOT TO SCALE



PASTURE

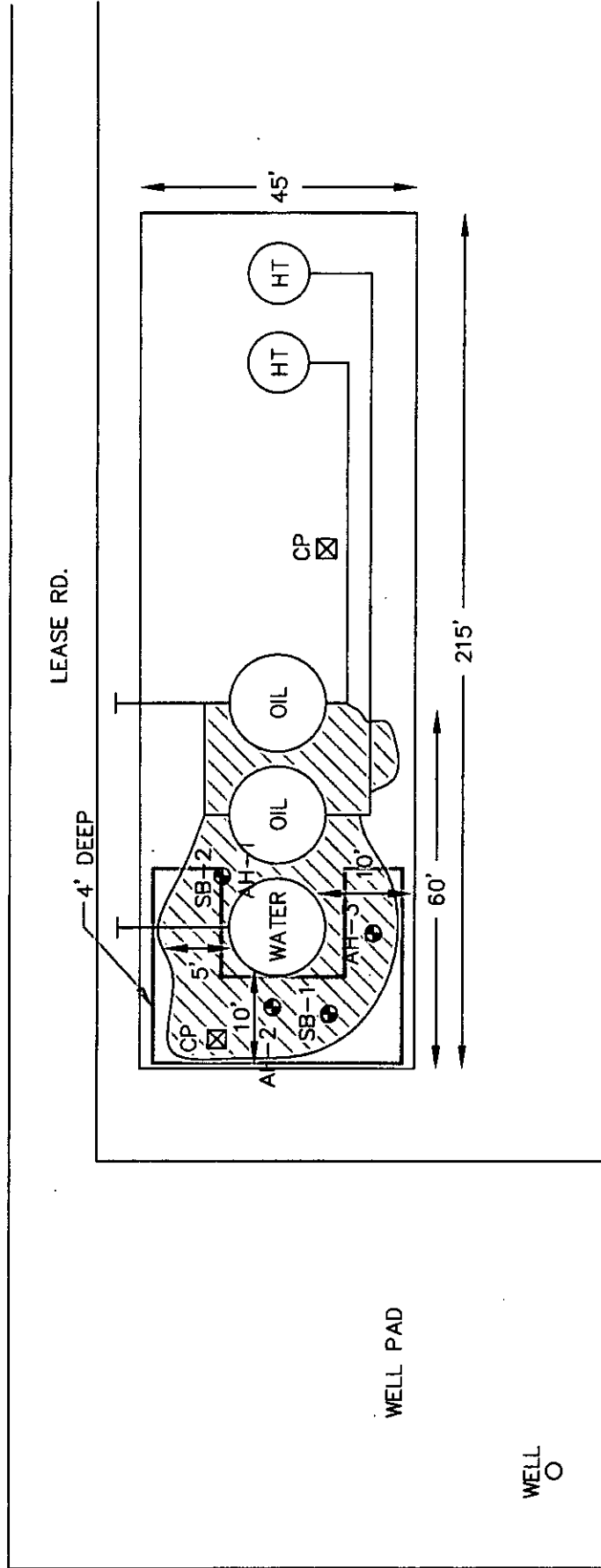


FIGURE NO. 4

LEA COUNTY, NEW MEXICO
COG OPERATING LLC
EDWARDS STATE #4 TB
TETRA TECH, INC. MIDLAND, TEXAS

DATE:	04/14/2011
DRILLER:	IN
FILE:	IN
BY:	IN
REVISION:	IN
EDWARDS STATE #4	

NOT TO SCALE

- LINER INSTALLATION
- ▣ SPILL AREA
- AUGER HOLE LOCATIONS
- SOIL BORING LOCATIONS

Table 1
COG Operating
Edwards State #4
Lea County, NM

[illegible]

Table 1
COG Operating
Edwards State #4
Lea County, NM

Sample ID	Sample Date	Depth (ft)	Soil Status		TPH (mg/kg)				BTEX				Chloride
			In-Situ	Removed	DRO	GRO	Total		Benzene	Toluene	Ethylbenzene	Xylene	
AH-2	1/6/10	0-1'		X	140	392	532		0.175	0.365	1.92	6.28	1,430
		1-1.5'		X	-	-	-		-	-	-	-	2,370
		2-2.5'		X	-	-	-		-	-	-	-	5,290
		3-3.5'		X	-	-	-		-	-	-	-	6,920
		4-4.5'		X	-	-	-		-	-	-	-	3,570
		5-5.5'	X		-	-	-		-	-	-	-	3,010
		6-6.5'	X		-	-	-		-	-	-	-	2,930
		7-7.5'	X		-	-	-		-	-	-	-	3,580
		8-8.5'	X		-	-	-		-	-	-	-	4,030
		9-9.5'	X		-	-	-		-	-	-	-	4,980
SB-1	3/3/10	0-1'		X	-	-	-		-	-	-	-	834
		2-3'		X	-	-	-		-	-	-	-	2,230
		4-5'		X	-	-	-		-	-	-	-	3,450
		6-7'	X		-	-	-		-	-	-	-	571
		10-11'	X		-	-	-		-	-	-	-	2,000
		15-16'	X		-	-	-		-	-	-	-	942
		20-21'	X		-	-	-		-	-	-	-	<200
AH-3	1/6/10	0-1'		X	<50.0	<1.00	<50.0		<0.0100	<0.0100	<0.0100	<0.0100	6,890
		1-1.5'		X	-	-	-		-	-	-	-	<200
		2-2.5'		X	-	-	-		-	-	-	-	<200
		3-3.5'		X	-	-	-		-	-	-	-	<200
		4-4.5'		X	-	-	-		-	-	-	-	<200
		5-5.5'	X		-	-	-		-	-	-	-	<200
		6-6.5'	X		-	-	-		-	-	-	-	243
		7-7.5'	X		-	-	-		-	-	-	-	872
		8-8.5'	X		-	-	-		-	-	-	-	1,070
		9-9.5'	X		-	-	-		-	-	-	-	3,730

BEB Below Excavation Bottom
(-) Not Analyzed
Excavation depths
40 mil plastic liner



