

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

PLW J1010339309
2474
Form C-141
Revised October 10, 2003
Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	Bates SWD	Facility Type	Pipeline

Surface Owner: Federal	Mineral Owner	Lease No.
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LOCATION OF RELEASE

Unit Letter	Section 19	Township 19S	Range 33E	Feet from the 1650	North/South Line North	Feet from the 1980	East/West Line West	County Lea
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Latitude 32 38.634 Longitude 103 42.108

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 30bbls	Volume Recovered 5bbls
Source of Release Pipeline	Date and Hour of Occurrence 03/29/2010	Date and Hour of Discovery 03/29/2010 8:00a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Paul Evans—BLM Geoffrey Leking—OCD Larry Johnson—OCD	
By Whom? Pat Ellis	Date and Hour 03/30/2010 9:50a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

A poly weld broke on a 6X4 swedge. The pipe has been repaired and put back in service.

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. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

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

Signature:		<u>OIL CONSERVATION DIVISION</u>	
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:	
Date:		Attached ☐	
Phone: (432) 686-3023			

* Attach Additional Sheets If Necessary

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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED

APR 15 2011

HOBBSUCD

Form C-141
Revised October 10, 2003

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side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Bates SWD	Facility Type	Pipeline

Surface Owner	Federal	Mineral Owner		Lease No.	
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LOCATION OF RELEASE

Unit Letter	Section 19	Township 19S	Range 33E	Feet from the 1650	North/South Line North	Feet from the 1980	East/West Line West	County LEA
-------------	---------------	-----------------	--------------	-----------------------	---------------------------	-----------------------	------------------------	---------------

Latitude 32 38.634 Longitude 103 42.108

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	30bbl	Volume Recovered	5bbl
Source of Release	Pipeline	Date and Hour of Occurrence	03/29/2010	Date and Hour of Discovery	03/20/2010 8:00 a.m.
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Paul Evans – BLM Geoffrey Leking – OCD Larry Johnson – OCD		
By Whom?	Pat Ellis	Date and Hour	03/30/2010 9:50 a.m.		
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

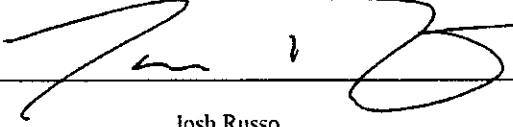
Describe Cause of Problem and Remedial Action Taken.*

A poly weld broke on a 6x4 swedge. The pipe has been repaired and put back in service.

Describe Area Affected and Cleanup Action Taken.*

30 bbls of produced water was initially released in the pasture next to the ruptured pipeline. A vacuum truck was called and recovered 5 bbls of fluid. One- call protocol will be made by dirt contractor who will then wait for archeological / wildlife sensitivity clearance from the BLM before removing any contaminated soils prior to soil sampling by Tetra Tech. (The location to the release site is 150 yards South of the following well: Endurance Resources, Paladin Federal #6 1650 FNL, 1980 FWL, Unit F, Section 19-T19S-R33E, Lea County, New Mexico, API#30-025-33312)

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: 		<u>OIL CONSERVATION DIVISION</u>	
Printed Name: Josh Russo		Approved by District Supervisor:	
Title: HSE Coordinator		Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com		Conditions of Approval:	
Date: 04/12/2010 Phone: 432-212-2399		Attached ☐	

* Attach Additional Sheets If Necessary

SITE INFORMATION

Report Type: Work Plan

RECEIVED
APP 1-5

General Site Information

Site:	Bates SWD Line	
Company:	COG Operating LLC	
Section, Township and Range	Section 19, T19S, R33E, Unit J	
Lease Number:		
County:	Lea County	
GPS:	32 38.634	103 42.108
Surface Owner:	Federal	
Mineral Owner:		
Directions:	From the intersection of Hwy 529 and CR 126, go South on CR 126 for 10 miles, turn left (East) into lease road for 5 miles, turn right (south) and go 1.3 miles to site on right side of lease road	
Release Data:		
Date Released:	3/29/2010	
Type Release:	Produced Water	
Source of Contamination:	Pipeline	
Fluid Released: bbls.	30	
Fluids Recovered: bbls.	5	

Official Communication

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

Ranking Criteria

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

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



TETRA TECH

March 17, 2011

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

**Re: Work Plan for the COG Operating LLC., Bates SWD Leak, Unit J,
Section 19, Township 19 South, Range 33 East, Lea County, New
Mexico.**

Mr. Leking:

Tetra Tech Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill at the Bates SWD Line Leak located in Unit J, Section 19, Township 19 South, Range 33 East, Lea County, New Mexico (Site). The spill site coordinates are N 32° 38.634', W 103° 42.108'. 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 March 29, 2010, and released approximately 30 barrels of produced water due to a failed poly weld on a swedge. To alleviate the problem, COG personnel repaired the leak. Approximately 5 barrels of standing fluids were recovered. The spill migrated south in the pasture 80' and crossed the lease road, impacting areas measuring 15' x 55' and 40' x 60' in the pasture. COG immediately excavated the spill area and removed approximately 1' to 2' of soil and transported the material to proper disposal. The initial C-141 form is enclosed in Appendix C.

Groundwater

The United States Geological Survey (USGS) database show wells in Section 17 and Section 18, Township 19 South, Range 33 East, with reported depths to water of approximately 118' and 340', respectively. The New Mexico State Engineer Well Reports showed a well with a reported depth of 185'

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



(Section 32). Tetra Tech installed a temporary well in Section 29 to established depth to groundwater. The well was installed to a total depth of 130' and did not encounter groundwater in the well (dry). Based on the data, the depth to groundwater for the Site appears to be greater than 100' bgs. The average depth to water map is included 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 Results

On May 3, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. The auger holes were advanced to a maximum depth of 5' below surface. Deeper samples could not be obtained due to a dense caliche formation. 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 sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all the samples were all below the BTEX and TPH RRAL. The chloride impact was not vertically defined at AH-1, AH-2 and AH-3. Auger hole (AH-4) was defined at 3' below surface. Based on the results, soil borings were installed at the site.

On August 2, 2010, Tetra Tech supervised the installation of four (4) soil borings to define the extents of the impacted areas. The soil borings were installed to a depth of 20' to 40' below surface. The soil boring locations are shown on Figure 4. The soil boring results are shown in Table 1.



Referring to Table 1, the analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg extended to 5' (SB-4), 15' (SB-2 and SB-3), and 20' (SB-1). All soil borings had chloride concentrations that decreased with depth and vertically defined.

Work Plan

In order to remediate the site, COG proposes to excavate the impacted soils. The goal of the remediation is to establish surface growth and to reduce the environmental liabilities for the protection of the groundwater. For growth, a minimum of 4.0' of impacted soil will be removed from the spill area.

Based upon the assessment and depth to groundwater, COG proposes to excavate and attempt to remove the majority of the elevated chloride impacted soils. The remaining chloride residue left in the soils would be reduced, thus reducing potential for groundwater impact. The impacted areas are proposed to be excavated down to approximate depths of 7' to 10' below surface. The area of soil boring (SB-1) will be excavated to 10' and capped with a 40 mil liner. The proposed excavation depths are highlighted in Table 1.

In the areas where the liner is installed, the liner will be installed at a depth of 4.0' to 5.0' below surface and the area backfilled with clean soil to grade. In addition, the areas at or near the water line, the line will be exposed to remove the impacted soil to the extent practicable.

Concerns exist regarding a deep excavation plan. Since the impacted area is in the native sand dunes, the proposed excavation depths may not be reached due to wall cave ins and safety concerns for equipment and onsite personnel. As such, Tetra Tech will excavate the soils to the maximum extent practicable. If depths are not achieved, the excavated areas will be lined to cap the area.

If you require any additional information or have any questions or comments concerning this report, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH


Ike Tavaréz, P.E.
Senior Project Manager

cc: Pat Ellis - COG
Paul Evans - BLM

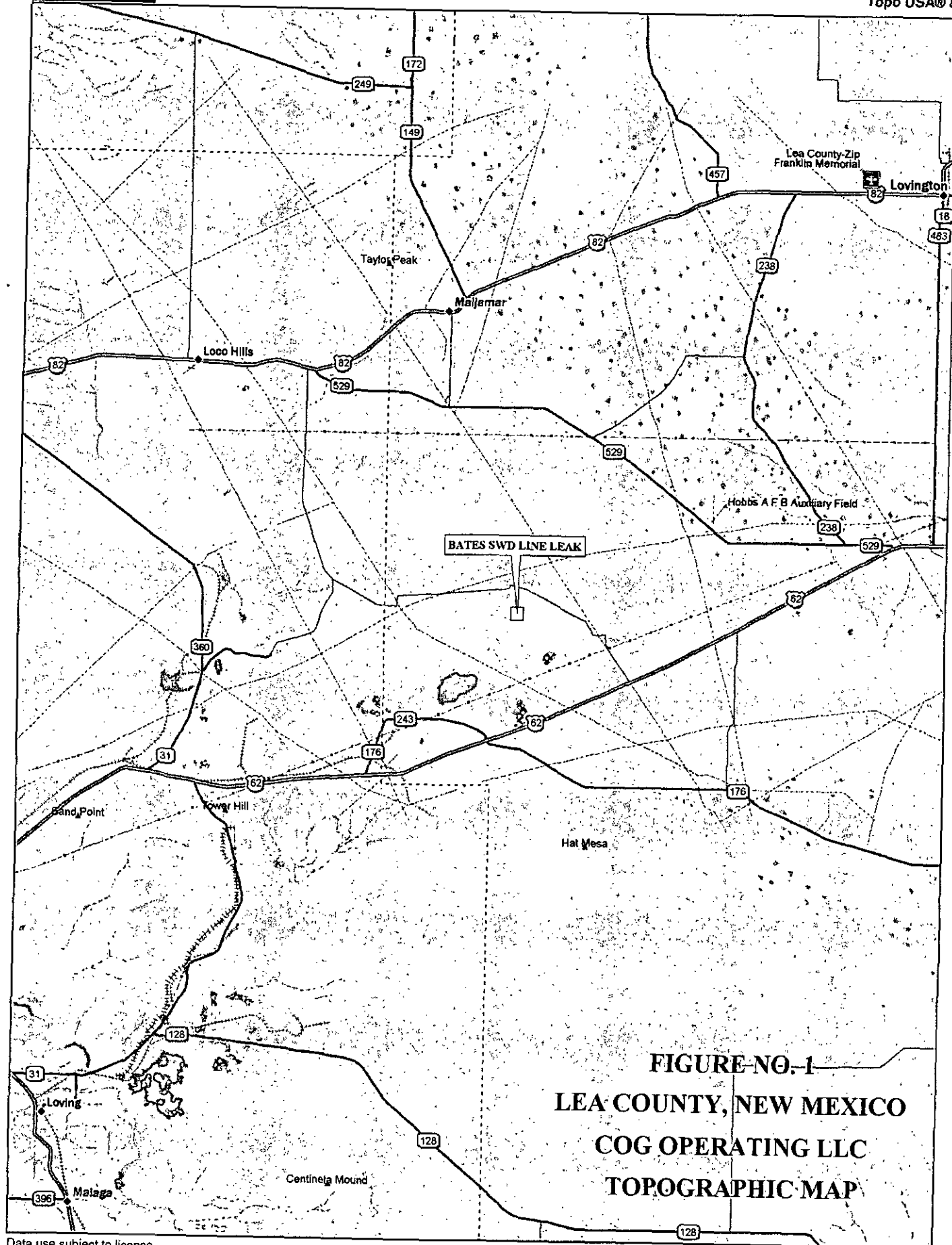
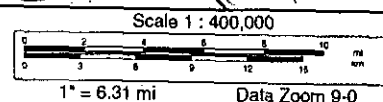


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

Data use subject to license.