Final depth of excavation near SB-1



Site backfilled with clean material and berm rebuilt



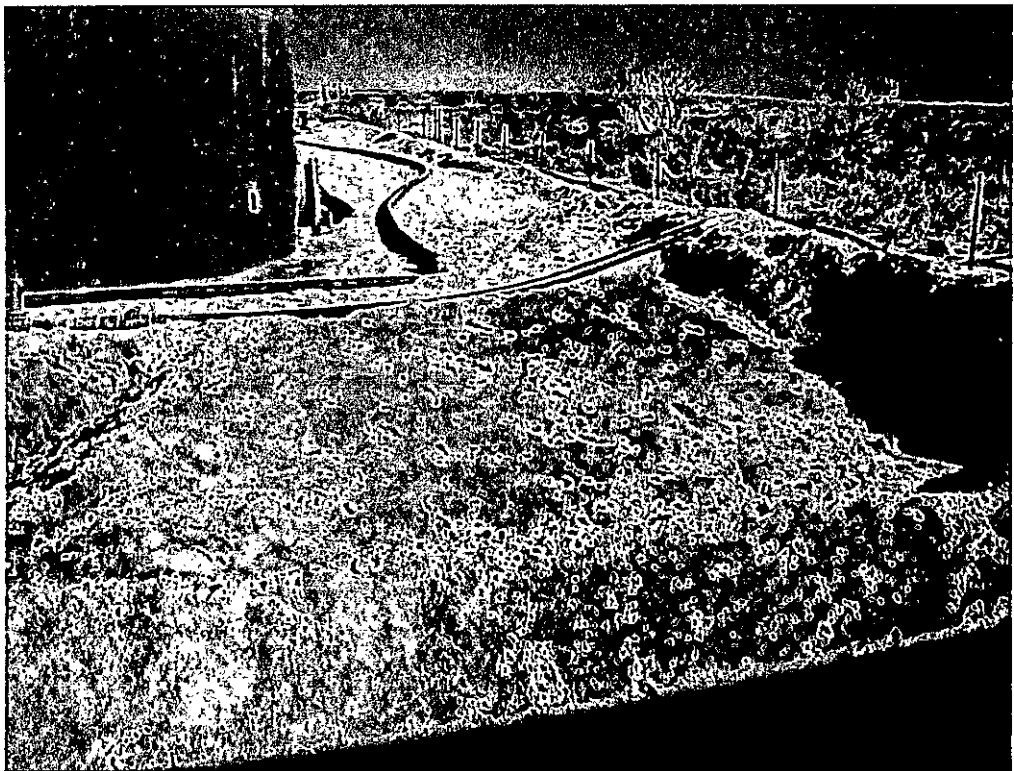
Excavation near SB-2



Excavation near SB 1



Liner installed near AH-2 and AH-3



Site backfilled with clean material

Water Well Data
Average Depth to Groundwater (ft)
COG - Edwards State #4 Tank Battery
Lea County, New Mexico

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

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

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

16 South			32 East		
6	5	4	3	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
					260

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

16 South			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

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

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

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

Summary Report

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

Report Date: January 13, 2010

Work Order: 10010735



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
219137	AH-1 0-1'	soil	2010-01-06	00:00	2010-01-07
219138	AH-1 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219139	AH-1 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219140	AH-1 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219141	AH-1 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219142	AH-1 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219143	AH-1 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219144	AH-1 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219145	AH-1 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219146	AH-1 9'-9.5'	soil	2010-01-06	00:00	2010-01-07
219147	AH-2 0-1'	soil	2010-01-06	00:00	2010-01-07
219148	AH-2 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219149	AH-2 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219150	AH-2 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219151	AH-2 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219152	AH-2 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219153	AH-2 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219154	AH-2 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219155	AH-2 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219156	AH-2 9'-9.5'	soil	2010-01-06	00:00	2010-01-07
219157	AH-3 0-1'	soil	2010-01-06	00:00	2010-01-07
219158	AH-3 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219159	AH-3 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219160	AH-3 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219161	AH-3 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219162	AH-3 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219163	AH-3 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219164	AH-3 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219165	AH-3 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219166	AH-3 9'-9.5'	soil	2010-01-06	00:00	2010-01-07

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296

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

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
219137 - AH-1 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	4.01
219147 - AH-2 0-1'	0.175	0.365	1.92	6.28	140	392
219157 - AH-3 0-1'	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00

Sample: 219137 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		2110	mg/Kg	4.00

Sample: 219138 - AH-1 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		1020	mg/Kg	4.00

Sample: 219139 - AH-1 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		2920	mg/Kg	4.00

Sample: 219140 - AH-1 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		3230	mg/Kg	4.00

Sample: 219141 - AH-1 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		2610	mg/Kg	4.00

Sample: 219142 - AH-1 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		2050	mg/Kg	4.00

Sample: 219143 - AH-1 6'-6.5'

continued ...

sample 219143 continued . . .

Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		1390	mg/Kg	4.00

Sample: 219144 - AH-1 7'-7.5'

Param	Flag	Result	Units	RL
Chloride		2080	mg/Kg	4.00

Sample: 219145 - AH-1 8'-8.5'

Param	Flag	Result	Units	RL
Chloride		1000	mg/Kg	4.00

Sample: 219146 - AH-1 9'-9.5'

Param	Flag	Result	Units	RL
Chloride		961	mg/Kg	4.00

Sample: 219147 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		1430	mg/Kg	4.00

Sample: 219148 - AH-2 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		2370	mg/Kg	4.00

Sample: 219149 - AH-2 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		5290	mg/Kg	4.00

Sample: 219150 - AH-2 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		6920	mg/Kg	4.00

Sample: 219151 - AH-2 4'-4.5'

Param	Flag	Result	Units	RL
Chloride		3570	mg/Kg	4.00

Sample: 219152 - AH-2 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		3010	mg/Kg	4.00

Sample: 219153 - AH-2 6'-6.5'

Param	Flag	Result	Units	RL
Chloride		2930	mg/Kg	4.00

Sample: 219154 - AH-2 7'-7.5'

Param	Flag	Result	Units	RL
Chloride		3580	mg/Kg	4.00

Sample: 219155 - AH-2 8'-8.5'

Param	Flag	Result	Units	RL
Chloride		4030	mg/Kg	4.00

Sample: 219156 - AH-2 9'-9.5'

Param	Flag	Result	Units	RL
Chloride		4980	mg/Kg	4.00

Sample: 219157 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		6890	mg/Kg	4.00

Sample: 219158 - AH-3 1'-1.5'

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

Sample: 219159 - AH-3 2'-2.5'

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

Sample: 219160 - AH-3 3'-3.5'

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

Sample: 219161 - AH-3 4'-4.5'

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

Sample: 219162 - AH-3 5'-5.5'

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

Sample: 219163 - AH-3 6'-6.5'

Param	Flag	Result	Units	RL
Chloride		243	mg/Kg	4.00

Sample: 219164 - AH-3 7'-7.5'

Param	Flag	Result	Units	RL
Chloride		872	mg/Kg	4.00

Sample: 219165 - AH-3 8'-8.5'

Param	Flag	Result	Units	RL
Chloride		1070	mg/Kg	4.00

Sample: 219166 - AH-3 9'-9.5'