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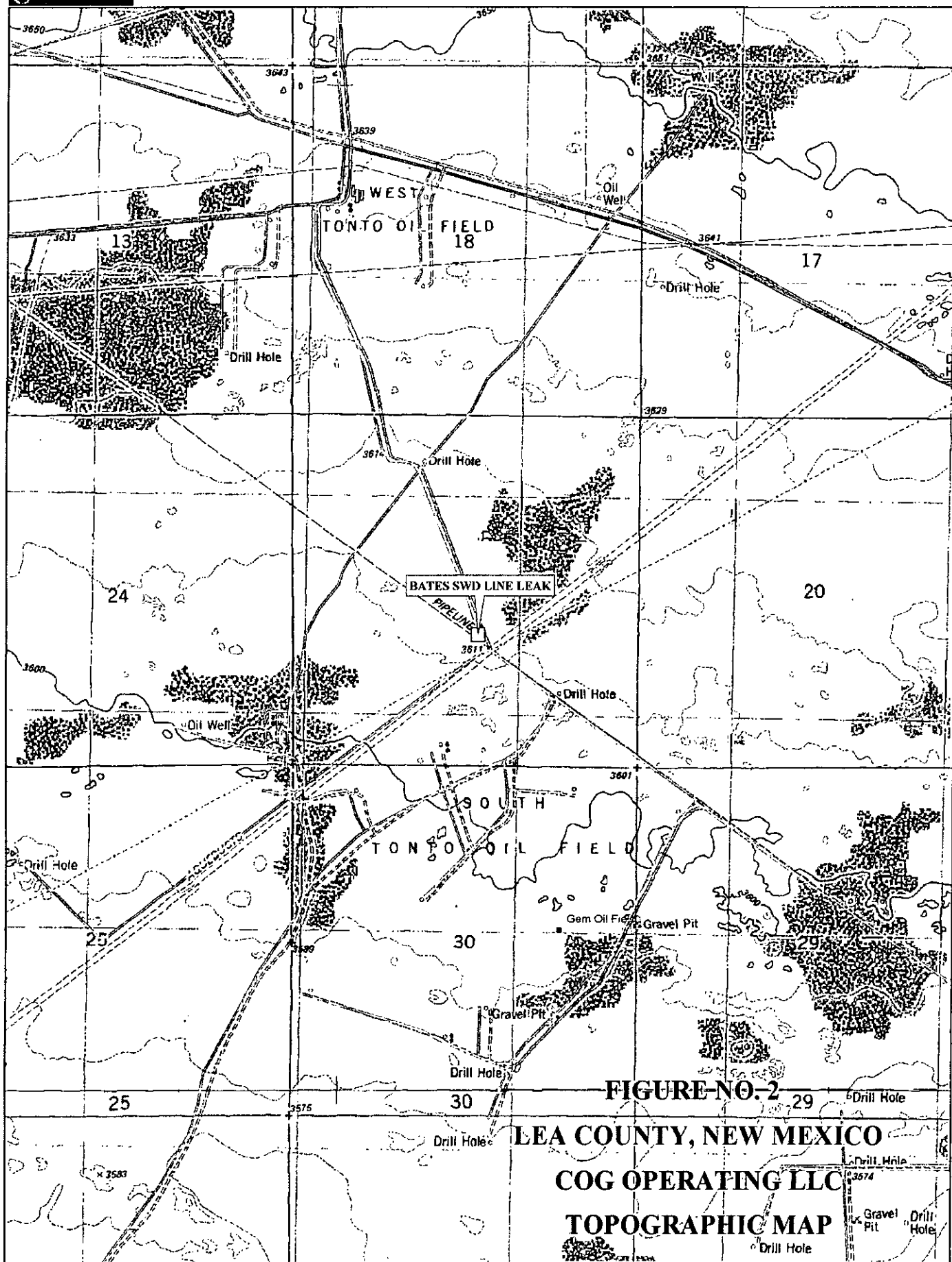


FIGURE NO. 2

LEA COUNTY, NEW MEXICO

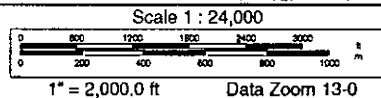
COG OPERATING LLC

TOPOGRAPHIC MAP

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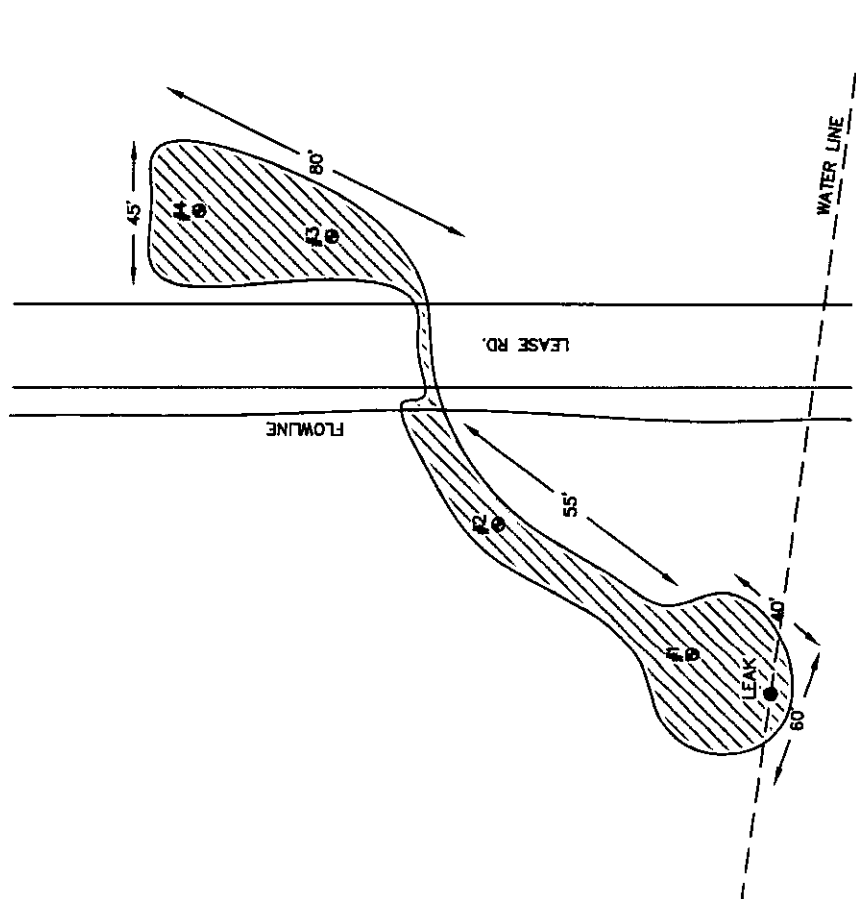
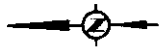


FIGURE NO. 3

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

BATES SWD LINE LEAK

TETRA TECH, INC.
MIDLAND, TEXAS

DATE:
5/3/10

DRAWN BY:
JU

FILE:
MAY2010/000001
PAGE 1 OF 2

NOT TO SCALE

☒ SPILL AREA
☒ SAMPLE LOCATIONS

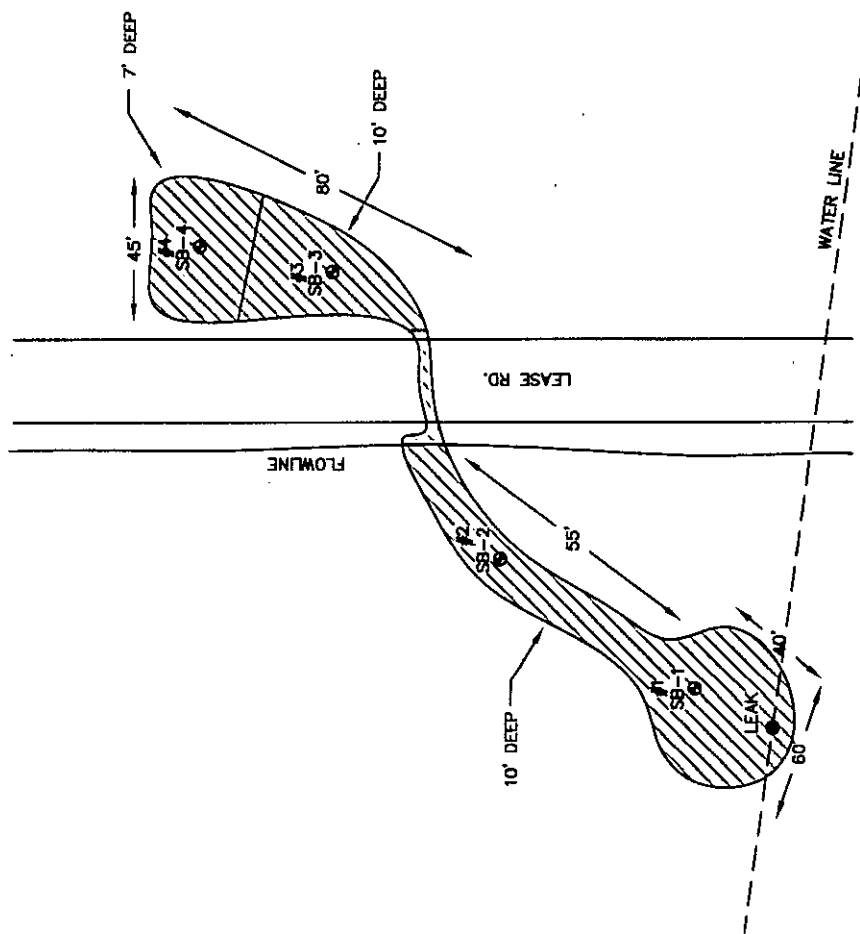
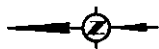


FIGURE NO. 4

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

BATES SWD LINE LEAK

TETRA TECH, INC.
MIDLAND, TEXAS

DATE:
5/3/10

DRAWN BY:
JJ

FILE:
MIDLAND/COG/000001
BATES SWD

NOT TO SCALE

- ☒ SPILL AREA
- ☒ EXCAVATION AREA
- ☒ SAMPLE LOCATIONS
- ☒ SOIL BORING LOCATIONS

Table 1
COG Operating LLC.
Bates SWD Line Leak
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	5/3/2010	0-1'	1'	X		<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	4,830
		1-1.5'	1'	X		-	-	-	-	-	-	-	5,540
		2-2.5'	1'	X		-	-	-	-	-	-	-	9,280
		3-3.5'	1'	X		-	-	-	-	-	-	-	9,500
		4-4.5'	1'	X		-	-	-	-	-	-	-	10,400
		5-5.5'	1'	X		-	-	-	-	-	-	-	6,770
SB-1	8/2/2010	1'	0.5'	X		<2.00	<50.0	<50.0	-	-	-	-	287
		3'	0.5'	X		-	-	-	-	-	-	-	3,960
		5'	0.5'	X		-	-	-	-	-	-	-	11,900
		7'	0.5'	X		-	-	-	-	-	-	-	12,600
		10'	0.5'	X		-	-	-	-	-	-	-	7,790
		15'	0.5'	X		-	-	-	-	-	-	-	4,590
		20'	0.5'	X		-	-	-	-	-	-	-	1,080
		25'	0.5'	X		-	-	-	-	-	-	-	221
		30'	0.5'	X		-	-	-	-	-	-	-	354
		40'	0.5'	X		-	-	-	-	-	-	-	234