Param	Flag	Result	Units	RL
Chloride		3730	mg/Kg	4.00



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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019

HUB: 1752439743100-86536
NCTRCA WFWB38444Y0909

DBE: VN 20657

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

Report Date: January 13, 2010

Work Order: 10010735



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

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
219137	AH-1 0'-1'	soil	2010-01-06	00:00	2010-01-07
219138	AH-1 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219139	AH-1 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219140	AH-1 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219141	AH-1 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219142	AH-1 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219143	AH-1 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219144	AH-1 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219145	AH-1 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219146	AH-1 9'-9.5'	soil	2010-01-06	00:00	2010-01-07

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
219147	AH-2 0-1'	soil	2010-01-06	00:00	2010-01-07
219148	AH-2 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219149	AH-2 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219150	AH-2 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219151	AH-2 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219152	AH-2 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219153	AH-2 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219154	AH-2 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219155	AH-2 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219156	AH-2 9'-9.5'	soil	2010-01-06	00:00	2010-01-07
219157	AH-3 0-1'	soil	2010-01-06	00:00	2010-01-07
219158	AH-3 1'-1.5'	soil	2010-01-06	00:00	2010-01-07
219159	AH-3 2'-2.5'	soil	2010-01-06	00:00	2010-01-07
219160	AH-3 3'-3.5'	soil	2010-01-06	00:00	2010-01-07
219161	AH-3 4'-4.5'	soil	2010-01-06	00:00	2010-01-07
219162	AH-3 5'-5.5'	soil	2010-01-06	00:00	2010-01-07
219163	AH-3 6'-6.5'	soil	2010-01-06	00:00	2010-01-07
219164	AH-3 7'-7.5'	soil	2010-01-06	00:00	2010-01-07
219165	AH-3 8'-8.5'	soil	2010-01-06	00:00	2010-01-07
219166	AH-3 9'-9.5'	soil	2010-01-06	00:00	2010-01-07

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 24 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/Edwards State #4 were received by TraceAnalysis, Inc. on 2010-01-07 and assigned to work order 10010735. Samples for work order 10010735 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
BTEX	S 8021B	56978	2010-01-11 at 10:00	66642	2010-01-11 at 10:07
Chloride (Titration)	SM 4500-Cl B	56980	2010-01-11 at 08:41	66654	2010-01-12 at 12:49
Chloride (Titration)	SM 4500-Cl B	56981	2010-01-11 at 08:42	66655	2010-01-12 at 12:49
Chloride (Titration)	SM 4500-Cl B	56982	2010-01-11 at 08:42	66656	2010-01-12 at 12:50
TPH DRO - NEW	Mod. 8015B	56947	2010-01-08 at 13:30	66599	2010-01-08 at 13:30
TPH GRO	S 8015B	56978	2010-01-11 at 10:00	66643	2010-01-11 at 10:34

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 10010735 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: January 13, 2010
114-6400391

Work Order: 10010735
COG/Edwards State #4

Page Number: 4 of 24
Lea County, NM

Analytical Report

Sample: 219137 - AH-1 0-1'

Laboratory: Midland
Analysis: BTEX
QC Batch: 66642
Prep Batch: 56978

Analytical Method: S 8021B
Date Analyzed: 2010-01-11
Sample Preparation: 2010-01-11

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.06	mg/Kg	1	2.00	103	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		2.05	mg/Kg	1	2.00	102	43.1 - 158.4

Sample: 219137 - AH-1 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66654
Prep Batch: 56980

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2110	mg/Kg	100	4.00

Sample: 219137 - AH-1 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 66599
Prep Batch: 56947

Analytical Method: Mod. 8015B
Date Analyzed: 2010-01-08
Sample Preparation: 2010-01-08

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

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

Report Date: January 13, 2010
114-6400391

Work Order: 10010735
COG/Edwards State #4

Page Number: 5 of 24
Lea County, NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		107	mg/Kg	1	100	107	70 - 130

Sample: 219137 - AH-1 0-1'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 66643
Prep Batch: 56978

Analytical Method: S 8015B
Date Analyzed: 2010-01-11
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		4.01	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.05	mg/Kg	1	2.00	102	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.05	mg/Kg	1	2.00	102	61.7 - 131.1

Sample: 219138 - AH-1 1'-1.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66654
Prep Batch: 56980

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1020	mg/Kg	50	4.00

Sample: 219139 - AH-1 2'-2.5'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 66654
Prep Batch: 56980

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-01-12
Sample Preparation: 2010-01-11

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2920	mg/Kg	100	4.00

Report Date: January 13, 2010
114-6400391

Work Order: 10010735
COG/Edwards State #4

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Lea County, NM

Sample: 219140 - AH-1 3'-3.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66654	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56980				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3230	mg/Kg	100	4.00

Sample: 219141 - AH-1 4'-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66654	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56980				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2610	mg/Kg	100	4.00

Sample: 219142 - AH-1 5'-5.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66654	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56980				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2050	mg/Kg	50	4.00

Sample: 219143 - AH-1 6'-6.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66654	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56980				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1390	mg/Kg	50	4.00

Report Date: January 13, 2010
114-6400391

Work Order: 10010735
COG/Edwards State #4

Page Number: 7 of 24
Lea County, NM

Sample: 219144 - AH-1 7'-7.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66654	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56980				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2080	mg/Kg	50	4.00

Sample: 219145 - AH-1 8'-8.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66654	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56980				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1000	mg/Kg	50	4.00

Sample: 219146 - AH-1 9'-9.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66654	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56980				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		961	mg/Kg	50	4.00

Sample: 219147 - AH-2 0-1'

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2010-01-11	Analyzed By:	AG
QC Batch:	66642	Sample Preparation:	2010-01-11	Prepared By:	AG
Prep Batch:	56978				

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		0.175	mg/Kg	5	0.0100
Toluene		0.365	mg/Kg	5	0.0100

continued ...

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sample 219147 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Ethylbenzene		1.92	mg/Kg	5	0.0100
Xylene		6.28	mg/Kg	5	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		4.48	mg/Kg	5	5.00	90	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		6.81	mg/Kg	5	5.00	136	43.1 - 158.4

Sample: 219147 - AH-2 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 66655 Date Analyzed: 2010-01-12 Analyzed By: AR
Prep Batch: 56981 Sample Preparation: 2010-01-11 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1430	mg/Kg	50	4.00

Sample: 219147 - AH-2 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 66599 Date Analyzed: 2010-01-08 Analyzed By: kg
Prep Batch: 56947 Sample Preparation: 2010-01-08 Prepared By: kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		140	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		112	mg/Kg	1	100	112	70 - 130

Sample: 219147 - AH-2 0-1'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 66643 Date Analyzed: 2010-01-11 Analyzed By: AG
Prep Batch: 56978 Sample Preparation: 2010-01-11 Prepared By: AG

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Parameter	Flag	RL Result	Units	Dilution	RL
GRO		392	mg/Kg	5	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		4.43	mg/Kg	5	5.00	89	65.3 - 145
4-Bromofluorobenzene (4-BFB)	¹	6.68	mg/Kg	5	5.00	134	61.7 - 131.1

Sample: 219148 - AH-2 1'-1.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-01-12	Analyzed By: AR
QC Batch: 66655	Sample Preparation: 2010-01-11	Prepared By: AR
Prep Batch: 56981		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2370	mg/Kg	100	4.00

Sample: 219149 - AH-2 2'-2.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-01-12	Analyzed By: AR
QC Batch: 66655	Sample Preparation: 2010-01-11	Prepared By: AR
Prep Batch: 56981		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5290	mg/Kg	100	4.00

Sample: 219150 - AH-2 3'-3.5'

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-01-12	Analyzed By: AR
QC Batch: 66655	Sample Preparation: 2010-01-11	Prepared By: AR
Prep Batch: 56981		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6920	mg/Kg	100	4.00

¹ High surrogate recovery due to peak interference.

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Sample: 219151 - AH-2 4'-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3570	mg/Kg	100	4.00

Sample: 219152 - AH-2 5'-5.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3010	mg/Kg	100	4.00

Sample: 219153 - AH-2 6'-6.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2930	mg/Kg	100	4.00

Sample: 219154 - AH-2 7'-7.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3580	mg/Kg	100	4.00

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Sample: 219155 - AH-2 8'-8.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4030	mg/Kg	100	4.00

Sample: 219156 - AH-2 9'-9.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66655	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56981				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4980	mg/Kg	100	4.00

Sample: 219157 - AH-3 0-1'

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2010-01-11	Analyzed By:	AG
QC Batch:	66642	Sample Preparation:	2010-01-11	Prepared By:	AG
Prep Batch:	56978				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	64.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.99	mg/Kg	1	2.00	100	43.1 - 158.4

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Sample: 219157 - AH-3 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6890	mg/Kg	100	4.00

Sample: 219157 - AH-3 0-1'

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-01-08	Analyzed By:	kg
QC Batch:	66599	Sample Preparation:	2010-01-08	Prepared By:	kg
Prep Batch:	56947				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		111	mg/Kg	1	100	111	70 - 130

Sample: 219157 - AH-3 0-1'

Laboratory:	Midland	Analytical Method:	S 8015B	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-01-11	Analyzed By:	AG
QC Batch:	66643	Sample Preparation:	2010-01-11	Prepared By:	AG
Prep Batch:	56978				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.05	mg/Kg	1	2.00	102	65.3 - 145
4-Bromofluorobenzene (4-BFB)		2.09	mg/Kg	1	2.00	104	61.7 - 131.1

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Sample: 219158 - AH-3 1'-1.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

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

Sample: 219159 - AH-3 2'-2.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

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

Sample: 219160 - AH-3 3'-3.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

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

Sample: 219161 - AH-3 4'-4.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-01-12	Analyzed By:	AR
QC Batch:	66656	Sample Preparation:	2010-01-11	Prepared By:	AR
Prep Batch:	56982				

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

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Sample: 219162 - AH-3 5'-5.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	66656	Date Analyzed:	2010-01-12
Prep Batch:	56982	Sample Preparation:	2010-01-11
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Sample: 219163 - AH-3 6'-6.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	66656	Date Analyzed:	2010-01-12
Prep Batch:	56982	Sample Preparation:	2010-01-11
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		243	mg/Kg	50	4.00

Sample: 219164 - AH-3 7'-7.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	66656	Date Analyzed:	2010-01-12
Prep Batch:	56982	Sample Preparation:	2010-01-11
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		872	mg/Kg	50	4.00

Sample: 219165 - AH-3 8'-8.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	66656	Date Analyzed:	2010-01-12
Prep Batch:	56982	Sample Preparation:	2010-01-11
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1070	mg/Kg	50	4.00

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Sample: 219166 - AH-3 9'-9.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 66656

Prep Batch: 56982

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-01-12

Sample Preparation: 2010-01-11

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3730	mg/Kg	50	4.00

Method Blank (1) QC Batch: 66599

QC Batch: 66599

Prep Batch: 56947

Date Analyzed: 2010-01-08

QC Preparation: 2010-01-08

Analyzed By: kg

Prepared By: kg

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

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

Method Blank (1) QC Batch: 66642

QC Batch: 66642

Prep Batch: 56978

Date Analyzed: 2010-01-11

QC Preparation: 2010-01-11

Analyzed By: AG

Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.11	mg/Kg	1	2.00	106	64.9 - 142.7
4-Bromofluorobenzene (4-BFB)		1.98	mg/Kg	1	2.00	99	43.9 - 141.9

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Method Blank (1) QC Batch: 66643

QC Batch: 66643
Prep Batch: 56978

Date Analyzed: 2010-01-11
QC Preparation: 2010-01-11

Analyzed By: AG
Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.07	mg/Kg	1	2.00	104	66.2 - 145
4-Bromofluorobenzene (4-BFB)		1.92	mg/Kg	1	2.00	96	62 - 120.5

Method Blank (1) QC Batch: 66654

QC Batch: 66654
Prep Batch: 56980

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 66655

QC Batch: 66655
Prep Batch: 56981

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 66656

QC Batch: 66656
Prep Batch: 56982

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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

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Laboratory Control Spike (LCS-1)

QC Batch: 66599
Prep Batch: 56947

Date Analyzed: 2010-01-08
QC Preparation: 2010-01-08

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	280	mg/Kg	1	250	<5.86	112	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	266	mg/Kg	1	250	<5.86	106	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-Tricosane	123	120	mg/Kg	1	100	123	120	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 66642
Prep Batch: 56978

Date Analyzed: 2010-01-11
QC Preparation: 2010-01-11

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.20	mg/Kg	1	2.00	<0.00410	110	75.4 - 115.7
Toluene	2.02	mg/Kg	1	2.00	<0.00310	101	78.4 - 113.6
Ethylbenzene	1.94	mg/Kg	1	2.00	<0.00240	97	76 - 114.2
Xylene	5.83	mg/Kg	1	6.00	<0.00650	97	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.16	mg/Kg	1	2.00	<0.00410	108	75.4 - 115.7	2	20
Toluene	2.00	mg/Kg	1	2.00	<0.00310	100	78.4 - 113.6	1	20
Ethylbenzene	1.94	mg/Kg	1	2.00	<0.00240	97	76 - 114.2	0	20
Xylene	5.84	mg/Kg	1	6.00	<0.00650	97	76.9 - 113.6	0	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)	2.02	1.96	mg/Kg	1	2.00	101	98	65 - 142.9
4-Bromofluorobenzene (4-BFB)	2.00	1.98	mg/Kg	1	2.00	100	99	43.8 - 144.9