Table 1
COG Operating LLC.
Bates SWD Line Leak
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-2	5/3/2010	0-1'	2'	X		<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	5,130
		1-1.5'	2'	X		-	-	-	-	-	-	-	9,510
		2-2.5'	2'	X		-	-	-	-	-	-	-	6,280
		3-3.5'	2'	X		-	-	-	-	-	-	-	8,620
		4-4.5'	2'	X		-	-	-	-	-	-	-	11,100
		5-5.5'	2'	X		-	-	-	-	-	-	-	6,730
		5.5-6'	2'	X		-	-	-	-	-	-	-	5,670
SB-2	8/2/2010	1'	0.5'	X		<2.00	<50.0	<50.0	-	-	-	-	483
		3'	0.5'	X		-	-	-	-	-	-	-	207
		5'	0.5'	X		-	-	-	-	-	-	-	11,600
		7'	0.5'	X		-	-	-	-	-	-	-	12,100
		10'	0.5'	X		-	-	-	-	-	-	-	7,630
		15'	0.5'	X		-	-	-	-	-	-	-	1,720
		20'	0.5'	X		-	-	-	-	-	-	-	288
		25'	0.5'	X		-	-	-	-	-	-	-	211
AH-3	5/3/2010	0-1'	2'	X		<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	8,200
		1-1.5'	2'	X		-	-	-	-	-	-	-	5,520
		2-2.5'	2'	X		-	-	-	-	-	-	-	6,760
		3-3.5'	2'	X		-	-	-	-	-	-	-	3,860
		3.5-4'	2'	X		-	-	-	-	-	-	-	2,830
SB-3	8/2/2010	1'	0.5'	X		<2.00	<50.0	<50.0	-	-	-	-	301
		3'	0.5'	X		-	-	-	-	-	-	-	404
		5'	0.5'	X		-	-	-	-	-	-	-	10,200
		7'	0.5'	X		-	-	-	-	-	-	-	11,800
		10'	0.5'	X		-	-	-	-	-	-	-	6,110
		15'	0.5'	X		-	-	-	-	-	-	-	5,110
		20'	0.5'	X		-	-	-	-	-	-	-	706
		25'	0.5'	X		-	-	-	-	-	-	-	355
		30'	0.5'	X		-	-	-	-	-	-	-	355

Table 1
COG Operating LLC.
Bates SWD Line Leak
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-4	5/3/2010	0-1'	2'	X		<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	13,000
		1-1.5'	2'	X		-	-	-	-	-	-	-	6,430
		2-2.5'	2'	X		-	-	-	-	-	-	-	3,030
		3-3.5'	2'	X		-	-	-	-	-	-	-	<200
		4-4.5'	2'	X		-	-	-	-	-	-	-	<200
		5-5.5'	2'	X		-	-	-	-	-	-	-	<200
SB-4	8/2/2010	1'	0.5'	X		<2.00	<50.0	<50.0	-	-	-	-	378
		3'	0.5'	X		-	-	-	-	-	-	-	1,690
		5'	0.5'	X		-	-	-	-	-	-	-	4,490
		7'	0.5'	X		-	-	-	-	-	-	-	746
		10'	0.5'	X		-	-	-	-	-	-	-	511
		15'	0.5'	X		-	-	-	-	-	-	-	258
		20'	0.5'	X		-	-	-	-	-	-	-	218

 Proposed Liner Installation
 Below Excavation Bottom
 Not Analyzed
 Proposed Excavation Depths

Water Well Data
Average Depth to Groundwater (ft)
COG - Bates Federal SWD

18 South 32 East

6	5	4	65	3	2	1
7	460	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	100	9	10	11	12 143
18	17	16	15	14	13	60
19	20	21	22	23	24	
>140	85			36		
30	29	28	27	26	25	
31	32	33	34	35	36	
			177			

18 South 34 East

6	5	4	3	2	1	
130	105		87	102	107	
7	8	9	10	11	12	115
83	148		148	110	92	
18	17	16	15	114	14	13
125		108	110	103	96	
19	20	21	22	23	24	
105	125					
30	29	28	27	26	25	
			112		117	
31	32	33	34	35	36	
				118		

19 South 32 East

6	5	4	3	2	1	
7	8	9	10	11	12	
	365					
18	17	16	15	14	13	
19	20	21	22	23	24	
102	345					
30	29	28	27	26	25	
31	32	33	34	35	36	
			250			

19 South 33 East

6	5	4	3	2	1	
7	8	9	10	11	12	
18	17	16	15	14	13	
340	116					
19	20	21	22	23	24	
30	29 130'	28	27	26 92	25	
	dry			85		
31	32	33	34	35	36	
	185					

19 South 34 East

6	244	5	4	3	2	100 1
7	8	9	29	10	11	123 12 60
			28.6			
18	17	16	15	14	13	
19	20	21	22	23	24	
30	29	28	27	26	25	
					28	
31	65	32	33	34	35	36

20 South 32 East

6	5	4	3	2	1	
					21.8	
7	8	9	10	11	12	
18	17	16	15	14	13	
89						
19	20	21	22	23	24	
30	29	28	27	26	25	
9.9			12.3			
31	32	33	34	35	36	
					46	

20 South 33 East

6	5	278	4	3	2	1
7	8	9	10	11	12	
18	17	16	15	14	13	
19	20	21	22	23	24	
					+300	
30	29	28	27	26	25	
31	32	33	34	35	36	

20 South 34 East

6	5	4	125	3	2	1
7	8	9	10	11	12	
18	17	128	16	15	14	13
	140				150	
19	20	21	22	23	24	
					270	
30	29	28	27	26	25	
31	32	33	34	82	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

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

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed Temparay well to establish depth to groundwater

Summary Report

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

Report Date: May 17, 2010

Work Order: 10050408



Project Location: Lea County, NM
Project Name: COG/Bates SWD Line Leak
Project Number: 114-6400501

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
230430	AH-1 0-1' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230431	AH-1 1-1.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230432	AH-1 2-2.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230433	AH-1 3-3.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230434	AH-1 4-4.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230435	AH-1 5-5.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230437	AH-2 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230438	AH-2 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230439	AH-2 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230440	AH-2 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230441	AH-2 4-4.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230442	AH-2 5-5.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230443	AH-2 5.5-6' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230444	AH-3 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230445	AH-3 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230446	AH-3 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230447	AH-3 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230448	AH-3 3.5-4' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230449	AH-4 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230450	AH-4 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230451	AH-4 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230452	AH-4 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230453	AH-4 4-4.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230461	AH-4 5-5.5'	soil	2010-05-03	00:00	2010-05-03

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)
230430 - AH-1 0-1' 1' BEB	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
230437 - AH-2 0-1' 2' BEB	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
230444 - AH-3 0-1' 2' BEB	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
230449 - AH-4 0-1' 2' BEB	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00

Sample: 230430 - AH-1 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		4830	mg/Kg	4.00

Sample: 230431 - AH-1 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		5540	mg/Kg	4.00

Sample: 230432 - AH-1 2-2.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		9280	mg/Kg	4.00

Sample: 230433 - AH-1 3-3.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		9500	mg/Kg	4.00

Sample: 230434 - AH-1 4-4.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		10400	mg/Kg	4.00

Sample: 230435 - AH-1 5-5.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		6770	mg/Kg	4.00

Sample: 230437 - AH-2 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		5130	mg/Kg	4.00

Sample: 230438 - AH-2 1-1.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		9510	mg/Kg	4.00

Sample: 230439 - AH-2 2-2.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		6280	mg/Kg	4.00

Sample: 230440 - AH-2 3-3.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		8620	mg/Kg	4.00

Sample: 230441 - AH-2 4-4.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		11100	mg/Kg	4.00

Sample: 230442 - AH-2 5-5.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		6730	mg/Kg	4.00

Sample: 230443 - AH-2 5.5-6' 2' BEB

Param	Flag	Result	Units	RL
Chloride		5670	mg/Kg	4.00

Sample: 230444 - AH-3 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		8200	mg/Kg	4.00

Sample: 230445 - AH-3 1-1.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		5520	mg/Kg	4.00

Sample: 230446 - AH-3 2-2.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		6760	mg/Kg	4.00

Sample: 230447 - AH-3 3-3.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		3860	mg/Kg	4.00

Sample: 230448 - AH-3 3.5-4' 2' BEB

Param	Flag	Result	Units	RL
Chloride		2830	mg/Kg	4.00

Sample: 230449 - AH-4 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		13000	mg/Kg	4.00

Sample: 230450 - AH-4 1-1.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		6430	mg/Kg	4.00

Sample: 230451 - AH-4 2-2.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		3030	mg/Kg	4.00

Sample: 230452 - AH-4 3-3.5' 2' BEB

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

Sample: 230453 - AH-4 4-4.5' 2' BEB

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

Sample: 230461 - AH-4 5-5.5'

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



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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: tab@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: May 17, 2010

Work Order: 10050408



Project Location: Lea County, NM
Project Name: COG/Bates SWD Line Leak
Project Number: 114-6400501

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
230430	AH-1 0-1' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230431	AH-1 1-1.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230432	AH-1 2-2.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230433	AH-1 3-3.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230434	AH-1 4-4.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230435	AH-1 5-5.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230437	AH-2 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230438	AH-2 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230439	AH-2 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230440	AH-2 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
230441	AH-2 4-4.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230442	AH-2 5-5.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230443	AH-2 5.5-6' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230444	AH-3 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230445	AH-3 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230446	AH-3 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230447	AH-3 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230448	AH-3 3.5-4' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230449	AH-4 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230450	AH-4 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230451	AH-4 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230452	AH-4 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230453	AH-4 4-4.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230461	AH-4 5-5.5'	soil	2010-05-03	00:00	2010-05-03

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/Bates SWD Line Leak were received by TraceAnalysis, Inc. on 2010-05-03 and assigned to work order 10050408. Samples for work order 10050408 were received intact at a temperature of 2.5 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	59700	2010-05-05 at 16:00	69742	2010-05-06 at 01:02
Chloride (Titration)	SM 4500-Cl B	59847	2010-05-06 at 10:00	69919	2010-05-17 at 16:00
Chloride (Titration)	SM 4500-Cl B	59847	2010-05-06 at 10:00	69978	2010-05-12 at 11:26
Chloride (Titration)	SM 4500-Cl B	59904	2010-05-06 at 09:47	70006	2010-05-13 at 16:17
TPH DRO - NEW	S 8015 D	59658	2010-05-04 at 13:43	69699	2010-05-04 at 13:43
TPH GRO	S 8015 D	59700	2010-05-05 at 16:00	69743	2010-05-06 at 01:30

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 10050408 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 230430 - AH-1 0-1' 1' BEB

Laboratory: Midland

Analysis: BTEX

QC Batch: 69742

Prep Batch: 59700

Analytical Method: S 8021B

Date Analyzed: 2010-05-06

Sample Preparation: 2010-05-05

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)	1	1.09	mg/Kg	1	2.00	54	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		0.985	mg/Kg	1	2.00	49	43.1 - 158.4