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Laboratory Control Spike (LCS-1)

QC Batch: 66643
Prep Batch: 56978

Date Analyzed: 2010-01-11
QC Preparation: 2010-01-11

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.7	mg/Kg	1	20.0	<0.396	84	52.5 - 114.3

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	17.5	mg/Kg	1	20.0	<0.396	88	52.5 - 114.3	5	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.94	1.90	mg/Kg	1	2.00	97	95	66.2 - 148.7
4-Bromofluorobenzene (4-BFB)	1.88	1.87	mg/Kg	1	2.00	94	94	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch: 66654
Prep Batch: 56980

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.5	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	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: 66655
Prep Batch: 56981

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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

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

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.5	mg/Kg	1	100	<2.18	100	85 - 115	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: 66656
Prep Batch: 56982

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

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

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

Param	LCS 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.

Matrix Spike (MS-1) Spiked Sample: 219157

QC Batch: 66599
Prep Batch: 56947

Date Analyzed: 2010-01-08
QC Preparation: 2010-01-08

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	303	mg/Kg	1	250	<5.86	121	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	304	mg/Kg	1	250	<5.86	122	35.2 - 167.1	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	104	107	mg/Kg	1	100	104	107	70 - 130

Matrix Spike (MS-1) Spiked Sample: 219157

QC Batch: 66642
Prep Batch: 56978

Date Analyzed: 2010-01-11
QC Preparation: 2010-01-11

Analyzed By: AG
Prepared By: AG

Report Date: January 13, 2010
114-6400391

Work Order: 10010735
COG/Edwards State #4

Page Number: 20 of 24
Lea County, NM

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.27	mg/Kg	1	2.00	<0.00410	114	57.7 - 140.7
Toluene	2.12	mg/Kg	1	2.00	<0.00310	106	53.4 - 146.6
Ethylbenzene	2.11	mg/Kg	1	2.00	<0.00240	106	62.1 - 141.6
Xylene	6.33	mg/Kg	1	6.00	<0.00650	106	61.2 - 142.7

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.08	mg/Kg	1	2.00	<0.00410	104	57.7 - 140.7	9	20
Toluene	1.92	mg/Kg	1	2.00	<0.00310	96	53.4 - 146.6	10	20
Ethylbenzene	1.85	mg/Kg	1	2.00	<0.00240	92	62.1 - 141.6	13	20
Xylene	5.58	mg/Kg	1	6.00	<0.00650	93	61.2 - 142.7	13	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)	2.10	1.96	mg/Kg	1	2	105	98	62.7 - 139.6
4-Bromofluorobenzene (4-BFB)	2.07	2.01	mg/Kg	1	2	104	100	49.6 - 146.7

Matrix Spike (MS-1) Spiked Sample: 219023

QC Batch: 66643
Prep Batch: 56978

Date Analyzed: 2010-01-11
QC Preparation: 2010-01-11

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	19.5	mg/Kg	1	20.0	3.56	80	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	19.3	mg/Kg	1	20.0	3.56	79	10 - 198.3	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	1.76	mg/Kg	1	2	101	88	65.5 - 143
4-Bromofluorobenzene (4-BFB)	2.09	1.94	mg/Kg	1	2	104	97	58.6 - 140

Matrix Spike (MS-1) Spiked Sample: 219146

QC Batch: 66654
Prep Batch: 56980

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

Report Date: January 13, 2010
114-6400391

Work Order: 10010735
COG/Edwards State #4

Page Number: 21 of 24
Lea County, NM

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10700	mg/Kg	100	10000	961	97	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	10800	mg/Kg	100	10000	961	98	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: 219156

QC Batch: 66655
Prep Batch: 56981

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14900	mg/Kg	100	10000	4980	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	15000	mg/Kg	100	10000	4980	100	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 219166

QC Batch: 66656
Prep Batch: 56982

Date Analyzed: 2010-01-12
QC Preparation: 2010-01-11

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14400	mg/Kg	100	10000	4980	94	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	14600	mg/Kg	100	10000	4980	96	85 - 115	1	20

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

Standard (CCV-1)

QC Batch: 66599

Date Analyzed: 2010-01-08

Analyzed By: kg

Report Date: January 13, 2010
114-6400391

Work Order: 10010735
COG/Edwards State #4

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Lea County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	278	111	80 - 120	2010-01-08

Standard (CCV-2)

QC Batch: 66599

Date Analyzed: 2010-01-08

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	283	113	80 - 120	2010-01-08

Standard (CCV-1)

QC Batch: 66642

Date Analyzed: 2010-01-11

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	0.103	103	80 - 120	2010-01-11
Toluene		mg/Kg	0.100	0.0944	94	80 - 120	2010-01-11
Ethylbenzene		mg/Kg	0.100	0.0852	85	80 - 120	2010-01-11
Xylene		mg/Kg	0.300	0.258	86	80 - 120	2010-01-11

Standard (CCV-2)

QC Batch: 66642

Date Analyzed: 2010-01-11

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	0.104	104	80 - 120	2010-01-11
Toluene		mg/Kg	0.100	0.0946	95	80 - 120	2010-01-11
Ethylbenzene		mg/Kg	0.100	0.0903	90	80 - 120	2010-01-11
Xylene		mg/Kg	0.300	0.272	91	80 - 120	2010-01-11

Standard (CCV-3)

QC Batch: 66642

Date Analyzed: 2010-01-11

Analyzed By: AG

Report Date: January 13, 2010
114-6400391

Work Order: 10010735
COG/Edwards State #4

Page Number: 23 of 24
Lea County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.104	104	80 - 120	2010-01-11
Toluene		mg/Kg	0.100	0.0947	95	80 - 120	2010-01-11
Ethylbenzene		mg/Kg	0.100	0.0891	89	80 - 120	2010-01-11
Xylene		mg/Kg	0.300	0.268	89	80 - 120	2010-01-11

Standard (CCV-1)

QC Batch: 66643

Date Analyzed: 2010-01-11

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	2010-01-11

Standard (CCV-2)

QC Batch: 66643

Date Analyzed: 2010-01-11

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	1.15	115	80 - 120	2010-01-11

Standard (CCV-3)

QC Batch: 66643

Date Analyzed: 2010-01-11

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	1.03	103	80 - 120	2010-01-11

Standard (ICV-1)

QC Batch: 66654

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2010-01-12

Report Date: January 13, 2010
114-6400391

Work Order: 10010735
COG/Edwards State #4

Page Number: 24 of 24
Lea County, NM

Standard (CCV-1)

QC Batch: 66654

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-01-12

Standard (ICV-1)

QC Batch: 66655

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2010-01-12

Standard (CCV-1)

QC Batch: 66655

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-01-12

Standard (ICV-1)

QC Batch: 66656

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.9	100	85 - 115	2010-01-12

Standard (CCV-1)

QC Batch: 66656

Date Analyzed: 2010-01-12

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-01-12

PAGE: 1 OF: 3

Analysis Request of Chain of Custody Record

ANALYSIS REQUEST
(Circle or Specify Method No.)

TETRA TECH

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

LAB I.D. NUMBER	DATE TO 10	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD
CLIENT NAME: COG			SITE MANAGER: Ike Taveraz						
PROJECT NO.: 114-440391			PROJECT NAME: COG / Edwards Site #4						
			Lm Co., NM						

SITE MANAGER:
Ike Tavaroz

PROJECT NAME:	COG / Edwards State	to 4
	Lin Co, NM	

SAMPLE IDENTIFICATION

[illegible]

RELINQUISHED BY: (Signature) <i>[Signature]</i>	Date: <u>11/17/07</u>	Time: <u>1:30</u>	RECEIVED BY: (Signature) <i>[Signature]</i>	Date: <u>11/17/07</u>	Time: <u>15:30</u>
RELINQUISHED BY: (Signature) _____	Date: _____	Time: _____	RECEIVED BY: (Signature) _____	Date: _____	Time: _____
RELINQUISHED BY: (Signature) _____	Date: _____	Time: _____	RECEIVED BY: (Signature) _____	Date: _____	Time: _____
RECEIVING LABORATORY: <u>Trak</u>	RECEIVED BY: (Signature) _____				
ADDRESS: <u>1701 1st St</u>	CITY: <u>San Francisco</u> STATE: <u>CA</u> ZIP: _____				
CONTACT: _____	PHONE: _____ DATE: _____ TIME: _____				

RELINQUISHED BY: (Signature) _____

RELINQUISHED BY: (Signature) _____

RELINQUISHED BY: (Signature) _____

Date: _____

Date: _____

Date: _____

Time: _____

Time: _____

Time: _____

SAMPLED BY: (Print & Initial) ST

SAMPLE SHIPPED BY: (Circle) BUS

FEDEX (AND DELIVERED)

TETRA TECH CONTACT PERSON: Ike Iavarone

Date: 11/16/07

Time: _____

AIRBILL #: _____

OTHER: _____

Results by: _____

RUSH Charges Authorized: _____

Yes _____ No _____

SAMPLE CONDITION WHEN RECEIVED:	40°C intact	REMARKS:	
		If total BTEX exceeds 50 run deeper samples / If TPH exceeds 1000 mg/Kg, run deeper samples	
		Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.	

Order #: 10010735

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 3

ANALYSIS REQUEST
(Circle or Specify Method No.)



TETRA TECH

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

CLIENT NAME: COG		SITE MANAGER: Ike Tavaraz	
PROJECT NO.: 114-6406391		PROJECT NAME: COG / Edwards State #4	
LAB I.D. NUMBER		SAMPLE IDENTIFICATION	
DATE	TIME	DATE	TIME
2010			
219147 1/2		1	X AH-2 0-1'
148			1'-1.5'
149			2'-2.5'
150			3'-3.5'
151			4'-4.5'
152			5'-5.5'
153			6'-6.5'
154			7'-7.5'
155			8'-8.5'
156			9'-9.5'

RELINQUISHED BY: (Signature)	Date: 1/10	RECEIVED BY: (Signature)	Date: 1/10
RELINQUISHED BY: (Signature)	Date: 1/10	RECEIVED BY: (Signature)	Date: 1/10
RELINQUISHED BY: (Signature)	Date: 1/10	RECEIVED BY: (Signature)	Date: 1/10
RECEIVING LABORATORY:	STATE: TX	ZIP: 79705	DATE: 1/10
ADDRESS:			
CITY:			
CONTACT:			

SAMPLE CONDITION WHEN RECEIVED:
4.0°C intact

REMARKS:
If 1001 BTEX exceeds SD run deeper sample / If TPH exceeds 1000 mg/kg, run deeper sample

TPH 8015 MOD. TX1005 (Ext. to C35)	☒
PAH 8270	☒
PCRA Metals Ag As Ba Cd Cr Pb Hg Se	☒
TCLP Metals Ag As Ba Cd Cr Pb Hg Se	☒
TCLP Volatiles	☒
TCLP Semi Volatiles	☒
GC/MS Vol. 8240/8260/824	☒
GC/MS Semi. Vol. 8270/625	☒
PCB's 8080/608	☒
Pest. 808/608	☒
Chloride	☒
Gamma Spec.	☒
Alpha Beta (Air)	☒
PLM (Asbestos)	☒
Major Anions/Cations, pH, TDS	☒

SAMPLED BY: (Print & Initial) **ST** Date: 1/10

TIME: 13:30

SAMPLE SHIPPED BY: (Circle) **BUS**

FEDEX ☒ HAND DELIVERED ☒ UPS ☒

OTHER: ☐

TETRA TECH CONTACT PERSON: **Ike Tavaraz**

Results by: **Ike Tavaraz**

RUSH Charges Authorized: ☐

Yes No

Summary Report

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

Report Date: March 15, 2010

Work Order: 10030920



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
224934	SB-1 0-1'	soil	2010-03-03	00:00	2010-03-09
224935	SB-1 2-3'	soil	2010-03-03	00:00	2010-03-09
224936	SB-1 4-5'	soil	2010-03-03	00:00	2010-03-09
224937	SB-1 6-7'	soil	2010-03-03	00:00	2010-03-09
224938	SB-1 10-11'	soil	2010-03-03	00:00	2010-03-09
224939	SB-1 15-16'	soil	2010-03-03	00:00	2010-03-09
224940	SB-1 20-21'	soil	2010-03-03	00:00	2010-03-09
224941	SB-2 0-1'	soil	2010-03-03	00:00	2010-03-09
224942	SB-2 2-3'	soil	2010-03-03	00:00	2010-03-09
224943	SB-2 4-5'	soil	2010-03-03	00:00	2010-03-09
224944	SB-2 6-7'	soil	2010-03-03	00:00	2010-03-09
224945	SB-2 10-11'	soil	2010-03-03	00:00	2010-03-09
224946	SB-2 15-16'	soil	2010-03-03	00:00	2010-03-09
224947	SB-2 20-21'	soil	2010-03-03	00:00	2010-03-09

Sample: 224934 - SB-1 0-1'