Sample: 230430 - AH-1 0-1' 1' BEB

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 69919

Prep Batch: 59847

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-05-17

Sample Preparation: 2010-05-06

Prep Method: N/A

Analyzed By: AR

Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4830	mg/Kg	50	4.00

Sample: 230430 - AH-1 0-1' 1' BEB

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 69699

Prep Batch: 59658

Analytical Method: S 8015 D

Date Analyzed: 2010-05-04

Sample Preparation: 2010-05-04

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

¹ SPECIAL - TFT is out of control limits due to an unknown anomaly. However, 4-BFB is within control limits and shows the method to be in control. •

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

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Lea County, NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		81.2	mg/Kg	1	100	81	70 - 130

Sample: 230430 - AH-1 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 69743
Prep Batch: 59700

Analytical Method: S 8015 D
Date Analyzed: 2010-05-06
Sample Preparation: 2010-05-05

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)		1.09	mg/Kg	1	2.00	54	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.14	mg/Kg	1	2.00	57	51.7 - 131.1

Sample: 230431 - AH-1 1-1.5' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 69919
Prep Batch: 59847

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-05-17
Sample Preparation: 2010-05-06

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5540	mg/Kg	50	4.00

Sample: 230432 - AH-1 2-2.5' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 69919
Prep Batch: 59847

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-05-17
Sample Preparation: 2010-05-06

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9280	mg/Kg	100	4.00

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COG/Bates SWD Line Leak

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Sample: 230433 - AH-1 3-3.5' 1' BEB

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	69919	Date Analyzed:	2010-05-17
Prep Batch:	59847	Sample Preparation:	2010-05-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9500	mg/Kg	100	4.00

Sample: 230434 - AH-1 4-4.5' 1' BEB

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	69919	Date Analyzed:	2010-05-17
Prep Batch:	59847	Sample Preparation:	2010-05-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		10400	mg/Kg	100	4.00

Sample: 230435 - AH-1 5-5.5' 1' BEB

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	69919	Date Analyzed:	2010-05-17
Prep Batch:	59847	Sample Preparation:	2010-05-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6770	mg/Kg	100	4.00

Sample: 230437 - AH-2 0-1' 2' BEB

Laboratory:	Midland		
Analysis:	BTEX	Analytical Method:	S 8021B
QC Batch:	69742	Date Analyzed:	2010-05-06
Prep Batch:	59700	Sample Preparation:	2010-05-05
		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

continued ...

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

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sample 230437 continued ...

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.35	mg/Kg	1	2.00	68	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.21	mg/Kg	1	2.00	60	43.1 - 158.4

Sample: 230437 - AH-2 0-1' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69919 Date Analyzed: 2010-05-17 Analyzed By: AR
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5130	mg/Kg	100	4.00

Sample: 230437 - AH-2 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 69699 Date Analyzed: 2010-05-04 Analyzed By: kg
Prep Batch: 59658 Sample Preparation: 2010-05-04 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		87.4	mg/Kg	1	100	87	70 - 130

Sample: 230437 - AH-2 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 69743 Date Analyzed: 2010-05-06 Analyzed By: AG
Prep Batch: 59700 Sample Preparation: 2010-05-05 Prepared By: AG

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

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Lea County, NM

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.34	mg/Kg	1	2.00	67	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.35	mg/Kg	1	2.00	68	51.7 - 131.1

Sample: 230438 - AH-2 1-1.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9510	mg/Kg	100	4.00

Sample: 230439 - AH-2 2-2.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6280	mg/Kg	100	4.00

Sample: 230440 - AH-2 3-3.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8620	mg/Kg	100	4.00

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Sample: 230441 - AH-2 4-4.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-12	Analyzed By:	AG
QC Batch:	69978	Sample Preparation:	2010-05-06	Prepared By:	AG
Prep Batch:	59847				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11100	mg/Kg	100	4.00

Sample: 230442 - AH-2 5-5.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-12	Analyzed By:	AG
QC Batch:	69978	Sample Preparation:	2010-05-06	Prepared By:	AG
Prep Batch:	59847				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6730	mg/Kg	100	4.00

Sample: 230443 - AH-2 5.5-6' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-12	Analyzed By:	AG
QC Batch:	69978	Sample Preparation:	2010-05-06	Prepared By:	AG
Prep Batch:	59847				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5670	mg/Kg	100	4.00

Sample: 230444 - AH-3 0-1' 2' BEB

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2010-05-06	Analyzed By:	AG
QC Batch:	69742	Sample Preparation:	2010-05-05	Prepared By:	AG
Prep Batch:	59700				

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.54	mg/Kg	1	2.00	77	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.39	mg/Kg	1	2.00	70	43.1 - 158.4

Sample: 230444 - AH-3 0-1' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8200	mg/Kg	100	4.00

Sample: 230444 - AH-3 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 69699 Date Analyzed: 2010-05-04 Analyzed By: kg
Prep Batch: 59658 Sample Preparation: 2010-05-04 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		93.2	mg/Kg	1	100	93	70 - 130

Sample: 230444 - AH-3 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 69743 Date Analyzed: 2010-05-06 Analyzed By: AG
Prep Batch: 59700 Sample Preparation: 2010-05-05 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.54	mg/Kg	1	2.00	77	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.54	mg/Kg	1	2.00	77	51.7 - 131.1

Sample: 230445 - AH-3 1-1.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5520	mg/Kg	100	4.00

Sample: 230446 - AH-3 2-2.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6760	mg/Kg	100	4.00

Sample: 230447 - AH-3 3-3.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3860	mg/Kg	100	4.00

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Sample: 230448 - AH-3 3.5-4' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 70006 Date Analyzed: 2010-05-13 Analyzed By: AR
Prep Batch: 59904 Sample Preparation: 2010-05-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2830	mg/Kg	100	4.00

Sample: 230449 - AH-4 0-1' 2' BEB

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 69742 Date Analyzed: 2010-05-06 Analyzed By: AG
Prep Batch: 59700 Sample Preparation: 2010-05-05 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.46	mg/Kg	1	2.00	73	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.32	mg/Kg	1	2.00	66	43.1 - 158.4

Sample: 230449 - AH-4 0-1' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 70006 Date Analyzed: 2010-05-13 Analyzed By: AR
Prep Batch: 59904 Sample Preparation: 2010-05-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		13000	mg/Kg	100	4.00

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Sample: 230449 - AH-4 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 69699 Date Analyzed: 2010-05-04 Analyzed By: kg
Prep Batch: 59658 Sample Preparation: 2010-05-04 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		90.4	mg/Kg	1	100	90	70 - 130

Sample: 230449 - AH-4 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 69743 Date Analyzed: 2010-05-06 Analyzed By: AG
Prep Batch: 59700 Sample Preparation: 2010-05-05 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.45	mg/Kg	1	2.00	72	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.46	mg/Kg	1	2.00	73	51.7 - 131.1

Sample: 230450 - AH-4 1-1.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 70006 Date Analyzed: 2010-05-13 Analyzed By: AR
Prep Batch: 59904 Sample Preparation: 2010-05-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6430	mg/Kg	100	4.00

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Sample: 230451 - AH-4 2-2.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-13	Analyzed By:	AR
QC Batch:	70006	Sample Preparation:	2010-05-06	Prepared By:	AR
Prep Batch:	59904				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3030	mg/Kg	100	4.00

Sample: 230452 - AH-4 3-3.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-13	Analyzed By:	AR
QC Batch:	70006	Sample Preparation:	2010-05-06	Prepared By:	AR
Prep Batch:	59904				

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

Sample: 230453 - AH-4 4-4.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-13	Analyzed By:	AR
QC Batch:	70006	Sample Preparation:	2010-05-06	Prepared By:	AR
Prep Batch:	59904				

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

Sample: 230461 - AH-4 5-5.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-13	Analyzed By:	AR
QC Batch:	70006	Sample Preparation:	2010-05-06	Prepared By:	AR
Prep Batch:	59904				

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

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Method Blank (1) QC Batch: 69699

QC Batch: 69699
Prep Batch: 59658

Date Analyzed: 2010-05-04
QC Preparation: 2010-05-04

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		78.7	mg/Kg	1	100	79	70 - 130

Method Blank (1) QC Batch: 69742

QC Batch: 69742
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

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)		1.84	mg/Kg	1	2.00	92	64.9 - 142.7
4-Bromofluorobenzene (4-BFB)		1.40	mg/Kg	1	2.00	70	43.9 - 141.9

Method Blank (1) QC Batch: 69743

QC Batch: 69743
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

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)		1.84	mg/Kg	1	2.00	92	66.2 - 145
4-Bromofluorobenzene (4-BFB)		1.55	mg/Kg	1	2.00	78	62 - 120.5

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Method Blank (1) QC Batch: 69919

QC Batch: 69919
Prep Batch: 59847

Date Analyzed: 2010-05-17
QC Preparation: 2010-05-06

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 69978

QC Batch: 69978
Prep Batch: 59847

Date Analyzed: 2010-05-12
QC Preparation: 2010-05-06

Analyzed By: AG
Prepared By: AR

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

Method Blank (1) QC Batch: 70006

QC Batch: 70006
Prep Batch: 59904

Date Analyzed: 2010-05-13
QC Preparation: 2010-05-06

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: 69699
Prep Batch: 59658

Date Analyzed: 2010-05-04
QC Preparation: 2010-05-04

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	276	mg/Kg	1	250	<5.86	110	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	277	mg/Kg	1	250	<5.86	111	57.4 - 133.4	0	20

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

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	95.8	95.9	mg/Kg	1	100	96	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 69742
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.98	mg/Kg	1	2.00	<0.00410	99	75.4 - 115.7
Toluene	1.96	mg/Kg	1	2.00	<0.00310	98	78.4 - 113.6
Ethylbenzene	1.89	mg/Kg	1	2.00	<0.00240	94	76 - 114.2
Xylene	5.72	mg/Kg	1	6.00	<0.00650	95	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.96	mg/Kg	1	2.00	<0.00410	98	75.4 - 115.7	1	20
Toluene	1.93	mg/Kg	1	2.00	<0.00310	96	78.4 - 113.6	2	20
Ethylbenzene	1.90	mg/Kg	1	2.00	<0.00240	95	76 - 114.2	0	20
Xylene	5.71	mg/Kg	1	6.00	<0.00650	95	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)	1.77	1.89	mg/Kg	1	2.00	88	94	65 - 142.9
4-Bromofluorobenzene (4-BFB)	1.71	1.80	mg/Kg	1	2.00	86	90	43.8 - 144.9

Laboratory Control Spike (LCS-1)

QC Batch: 69743
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	14.6	mg/Kg	1	20.0	<0.396	73	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	15.1	mg/Kg	1	20.0	<0.396	76	52.5 - 114.3	3	20

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

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.77	1.90	mg/Kg	1	2.00	88	95	66.2 - 148.7
4-Bromofluorobenzene (4-BFB)	1.76	1.87	mg/Kg	1	2.00	88	94	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch: 69919
Prep Batch: 59847

Date Analyzed: 2010-05-17
QC Preparation: 2010-05-06

Analyzed By: AR
Prepared By: AR

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

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.6	mg/Kg	1	100	<2.18	100	85 - 115	0	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: 69978
Prep Batch: 59847

Date Analyzed: 2010-05-12
QC Preparation: 2010-05-06

Analyzed By: AG
Prepared By: AR

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

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115	3	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: 70006
Prep Batch: 59904

Date Analyzed: 2010-05-13
QC Preparation: 2010-05-06

Analyzed By: AR
Prepared By: AR

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

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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	3	20

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

Matrix Spike (MS-1) Spiked Sample: 230449

QC Batch: 69699
Prep Batch: 59658

Date Analyzed: 2010-05-04
QC Preparation: 2010-05-04

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	217	mg/Kg	1	250	<5.86	87	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	212	mg/Kg	1	250	<5.86	85	35.2 - 167.1	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	85.8	85.3	mg/Kg	1	100	86	85	70 - 130

Matrix Spike (MS-1) Spiked Sample: 230657

QC Batch: 69742
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.01	mg/Kg	1	2.00	<0.00410	100	57.7 - 140.7
Toluene	2.20	mg/Kg	1	2.00	0.1688	102	53.4 - 146.6
Ethylbenzene	2.17	mg/Kg	1	2.00	0.1365	102	62.1 - 141.6
Xylene	6.63	mg/Kg	1	6.00	0.5222	102	61.2 - 142.7

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.96	mg/Kg	1	2.00	<0.00410	98	57.7 - 140.7	2	20
Toluene	2.13	mg/Kg	1	2.00	0.1688	98	53.4 - 146.6	3	20
Ethylbenzene	2.14	mg/Kg	1	2.00	0.1365	100	62.1 - 141.6	1	20

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Xylene	6.48	mg/Kg	1	6.00	0.5222	99	61.2 - 142.7	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.85	1.95	mg/Kg	1	2	92	98	61.7 - 139.6
4-Bromofluorobenzene (4-BFB)	1.93	2.04	mg/Kg	1	2	96	102	49.6 - 146.7

Matrix Spike (MS-1) Spiked Sample: 230654

QC Batch: 69743
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	208	mg/Kg	5	50.0	158	100	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	214	mg/Kg	5	50.0	158	112	10 - 198.3	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.02	4.92	mg/Kg	5	5	100	98	65.5 - 143
4-Bromofluorobenzene (4-BFB)	6.26	6.44	mg/Kg	5	5	125	129	58.6 - 140

Matrix Spike (MS-1) Spiked Sample: 230437

QC Batch: 69919
Prep Batch: 59847

Date Analyzed: 2010-05-17
QC Preparation: 2010-05-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	16400	mg/Kg	100	10000	5130	113	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	16500	mg/Kg	100	10000	5130	114	85 - 115	1	20

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

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

Page Number: 21 of 24
Lea County, NM

Matrix Spike (MS-1) Spiked Sample: 230447

QC Batch: 69978
Prep Batch: 59847

Date Analyzed: 2010-05-12
QC Preparation: 2010-05-06

Analyzed By: AG
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	13700	mg/Kg	100	10000	3860	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	13800	mg/Kg	100	10000	3860	99	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: 230480

QC Batch: 70006
Prep Batch: 59904

Date Analyzed: 2010-05-13
QC Preparation: 2010-05-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14900	mg/Kg	100	10000	5150	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	15000	mg/Kg	100	10000	5150	98	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: 69699

Date Analyzed: 2010-05-04

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	286	114	80 - 120	2010-05-04

Standard (CCV-2)

QC Batch: 69699

Date Analyzed: 2010-05-04

Analyzed By: kg

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

Page Number: 22 of 24
Lea County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	273	109	80 - 120	2010-05-04

Standard (CCV-3)

QC Batch: 69699 Date Analyzed: 2010-05-04 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	297	119	80 - 120	2010-05-04

Standard (CCV-1)

QC Batch: 69742 Date Analyzed: 2010-05-06 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	0.0990	99	80 - 120	2010-05-06
Toluene		mg/Kg	0.100	0.0978	98	80 - 120	2010-05-06
Ethylbenzene		mg/Kg	0.100	0.0946	95	80 - 120	2010-05-06
Xylene		mg/Kg	0.300	0.287	96	80 - 120	2010-05-06

Standard (CCV-2)

QC Batch: 69742 Date Analyzed: 2010-05-06 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	0.0959	96	80 - 120	2010-05-06
Toluene		mg/Kg	0.100	0.0942	94	80 - 120	2010-05-06
Ethylbenzene		mg/Kg	0.100	0.0901	90	80 - 120	2010-05-06
Xylene		mg/Kg	0.300	0.270	90	80 - 120	2010-05-06

Standard (CCV-1)

QC Batch: 69743 Date Analyzed: 2010-05-06 Analyzed By: AG

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

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Lea County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.894	89	80 - 120	2010-05-06

Standard (CCV-2)

QC Batch: 69743

Date Analyzed: 2010-05-06

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.994	99	80 - 120	2010-05-06

Standard (ICV-1)

QC Batch: 69919

Date Analyzed: 2010-05-17

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.4	99	85 - 115	2010-05-17

Standard (CCV-1)

QC Batch: 69919

Date Analyzed: 2010-05-17

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-05-17

Standard (ICV-1)

QC Batch: 69978

Date Analyzed: 2010-05-12

Analyzed By: AG

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	104	104	85 - 115	2010-05-12

Standard (CCV-1)

QC Batch: 69978

Date Analyzed: 2010-05-12

Analyzed By: AG

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

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Lea County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	96.0	96	85 - 115	2010-05-12

Standard (ICV-1)

QC Batch: 70006

Date Analyzed: 2010-05-13

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-05-13

Standard (CCV-1)

QC Batch: 70006

Date Analyzed: 2010-05-13

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	2010-05-13

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: IKL Tavarre	
PROJECT NO.: 141-4510.65.01		PROJECT NAME: COG / BARS SUD Line LUG	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
230430	5/13		0-1' 1' BEB
431			1-1.5' 1' BEB
432			2-2.5' 1' BEB
433			3-3.5' 1' BEB
434			4-4.5' 1' BEB
435			5-5.5' 1' BEB
436			5-6' 1' BEB
437			0-1' 2' BEB
438			1-1.5' 2' BEB
439			2-2.5' 2' BEB

RELINQUISHED BY (Signature)	Date: 5-13-10	Time: 10:45	RECEIVED BY (Signature)	Date: 5-13-10	Time: 10:45
RELINQUISHED BY (Signature)	Date: 5-13-10	Time: 10:45	RECEIVED BY (Signature)	Date: 5-13-10	Time: 10:45
RELINQUISHED BY (Signature)	Date: 5-13-10	Time: 10:45	RECEIVED BY (Signature)	Date: 5-13-10	Time: 10:45
RECEIVING LABORATORY:	ADDRESS: Midland STATE: TX PHONE: 432-682-4559 ZIP: 79705				

REMARKS: If total TPH exceeds 5,000 mg/kg run deeper samples. If BTEX exceeds 50 mg/kg run deeper samples. BTEX exceeds 10 mg/kg. Run deeper samples.

2500

Major Anions/Cations, pH, TDS	
PLM (Asbestos)	
Alpha Beta (Air)	
Gamma Spec.	
Chlordane	X
Post 808/808	
PCB's 8080/808	
GC/MS Smt. Vol. 8270/625	
GC/MS Vol. 8240/8260/624	
RCI	
TCLP Semi Volatiles	
TCLP Volatiles	
TCLP Metals Ag As Ba Cd Cr Pb Hg Se	
RCRA Metals Ag As Ba Cd Cr Pb Hg Se	
PAH 8270	
TPH 8015 MOD	X
TPH 8021B	X

Results by: **IKL Tavarre**

RUSH Charges Authorized: Yes No

Order # 10050408

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

CLIENT NAME: COG		SITE MANAGER: Ike Tavaraz		PROJECT NAME: COG / Butts Sub Line Leak		PRESERVATIVE METHOD			
PROJECT NO.: 114-6400501		SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS		FILTERED (Y/N)			
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	HCL	HNO3	ICE	NONE
260440	5/3		S	X	2' BEB			X	
441					2' BEB				
442					2' BEB				
443					2' BEB				
444					2' BEB				
445					2' BEB				
446					2' BEB				
447					2' BEB				
448					2' BEB				
449					2' BEB				
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		Date: 5-3-00		Date: 5-3-00		Time: 16:45	
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		Date: 5-3-00		Date: 5-3-00		Time: 16:45	
RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)		Date: 5-3-00		Date: 5-3-00		Time: 16:45	
RECEIVING LABORATORY:		7/10/17		RECEIVED BY: (Signature)		Date: 5-3-00		Time: 16:45	
ADDRESS: Midland		STATE: TX		ZIP: 79701		DATE: 5-3-00		TIME: 16:45	
CONTACT: 2500 West		PHONE: 79701		REMARKS: It total TPH records 5,000 mg/kg run deeper samples. It Butts records 50 mg/kg run deeper samples. It Butts records 10 mg/kg run deeper samples.		DATE: 5-3-00		TIME: 16:45	

Ike Tavaraz

2500 West
It total TPH records 5,000 mg/kg run deeper samples. It Butts records 50 mg/kg run deeper samples. It Butts records 10 mg/kg run deeper samples.

PAGE: 3 OF: 3

ANALYSIS REQUEST
(Circle or Specify Method No.)

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

CLIENT NAME: <u>COG</u>		SITE MANAGER: <u>Ike Tavaroz</u>	
PROJECT NO.: <u>114-010 0501</u>		PROJECT NAME: <u>COG / Bats SWD Line Leak</u>	
LAB ID. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
230450	5/3		1
451			2
452			3
453			4

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

Summary Report

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

Report Date: August 10, 2010

Work Order: 10080511



Project Location: Lea County, NM
Project Name: COG/Bates SWD Line Leak
Project Number: 114-6400501

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
239815	SB-1 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239816	SB-1 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239817	SB-1 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239818	SB-1 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239819	SB-1 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239820	SB-1 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239821	SB-1 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239822	SB-1 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239823	SB-1 30' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239824	SB-1 40' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239825	SB-2 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239826	SB-2 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239827	SB-2 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239828	SB-2 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239829	SB-2 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239830	SB-2 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239831	SB-2 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239832	SB-2 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239833	SB-3 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239834	SB-3 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239835	SB-3 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239836	SB-3 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239837	SB-3 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239838	SB-3 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239839	SB-3 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239840	SB-3 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239841	SB-3 30' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239842	SB-4 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239843	SB-4 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239844	SB-4 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
239845	SB-4 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239846	SB-4 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239847	SB-4 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239848	SB-4 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04

Sample - Field Code	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
239815 - SB-1 1' (6 in. BEB)	<50.0	<2.00
239825 - SB-2 1' (6 in. BEB)	<50.0	<2.00
239833 - SB-3 1' (6 in. BEB)	<50.0	<2.00
239842 - SB-4 1' (6 in. BEB)	<50.0	<2.00

Sample: 239815 - SB-1 1' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		287	mg/Kg	4.00

Sample: 239816 - SB-1 3' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		3960	mg/Kg	4.00

Sample: 239817 - SB-1 5' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		11900	mg/Kg	4.00

Sample: 239818 - SB-1 7' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		12600	mg/Kg	4.00

Sample: 239819 - SB-1 10' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		7790	mg/Kg	4.00

Sample: 239820 - SB-1 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		4590	mg/Kg	4.00

Sample: 239821 - SB-1 20' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		1080	mg/Kg	4.00

Sample: 239822 - SB-1 25' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		221	mg/Kg	4.00

Sample: 239823 - SB-1 30' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		354	mg/Kg	4.00

Sample: 239824 - SB-1 40' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4.00

Sample: 239825 - SB-2 1' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		483	mg/Kg	4.00

Sample: 239826 - SB-2 3' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		207	mg/Kg	4.00

Sample: 239827 - SB-2 5' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00

Sample: 239828 - SB-2 7' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		12100	mg/Kg	4.00

Sample: 239829 - SB-2 10' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		7630	mg/Kg	4.00

Sample: 239830 - SB-2 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		1720	mg/Kg	4.00