Param	Flag	Result	Units	RL
Chloride		834	mg/Kg	4.00

Sample: 224935 - SB-1 2-3'

Param	Flag	Result	Units	RL
Chloride		2230	mg/Kg	4.00

Sample: 224936 - SB-1 4-5'

Param	Flag	Result	Units	RL
Chloride		3450	mg/Kg	4.00

Sample: 224937 - SB-1 6-7'

Param	Flag	Result	Units	RL
Chloride		571	mg/Kg	4.00

Sample: 224938 - SB-1 10-11'

Param	Flag	Result	Units	RL
Chloride		2000	mg/Kg	4.00

Sample: 224939 - SB-1 15-16'

Param	Flag	Result	Units	RL
Chloride		942	mg/Kg	4.00

Sample: 224940 - SB-1 20-21'

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

Sample: 224941 - SB-2 0-1'

Param	Flag	Result	Units	RL
Chloride		201	mg/Kg	4.00

Sample: 224942 - SB-2 2-3'

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

Sample: 224943 - SB-2 4-5'

Param	Flag	Result	Units	RL
Chloride		510	mg/Kg	4.00

Sample: 224944 - SB-2 6-7'

Param	Flag	Result	Units	RL
Chloride		1220	mg/Kg	4.00

Sample: 224945 - SB-2 10-11'

Param	Flag	Result	Units	RL
Chloride		1870	mg/Kg	4.00

Sample: 224946 - SB-2 15-16'

Param	Flag	Result	Units	RL
Chloride		2160	mg/Kg	4.00

Sample: 224947 - SB-2 20-21'

Param	Flag	Result	Units	RL
Chloride		1530	mg/Kg	4.00



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1296
200 East Sunset Road, Suite E El Paso, Texas 79922 888•598•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
NCTRCA WFWB38444Y0909

DBE: VN 20657

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

Report Date: March 15, 2010

Work Order: 10030920



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

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
224934	SB-1 0-1'	soil	2010-03-03	00:00	2010-03-09
224935	SB-1 2-3'	soil	2010-03-03	00:00	2010-03-09
224936	SB-1 4-5'	soil	2010-03-03	00:00	2010-03-09
224937	SB-1 6-7'	soil	2010-03-03	00:00	2010-03-09
224938	SB-1 10-11'	soil	2010-03-03	00:00	2010-03-09
224939	SB-1 15-16'	soil	2010-03-03	00:00	2010-03-09
224940	SB-1 20-21'	soil	2010-03-03	00:00	2010-03-09
224941	SB-2 0-1'	soil	2010-03-03	00:00	2010-03-09
224942	SB-2 2-3'	soil	2010-03-03	00:00	2010-03-09
224943	SB-2 4-5'	soil	2010-03-03	00:00	2010-03-09

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
224944	SB-2 6-7'	soil	2010-03-03	00:00	2010-03-09
224945	SB-2 10-11'	soil	2010-03-03	00:00	2010-03-09
224946	SB-2 15-16'	soil	2010-03-03	00:00	2010-03-09
224947	SB-2 20-21'	soil	2010-03-03	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.

This report consists of a total of 10 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/Edwards State #4 were received by TraceAnalysis, Inc. on 2010-03-09 and assigned to work order 10030920. Samples for work order 10030920 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	58318	2010-03-11 at 09:50	68195	2010-03-12 at 15:26
Chloride (Titration)	SM 4500-Cl B	58319	2010-03-11 at 09:51	68196	2010-03-12 at 15:26

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 10030920 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: March 15, 2010
114-6400391

Work Order: 10030920
COG/Edwards State #4

Page Number: 4 of 10
Lea County, NM

Analytical Report

Sample: 224934 - SB-1 0-1'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-03-12	Analyzed By:	AR
QC Batch:	68195	Sample Preparation:	2010-03-11	Prepared By:	AR
Prep Batch:	58318				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		834	mg/Kg	50	4.00

Sample: 224935 - SB-1 2-3'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-03-12	Analyzed By:	AR
QC Batch:	68195	Sample Preparation:	2010-03-11	Prepared By:	AR
Prep Batch:	58318				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2230	mg/Kg	100	4.00

Sample: 224936 - SB-1 4-5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-03-12	Analyzed By:	AR
QC Batch:	68195	Sample Preparation:	2010-03-11	Prepared By:	AR
Prep Batch:	58318				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3450	mg/Kg	100	4.00

Sample: 224937 - SB-1 6-7'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-03-12	Analyzed By:	AR
QC Batch:	68195	Sample Preparation:	2010-03-11	Prepared By:	AR
Prep Batch:	58318				

continued ...

Report Date: March 15, 2010
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sample 224937 continued ...

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

Sample: 224938 - SB-1 10-11'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 68195 Date Analyzed: 2010-03-12 Analyzed By: AR
Prep Batch: 58318 Sample Preparation: 2010-03-11 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2000	mg/Kg	50	4.00

Sample: 224939 - SB-1 15-16'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 68195 Date Analyzed: 2010-03-12 Analyzed By: AR
Prep Batch: 58318 Sample Preparation: 2010-03-11 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		942	mg/Kg	50	4.00

Sample: 224940 - SB-1 20-21'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 68195 Date Analyzed: 2010-03-12 Analyzed By: AR
Prep Batch: 58318 Sample Preparation: 2010-03-11 Prepared By: AR

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

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Sample: 224941 - SB-2 0-1'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	68195	Date Analyzed:	2010-03-12
Prep Batch:	58318	Sample Preparation:	2010-03-11
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		201	mg/Kg	50	4.00

Sample: 224942 - SB-2 2-3'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	68195	Date Analyzed:	2010-03-12
Prep Batch:	58318	Sample Preparation:	2010-03-11
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Sample: 224943 - SB-2 4-5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	68195	Date Analyzed:	2010-03-12
Prep Batch:	58318	Sample Preparation:	2010-03-11
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		510	mg/Kg	50	4.00

Sample: 224944 - SB-2 6-7'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1220	mg/Kg	50	4.00

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Sample: 224945 - SB-2 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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1870	mg/Kg	50	4.00

Sample: 224946 - SB-2 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		2160	mg/Kg	100	4.00

Sample: 224947 - SB-2 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		1530	mg/Kg	50	4.00

Method Blank (1) QC Batch: 68195

QC Batch: 68195 Date Analyzed: 2010-03-12 Analyzed By: AR
Prep Batch: 58318 QC Preparation: 2010-03-11 Prepared By: AR

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

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Method Blank (1) QC Batch: 68196

QC Batch: 68196
Prep Batch: 58319

Date Analyzed: 2010-03-12
QC Preparation: 2010-03-11

Analyzed By: AR
Prepared By: AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 68195
Prep Batch: 58318

Date Analyzed: 2010-03-12
QC Preparation: 2010-03-11

Analyzed By: AR
Prepared By: AR

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

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	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: 68196
Prep Batch: 58319

Date Analyzed: 2010-03-12
QC Preparation: 2010-03-11

Analyzed By: AR
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.

Matrix Spike (MS-1) Spiked Sample: 224943

QC Batch: 68195
Prep Batch: 58318

Date Analyzed: 2010-03-12
QC Preparation: 2010-03-11

Analyzed By: AR
Prepared By: AR

Report Date: March 15, 2010
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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10300	mg/Kg	100	10000	510	98	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10500	mg/Kg	100	10000	510	100	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
Prep Batch: 58319

Date Analyzed: 2010-03-12
QC Preparation: 2010-03-11

Analyzed By: AR
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.

Standard (ICV-1)

QC Batch: 68195

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	102	102	85 - 115	2010-03-12

Standard (CCV-1)

QC Batch: 68195

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	98.1	98	85 - 115	2010-03-12

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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

Summary Report

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

Report Date: April 30, 2010

Work Order: 10042609



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
229531	SB-2 15'	soil	2010-04-22	00:00	2010-04-23
229532	SB-2 20'	soil	2010-04-22	00:00	2010-04-23
229533	SB-2 25'	soil	2010-04-22	00:00	2010-04-23
229534	SB-2 30'	soil	2010-04-22	00:00	2010-04-23

Sample: 229531 - SB-2 15'

Param	Flag	Result	Units	RL
Chloride		2640	mg/Kg	4.00

Sample: 229532 - SB-2 20'

Param	Flag	Result	Units	RL
Chloride		311	mg/Kg	4.00

Sample: 229533 - SB-2 25'

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

Sample: 229534 - SB-2 30'

Report Date: April 30, 2010

Work Order: 10042609

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



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•688•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
NCTRCA WFWB38444Y0909

DBE: VN 20657

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

Report Date: April 30, 2010

Work Order: 10042609



Project Location: Lea County, NM
Project Name: COG/Edwards State #4
Project Number: 114-6400391

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
229531	SB-2 15'	soil	2010-04-22	00:00	2010-04-23
229532	SB-2 20'	soil	2010-04-22	00:00	2010-04-23
229533	SB-2 25'	soil	2010-04-22	00:00	2010-04-23
229534	SB-2 30'	soil	2010-04-22	00:00	2010-04-23

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 6 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/Edwards State #4 were received by TraceAnalysis, Inc. on 2010-04-23 and assigned to work order 10042609. Samples for work order 10042609 were received intact at a temperature of 24.0 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	59411	2010-04-26 at 09:11	69514	2010-04-29 at 12:16

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 10042609 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: April 30, 2010
114-6400391

Work Order: 10042609
COG/Edwards State #4

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Analytical Report

Sample: 229531 - SB-2 15'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-04-29	Analyzed By:	AR
QC Batch:	69514	Sample Preparation:	2010-04-28	Prepared By:	AR
Prep Batch:	59411				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2640	mg/Kg	100	4.00

Sample: 229532 - SB-2 20'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-04-29	Analyzed By:	AR
QC Batch:	69514	Sample Preparation:	2010-04-28	Prepared By:	AR
Prep Batch:	59411				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		311	mg/Kg	50	4.00

Sample: 229533 - SB-2 25'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-04-29	Analyzed By:	AR
QC Batch:	69514	Sample Preparation:	2010-04-28	Prepared By:	AR
Prep Batch:	59411				

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

Sample: 229534 - SB-2 30'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-04-29	Analyzed By:	AR
QC Batch:	69514	Sample Preparation:	2010-04-28	Prepared By:	AR
Prep Batch:	59411				

continued ...

Report Date: April 30, 2010
114-6400391

Work Order: 10042609
COG/Edwards State #4

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sample 229534 continued ...

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

Method Blank (1) QC Batch: 69514

QC Batch: 69514
Prep Batch: 59411

Date Analyzed: 2010-04-29
QC Preparation: 2010-04-26

Analyzed By: AR
Prepared By: AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 69514
Prep Batch: 59411

Date Analyzed: 2010-04-29
QC Preparation: 2010-04-26

Analyzed By: AR
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.

Matrix Spike (MS-1) Spiked Sample: 229534

QC Batch: 69514
Prep Batch: 59411

Date Analyzed: 2010-04-29
QC Preparation: 2010-04-26

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9720	mg/Kg	100	10000	<218	97	85 - 115

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

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	9870	mg/Kg	100	10000	<218	99	85 - 115	2	20

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

Standard (ICV-1)

QC Batch: 69514

Date Analyzed: 2010-04-29

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	103	103	85 - 115	2010-04-29

Standard (CCV-1)

QC Batch: 69514

Date Analyzed: 2010-04-29

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	96.6	97	85 - 115	2010-04-29

Order #: 10042609

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 Tavares				
PROJECT NO.: 114-640 0391		PROJECT NAME: COG / Edwards State #4				
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION
531	4/22		S	X	SB-2 15'	
532	4/22		S	X	SB-2 20'	
533	4/22		S	X	SB-2 25'	
534	4/22		S	X	SB-2 30'	
PRESERVATIVE METHOD						
HCL						
HNO3						
ICE						
NONE						
NUMBER OF CONTAINERS						
1						
FILTERED (Y/N)						
BTX 80218						
TPH 8015 MOD. TX1006 (Ext. to C35)						
PAH 8270						
RCRA Metals Ag As Ba Cd Cr Pb Hg Se						
TCLP Metals Ag As Ba Cd Cr Pb Hg Se						
TCLP Volatiles						
TCLP Semi Volatiles						
RCI						
GC/MS Vol. 8240/8260/624						
GC/MS Semi. Vol. 8270/625						
PCB's 8080/808						
Pest. 808/808						
Chloride						
Gamma Spec.						
Alpha Beta (Air)						
PLM (Asbestos)						
Major Anions/Cations, pH, TDS						

RELINQUISHED BY: (Signature)	Date: 4/22/00	RECEIVED BY: (Signature)	Date: 4/23/00
RELINQUISHED BY: (Signature)	Date: 4/22/00	RECEIVED BY: (Signature)	Date: 4/23/00
RELINQUISHED BY: (Signature)	Date: 4/22/00	RECEIVED BY: (Signature)	Date: 4/23/00
RECEIVING LABORATORY:	STATE: TX	ZIP: 79701	DATE: 4/23/00
CITY: Midland	PHONE: (432) 682-4559	REMARKS: 24.0°C intact	
SAMPLE CONDITION WHEN RECEIVED: 24.0°C intact			