Sample: 239831 - SB-2 20' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		288	mg/Kg	4.00

Sample: 239832 - SB-2 25' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		211	mg/Kg	4.00

Sample: 239833 - SB-3 1' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		301	mg/Kg	4.00

Sample: 239834 - SB-3 3' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		404	mg/Kg	4.00

Sample: 239835 - SB-3 5' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		10200	mg/Kg	4.00

Sample: 239836 - SB-3 7' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		11800	mg/Kg	4.00

Sample: 239837 - SB-3 10' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		6110	mg/Kg	4.00

Sample: 239838 - SB-3 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		5110	mg/Kg	4.00

Sample: 239839 - SB-3 20' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		706	mg/Kg	4.00

Sample: 239840 - SB-3 25' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		355	mg/Kg	4.00

Sample: 239841 - SB-3 30' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		355	mg/Kg	4.00

Sample: 239842 - SB-4 1' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		378	mg/Kg	4.00

Sample: 239843 - SB-4 3' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		1690	mg/Kg	4.00

Sample: 239844 - SB-4 5' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		4490	mg/Kg	4.00

Sample: 239845 - SB-4 7' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		746	mg/Kg	4.00

Sample: 239846 - SB-4 10' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		511	mg/Kg	4.00

Sample: 239847 - SB-4 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		258	mg/Kg	4.00

Sample: 239848 - SB-4 20' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		218	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 Tavaréz
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: August 10, 2010

Work Order: 10080511



Project Location: Lea County, NM
Project Name: COG/Bates SWD Line Leak
Project Number: 114-6400501

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
239815	SB-1 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239816	SB-1 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239817	SB-1 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239818	SB-1 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239819	SB-1 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239820	SB-1 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239821	SB-1 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239822	SB-1 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239823	SB-1 30' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239824	SB-1 40' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
239825	SB-2 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239826	SB-2 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239827	SB-2 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239828	SB-2 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239829	SB-2 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239830	SB-2 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239831	SB-2 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239832	SB-2 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239833	SB-3 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239834	SB-3 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239835	SB-3 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239836	SB-3 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239837	SB-3 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239838	SB-3 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239839	SB-3 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239840	SB-3 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239841	SB-3 30' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239842	SB-4 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239843	SB-4 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239844	SB-4 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239845	SB-4 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239846	SB-4 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239847	SB-4 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239848	SB-4 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04

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/Bates SWD Line Leak were received by TraceAnalysis, Inc. on 2010-08-04 and assigned to work order 10080511. Samples for work order 10080511 were received intact at a temperature of 7.3 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	62029	2010-08-05 at 10:27	72419	2010-08-06 at 15:24
Chloride (Titration)	SM 4500-Cl B	62060	2010-08-06 at 08:24	72420	2010-08-06 at 15:26
Chloride (Titration)	SM 4500-Cl B	62061	2010-08-06 at 08:24	72421	2010-08-06 at 15:26
Chloride (Titration)	SM 4500-Cl B	62062	2010-08-06 at 08:25	72449	2010-08-09 at 14:03
TPH DRO - NEW	S 8015 D	62054	2010-08-05 at 15:38	72394	2010-08-05 at 15:38
TPH GRO	S 8015 D	62082	2010-08-06 at 09:30	72436	2010-08-06 at 15:00

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 10080511 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: August 10, 2010
114-6400501

Work Order: 10080511
COG/Bates SWD Line Leak

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Analytical Report

Sample: 239815 - SB-1 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72419	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62029				

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

Sample: 239815 - SB-1 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-08-05	Analyzed By:	kg
QC Batch:	72394	Sample Preparation:	2010-08-05	Prepared By:	kg
Prep Batch:	62054				

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		102	mg/Kg	1	100	102	70 - 130

Sample: 239815 - SB-1 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-08-06	Analyzed By:	AG
QC Batch:	72436	Sample Preparation:	2010-08-06	Prepared By:	AG
Prep Batch:	62082				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.58	mg/Kg	1	2.00	79	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.47	mg/Kg	1	2.00	74	42 - 159

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Sample: 239816 - SB-1 3' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72419	Date Analyzed:	2010-08-06
Prep Batch:	62029	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3960	mg/Kg	100	4.00

Sample: 239817 - SB-1 5' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72419	Date Analyzed:	2010-08-06
Prep Batch:	62029	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11900	mg/Kg	100	4.00

Sample: 239818 - SB-1 7' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72419	Date Analyzed:	2010-08-06
Prep Batch:	62029	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		12600	mg/Kg	100	4.00

Sample: 239819 - SB-1 10' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72420	Date Analyzed:	2010-08-06
Prep Batch:	62060	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		7790	mg/Kg	100	4.00

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Sample: 239820 - SB-1 15' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4590	mg/Kg	100	4.00

Sample: 239821 - SB-1 20' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

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

Sample: 239822 - SB-1 25' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		221	mg/Kg	50	4.00

Sample: 239823 - SB-1 30' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		354	mg/Kg	50	4.00

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Sample: 239824 - SB-1 40' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72420	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62060				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		234	mg/Kg	50	4.00

Sample: 239825 - SB-2 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72420	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62060				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		483	mg/Kg	50	4.00

Sample: 239825 - SB-2 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-08-05	Analyzed By:	kg
QC Batch:	72394	Sample Preparation:	2010-08-05	Prepared By:	kg
Prep Batch:	62054				

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		98.1	mg/Kg	1	100	98	70 - 130

Sample: 239825 - SB-2 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-08-06	Analyzed By:	AG
QC Batch:	72436	Sample Preparation:	2010-08-06	Prepared By:	AG
Prep Batch:	62082				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.26	mg/Kg	1	2.00	63	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.15	mg/Kg	1	2.00	58	42 - 159

Sample: 239826 - SB-2 3' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		207	mg/Kg	50	4.00

Sample: 239827 - SB-2 5' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11600	mg/Kg	100	4.00

Sample: 239828 - SB-2 7' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		12100	mg/Kg	100	4.00

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Sample: 239829 - SB-2 10' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		7630	mg/Kg	100	4.00

Sample: 239830 - SB-2 15' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1720	mg/Kg	100	4.00

Sample: 239831 - SB-2 20' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		288	mg/Kg	50	4.00

Sample: 239832 - SB-2 25' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		211	mg/Kg	50	4.00

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Sample: 239833 - SB-3 1' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72421 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62061 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		301	mg/Kg	50	4.00

Sample: 239833 - SB-3 1' (6 in. BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 72394 Date Analyzed: 2010-08-05 Analyzed By: kg
Prep Batch: 62054 Sample Preparation: 2010-08-05 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		99.5	mg/Kg	1	100	100	70 - 130

Sample: 239833 - SB-3 1' (6 in. BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 72436 Date Analyzed: 2010-08-06 Analyzed By: AG
Prep Batch: 62082 Sample Preparation: 2010-08-06 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.93	mg/Kg	1	2.00	96	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.74	mg/Kg	1	2.00	87	42 - 159

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Sample: 239834 - SB-3 3' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		404	mg/Kg	50	4.00

Sample: 239835 - SB-3 5' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		10200	mg/Kg	100	4.00

Sample: 239836 - SB-3 7' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11800	mg/Kg	100	4.00

Sample: 239837 - SB-3 10' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6110	mg/Kg	100	4.00

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Sample: 239838 - SB-3 15' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72421	Date Analyzed:	2010-08-06
Prep Batch:	62061	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5110	mg/Kg	100	4.00

Sample: 239839 - SB-3 20' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72449	Date Analyzed:	2010-08-09
Prep Batch:	62062	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		706	mg/Kg	50	4.00

Sample: 239840 - SB-3 25' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72449	Date Analyzed:	2010-08-09
Prep Batch:	62062	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		355	mg/Kg	50	4.00

Sample: 239841 - SB-3 30' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72449	Date Analyzed:	2010-08-09
Prep Batch:	62062	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		355	mg/Kg	50	4.00

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Sample: 239842 - SB-4 1' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72449 Date Analyzed: 2010-08-09 Analyzed By: AR
Prep Batch: 62062 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		378	mg/Kg	50	4.00

Sample: 239842 - SB-4 1' (6 in. BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 72394 Date Analyzed: 2010-08-05 Analyzed By: kg
Prep Batch: 62054 Sample Preparation: 2010-08-05 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		104	mg/Kg	1	100	104	70 - 130

Sample: 239842 - SB-4 1' (6 in. BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 72436 Date Analyzed: 2010-08-06 Analyzed By: AG
Prep Batch: 62082 Sample Preparation: 2010-08-06 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.74	mg/Kg	1	2.00	87	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.58	mg/Kg	1	2.00	79	42 - 159

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Sample: 239843 - SB-4 3' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72449	Date Analyzed:	2010-08-09
Prep Batch:	62062	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1690	mg/Kg	100	4.00

Sample: 239844 - SB-4 5' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72449	Date Analyzed:	2010-08-09
Prep Batch:	62062	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4490	mg/Kg	100	4.00

Sample: 239845 - SB-4 7' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72449	Date Analyzed:	2010-08-09
Prep Batch:	62062	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		746	mg/Kg	50	4.00

Sample: 239846 - SB-4 10' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72449	Date Analyzed:	2010-08-09
Prep Batch:	62062	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		511	mg/Kg	50	4.00

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Sample: 239847 - SB-4 15' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72449 Date Analyzed: 2010-08-09 Analyzed By: AR
Prep Batch: 62062 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		258	mg/Kg	50	4.00

Sample: 239848 - SB-4 20' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72449 Date Analyzed: 2010-08-09 Analyzed By: AR
Prep Batch: 62062 Sample Preparation: 2010-08-06 Prepared By: AR

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

Method Blank (1) QC Batch: 72394

QC Batch: 72394 Date Analyzed: 2010-08-05 Analyzed By: kg
Prep Batch: 62054 QC Preparation: 2010-08-05 Prepared By: kg

Parameter	Flag	MDL Result	Units	RL
DRO		<14.5	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		103	mg/Kg	1	100	103	70 - 130

Method Blank (1) QC Batch: 72419

QC Batch: 72419 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62029 QC Preparation: 2010-08-05 Prepared By: AR

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

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Method Blank (1) QC Batch: 72420

QC Batch: 72420
Prep Batch: 62060

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 72421

QC Batch: 72421
Prep Batch: 62061

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 72436

QC Batch: 72436
Prep Batch: 62082

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<1.65	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.13	mg/Kg	1	2.00	106	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.50	mg/Kg	1	2.00	75	52.4 - 130

Method Blank (1) QC Batch: 72449

QC Batch: 72449
Prep Batch: 62062

Date Analyzed: 2010-08-09
QC Preparation: 2010-08-06

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: 72394
Prep Batch: 62054

Date Analyzed: 2010-08-05
QC Preparation: 2010-08-05

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	225	mg/Kg	1	250	<14.5	90	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	238	mg/Kg	1	250	<14.5	95	57.4 - 133.4	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	104	110	mg/Kg	1	100	104	110	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 72419
Prep Batch: 62029

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-05

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.1	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	102	mg/Kg	1	100	<2.18	102	85 - 115	3	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: 72420
Prep Batch: 62060

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.3	mg/Kg	1	100	<2.18	98	85 - 115

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

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115	3	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: 72421
Prep Batch: 62061

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.4	mg/Kg	1	100	<2.18	97	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	102	mg/Kg	1	100	<2.18	102	85 - 115	5	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 72436
Prep Batch: 62082

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.1	mg/Kg	1	20.0	<1.65	80	69.9 - 95.4

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
GRO	16.5	mg/Kg	1	20.0	<1.65	82	69.9 - 95.4	2	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	1.94	mg/Kg	1	2.00	96	97	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.62	1.65	mg/Kg	1	2.00	81	82	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 72449
Prep Batch: 62062

Date Analyzed: 2010-08-09
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.3	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 239899

QC Batch: 72394
Prep Batch: 62054

Date Analyzed: 2010-08-05
QC Preparation: 2010-08-05

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	196	mg/Kg	1	250	<14.5	78	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	188	mg/Kg	1	250	<14.5	75	35.2 - 167.1	4	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	91.5	88.7	mg/Kg	1	100	92	89	70 - 130

Matrix Spike (MS-1) Spiked Sample: 239818

QC Batch: 72419
Prep Batch: 62029

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-05

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	22800	mg/Kg	100	10000	12600	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	23200	mg/Kg	100	10000	12600	106	85 - 115	2	20

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

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Matrix Spike (MS-1) Spiked Sample: 239828

QC Batch: 72420
Prep Batch: 62060

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	22700	mg/Kg	100	10000	12100	106	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	22300	mg/Kg	100	10000	12100	102	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 239838

QC Batch: 72421
Prep Batch: 62061

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14200	mg/Kg	100	10000	5110	91	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	5110	95	85 - 115	3	20

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

Matrix Spike (MS-1) Spiked Sample: 239786

QC Batch: 72436
Prep Batch: 62082

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	¹ 11.0	mg/Kg	1	20.0	<1.65	55	61.8 - 114

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

continued ...

¹Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	² 15.0	mg/Kg	1	20.0	<1.65	75	61.8 - 114	31	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.60	1.07	mg/Kg	1	2	80	54	50 - 162
4-Bromofluorobenzene (4-BFB)	1.58	1.13	mg/Kg	1	2	79	56	50 - 162

Matrix Spike (MS-1) Spiked Sample: 239848

QC Batch: 72449
Prep Batch: 62062

Date Analyzed: 2010-08-09
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9440	mg/Kg	100	10000	<218	92	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	9640	mg/Kg	100	10000	<218	94	85 - 115	2	20

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

Standard (CCV-1)

QC Batch: 72394

Date Analyzed: 2010-08-05

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	232	93	80 - 120	2010-08-05

Standard (CCV-2)

QC Batch: 72394

Date Analyzed: 2010-08-05

Analyzed By: kg

²MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

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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	226	90	80 - 120	2010-08-05

Standard (ICV-1)

QC Batch: 72419 Date Analyzed: 2010-08-06 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-08-06

Standard (CCV-1)

QC Batch: 72419 Date Analyzed: 2010-08-06 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	2010-08-06

Standard (ICV-1)

QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.5	100	85 - 115	2010-08-06

Standard (CCV-1)

QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-08-06

Standard (ICV-1)

QC Batch: 72421 Date Analyzed: 2010-08-06 Analyzed By: AR

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Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.2	98	85 - 115	2010-08-06

Standard (CCV-1)

QC Batch: 72421

Date Analyzed: 2010-08-06

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	2010-08-06

Standard (CCV-1)

QC Batch: 72436

Date Analyzed: 2010-08-06

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.984	98	80 - 120	2010-08-06

Standard (CCV-2)

QC Batch: 72436

Date Analyzed: 2010-08-06

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.853	85	80 - 120	2010-08-06

Standard (ICV-1)

QC Batch: 72449

Date Analyzed: 2010-08-09

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	2010-08-09

Standard (CCV-1)

QC Batch: 72449

Date Analyzed: 2010-08-09

Analyzed By: AR

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.8	98	85 - 115	2010-08-09

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) 682-4559

CLIENT NAME: COG		SITE MANAGER: Ike Taveraz		PROJECT NAME: COG / Dates SWD		PROJECT NO: 114-6400501		SAMPLE IDENTIFICATION		PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HMOS		ICE		NONE	
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB																		
82825	8/2		S		X	SB-2 1' (6" DEB)																	
8286						SB-2 3' (6" DEB)																	
8287						SB-2 5' (6" DEB)																	
8288						SB-2 7' (6" DEB)																	
8289						SB-2 10' (6" DEB)																	
830						SB-2 15' (6" DEB)																	
831						SB-2 20' (6" DEB)																	
832						SB-2 25' (6" DEB)																	
833						SB-3 1' (6" DEB)																	
834						SB-3 3' (6" DEB)																	

RELINQUISHED BY: (Signature) *[Signature]* Date: 8-11-10 Time: 10:10

RELINQUISHED BY: (Signature) *[Signature]* Date: Time:

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RECEIVED BY: (Signature) *[Signature]* Date: 8-11-10 Time: 10:10

RECEIVED BY: (Signature) *[Signature]* Date: Time:

RECEIVED BY: (Signature) *[Signature]* Date: Time:

RECEIVING LABORATORY: *THAC*

ADDRESS: *114-6400501*

CITY: *DATE* STATE: *ZIP*

CONTRACT: *PHONE* DATE: *TIME*

REMARKS: *135-114-6400501*

CLIENT NAME: COG

PROJECT NO: 114-6400501

LAB I.D. NUMBER: 82825

DATE: 8/2

TIME:

MATRIX: S

COMP:

GRAB: X

SITE MANAGER: Ike Taveraz

PROJECT NAME: COG / Dates SWD

SAMPLE IDENTIFICATION: SB-2 1' (6" DEB)

NUMBER OF CONTAINERS: 1

FILTERED (Y/N):

HCL:

HMOS:

ICE:

NONE:

RELINQUISHED BY: (Signature) *[Signature]* Date: 8-11-10 Time: 10:10

RELINQUISHED BY: (Signature) *[Signature]* Date: Time:

RELINQUISHED BY: (Signature) *[Signature]* Date: Time:

RECEIVED BY: (Signature) *[Signature]* Date: 8-11-10 Time: 10:10

RECEIVED BY: (Signature) *[Signature]* Date: Time:

RECEIVED BY: (Signature) *[Signature]* Date: Time:

RECEIVING LABORATORY: *THAC*

ADDRESS: *114-6400501*

CITY: *DATE* STATE: *ZIP*

CONTRACT: *PHONE* DATE: *TIME*

REMARKS: *135-114-6400501*

CLIENT NAME: COG

PROJECT NO: 114-6400501

LAB I.D. NUMBER: 82825

DATE: 8/2

TIME:

MATRIX: S

COMP:

GRAB: X

SITE MANAGER: Ike Taveraz

PROJECT NAME: COG / Dates SWD

SAMPLE IDENTIFICATION: SB-2 1' (6" DEB)

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FILTERED (Y/N):

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HMOS:

ICE:

NONE:

RELINQUISHED BY: (Signature) *[Signature]* Date: 8-11-10 Time: 10:10

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RELINQUISHED BY: (Signature) *[Signature]* Date: Time:

RECEIVED BY: (Signature) *[Signature]* Date: 8-11-10 Time: 10:10

RECEIVED BY: (Signature) *[Signature]* Date: Time:

RECEIVED BY: (Signature) *[Signature]* Date: Time:

RECEIVING LABORATORY: *THAC*

ADDRESS: *114-6400501*

CITY: *DATE* STATE: *ZIP*

CONTRACT: *PHONE* DATE: *TIME*

REMARKS: *135-114-6400501*

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

WO# 10080511

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 Tavaraz	
PROJECT NO.: 114-6400501		PROJECT NAME: COG / Bates SWD	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
289835	8/2		SB-3 5' (6" BEB)
886			SB-3 7' (6" BEB)
837			SB-3 10' (6" BEB)
838			SB-3 15' (6" BEB)
889			SB-3 20' (6" BEB)
840			SB-3 25' (6" BEB)
841			SB-3 30' (6" BEB)
842			SB-4 1' (6" BEB)
843			SB-4 3' (6" BEB)
844			SB-4 5' (6" BEB)

RELINQUISHED BY: (Signature)	Date: 8/2/00	Time: 16:50	RECEIVED BY: (Signature)	Date: 8/2/00	Time: 16:50
RELINQUISHED BY: (Signature)	Date: _____	Time: _____	RECEIVED BY: (Signature)	Date: _____	Time: _____
RELINQUISHED BY: (Signature)	Date: _____	Time: _____	RECEIVED BY: (Signature)	Date: _____	Time: _____
RECEIVING LABORATORY: TETRA TECH	RECEIVED BY: (Signature)				
CITY: Midland STATE: TX ZIP: _____	RECEIVED BY: (Signature)				
CONTACT: _____ PHONE: _____ DATE: _____	RECEIVED BY: (Signature)				

SAMPLE CONDITION WHEN RECEIVED: **7.3°C intact**

REMARKS: _____

PAGE: 3 OF: 4	
ANALYSIS REQUEST (Circle or Specify Method No.)	
PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se
TPH 8015 MOD TX1006 (Ext to C35)	TCLP Metals Ag As Ba Cd Cr Pb Hg Se
BTEX 8021B	TCLP Volatiles
	TCLP Semi Volatiles
	RCI
	GC/MS Vol. 8240/8260/824
	GC/MS Semi. Vol. 8270/825
	PCB's 8080/808
	Pest. 808/808
	Chloride
	Gamma Spec.
	Alpha Beta (Am)
	PLM (Asbestos)
	Major Anions/Cations, PH, TDS

SAMPLED BY: (Print & Initial)	Kim	Date: 8/2/00
SAMPLE SHIPPED BY: (Circle)	FEDEX	AIRBILL #:
	MAND DELIVERED	OTHER:
TETRA TECH CONTACT PERSON: Ike Tavaraz		
Results by:		
RUSH Charges Authorized:		
Yes No		

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**

CLIENT NAME:		PROJECT NO.:		PROJECT NAME:		SITE MANAGER:	
LAB I.D. NUMBER		DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION
23845	8/2			S		X	SB-4 7' (6" BEB)
846							SB-4 10' (6" BEB)
847							SB-4 15' (6" BEB)
848							SB-4 20' (6" BEB)

PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	

CLIENT NAME:		PROJECT NO.:		PROJECT NAME:		SITE MANAGER:	
LAB I.D. NUMBER		DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION
23845	8/2			S		X	SB-4 7' (6" BEB)
846							SB-4 10' (6" BEB)
847							SB-4 15' (6" BEB)
848							SB-4 20' (6" BEB)

PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	

CLIENT NAME:		PROJECT NO.:		PROJECT NAME:		SITE MANAGER:	
LAB I.D. NUMBER		DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION
23845	8/2			S		X	SB-4 7' (6" BEB)
846							SB-4 10' (6" BEB)
847							SB-4 15' (6" BEB)
848							SB-4 20' (6" BEB)

PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	

CLIENT NAME:		PROJECT NO.:		PROJECT NAME:		SITE MANAGER:	
LAB I.D. NUMBER		DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION
23845	8/2			S		X	SB-4 7' (6" BEB)
846							SB-4 10' (6" BEB)
847							SB-4 15' (6" BEB)
848							SB-4 20' (6" BEB)

PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	

CLIENT NAME:		PROJECT NO.:		PROJECT NAME:		SITE MANAGER:	
LAB I.D. NUMBER		DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION
23845	8/2			S		X	SB-4 7' (6" BEB)
846							SB-4 10' (6" BEB)
847							SB-4 15' (6" BEB)
848							SB-4 20' (6" BEB)

PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	

CLIENT NAME:		PROJECT NO.:		PROJECT NAME:		SITE MANAGER:	
LAB I.D. NUMBER		DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION
23845	8/2			S		X	SB-4 7' (6" BEB)
846							SB-4 10' (6" BEB)
847							SB-4 15' (6" BEB)
848							SB-4 20' (6" BEB)

PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	

CLIENT NAME:		PROJECT NO.:		PROJECT NAME:		SITE MANAGER:	
LAB I.D. NUMBER		DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION
23845	8/2			S		X	SB-4 7' (6" BEB)
846							SB-4 10' (6" BEB)
847							SB-4 15' (6" BEB)
848							SB-4 20' (6" BEB)

PRESERVATIVE METHOD		NUMBER OF CONTAINERS		FILTERED (Y/N)		HCL		HNO3		ICE		NONE	
---------------------	--	----------------------	--	----------------	--	-----	--	------	--	-----	--	------	--

SITE INFORMATION

Report Type: Closure

General Site Information:

Site:	Bates SWD Line	
Company:	COG Operating LLC	
Section, Township and Range	Section 19, T19S, R33E, Unit J	
Lease Number:		
County:	Lea County	
GPS:	32 38.634	103 42.108
Surface Owner:	Federal	
Mineral Owner:		
Directions:	From the intersection of Hwy 529 and CR 126, go South on CR 126 for 10 miles, turn left (East) into lease road for 5 miles, turn right (south) and go 1.3 miles to site on right side of lease road	
Release Data:		
Date Released:	3/29/2010	
Type Release:	Produced Water	
Source of Contamination:	Pipeline	
Fluid Released: bbls.	30	
Fluids Recovered: bbls.	5	

Official Communication:

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

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

HOBBS OCD

OCT 07 2011

RECEIVED



TETRA TECH

September 8, 2011

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

Re: Closure Request for the COG Operating LLC., Bates SWD Leak, Unit J, Section 19, Township 19 South, Range 33 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill at the Bates SWD Line Leak located in Unit J, Section 19, Township 19 South, Range 33 East, Lea County, New Mexico (Site). The spill site coordinates are N 32° 38.634', W 103° 42.108'. 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 March 29, 2010, and released approximately 30 barrels of produced water due to a failed poly weld on a swedge. To alleviate the problem, COG personnel repaired the leak. Approximately 5 barrels of standing fluids were recovered. The spill migrated south in the pasture 80' and crossed the lease road, impacting areas measuring 15' x 55' and 40' x 60' in the pasture. COG immediately excavated the spill area and removed approximately 1' to 2' of soil and transported the material to proper disposal. The initial C-141 form is enclosed in Appendix C.

Groundwater

The United States Geological Survey (USGS) database show wells in Section 17 and Section 18, Township 19 South, Range 33 East, with reported depths to water of approximately 118' and 340', respectively. The New Mexico State Engineer Well Reports showed a well with a reported depth of 185'

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



(Section 32). Tetra Tech installed a temporary well in Section 29 to established depth to groundwater. The well was installed to a total depth of 130' and did not encounter groundwater in the well (dry). Based on the data, the depth to groundwater for the Site appears to be greater than 100' bgs. The average depth to water map is included 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 Results

On May 3, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. The auger holes were advanced to a maximum depth of 5' below surface. Deeper samples could not be obtained due to a dense caliche formation. 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 sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all the samples were all below the BTEX and TPH RRAL. The chloride impact was not vertically defined at AH-1, AH-2 and AH-3. Auger hole (AH-4) was defined at 3' below surface. Based on the results, soil borings were installed at the site.

On August 2, 2010, Tetra Tech supervised the installation of four (4) soil borings to define the extents of the impacted areas. The soil borings were installed to a depth of 20' to 40' below surface. The soil boring locations are shown on Figure 4. The soil boring results are shown in Table 1.



TETRA TECH

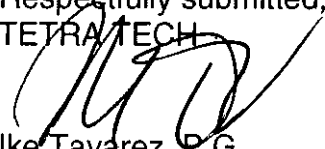
Referring to Table 1, the analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg extended to 5' (SB-4), 15' (SB-2 and SB-3), and 20' (SB-1). All soil borings had chloride concentrations that decreased with depth and vertically defined.

Remediation Activities and Closure Request

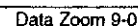
Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. Once the site was excavated to the appropriate depths, a 40 mil liner was installed at 4' below surface in the area of AH-1. The excavation was then brought up to surface grade with clean backfill material. The final depths of the soil remediation for the entire spill met or exceeded the depths of the approved work plan. The excavation depths are highlighted in Table 1 and shown on Figure 4. A copy of the C-141 (Final) is included in Appendix A.

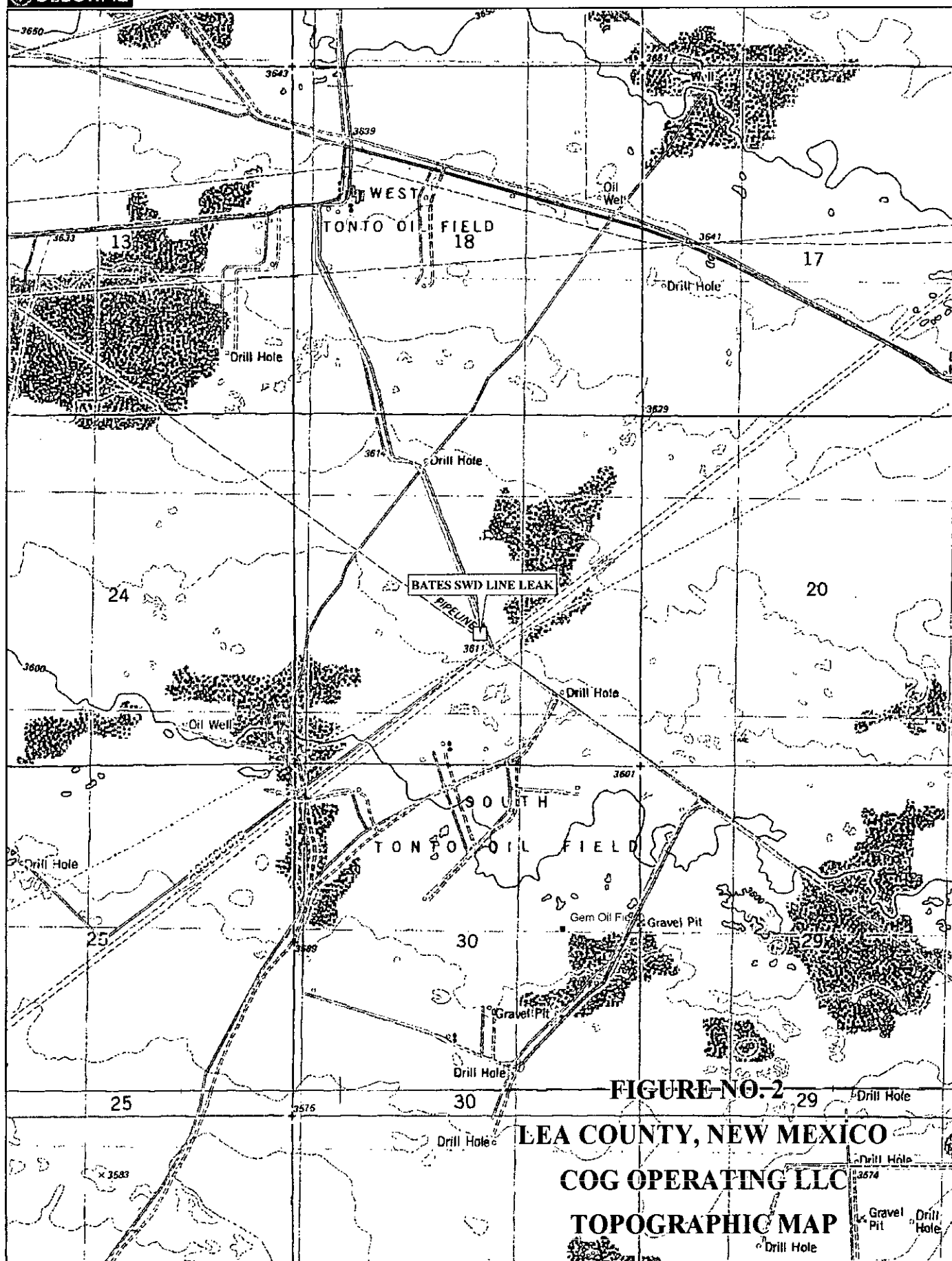
If you require any additional information or have any questions or comments concerning this report, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH


Ike Tavaréz, P.G.
Senior Project Manager

cc: Pat Ellis - COG
Paul Evans - BLM

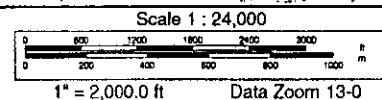


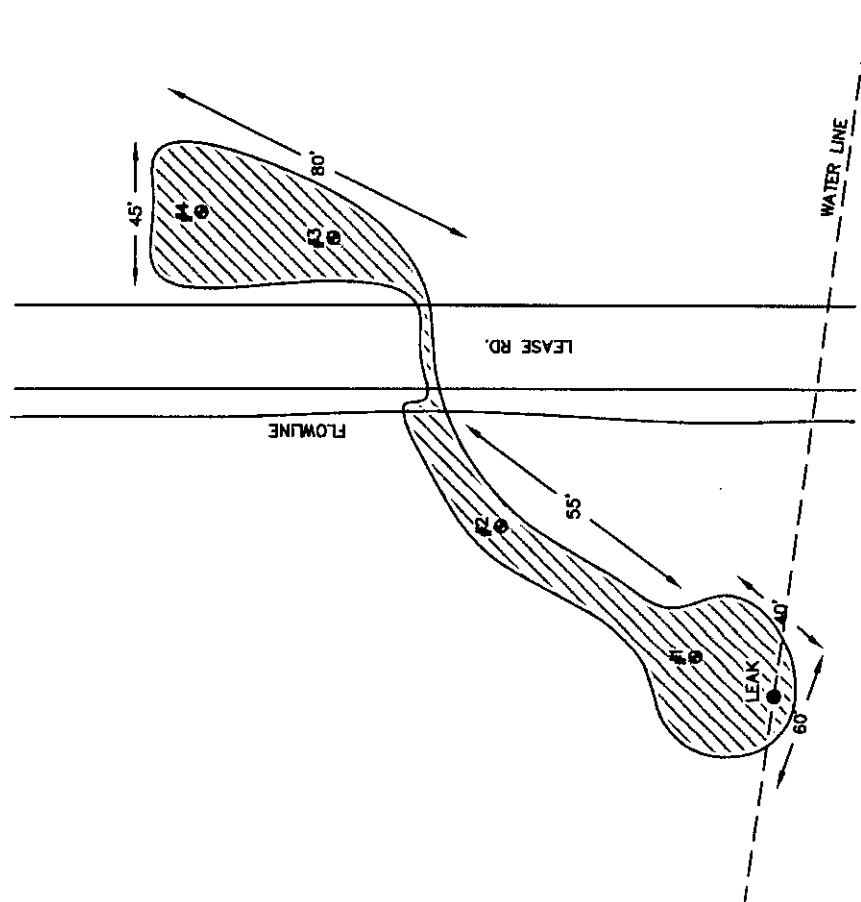


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☒ SPILL AREA
☐ SAMPLE LOCATIONS

FIGURE NO. 3

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

BATES SWD LINE LEAK

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 5/3/10

DATE: 8/1/80

FILE:
H:\DOCS\8400801
SUBS 2ND

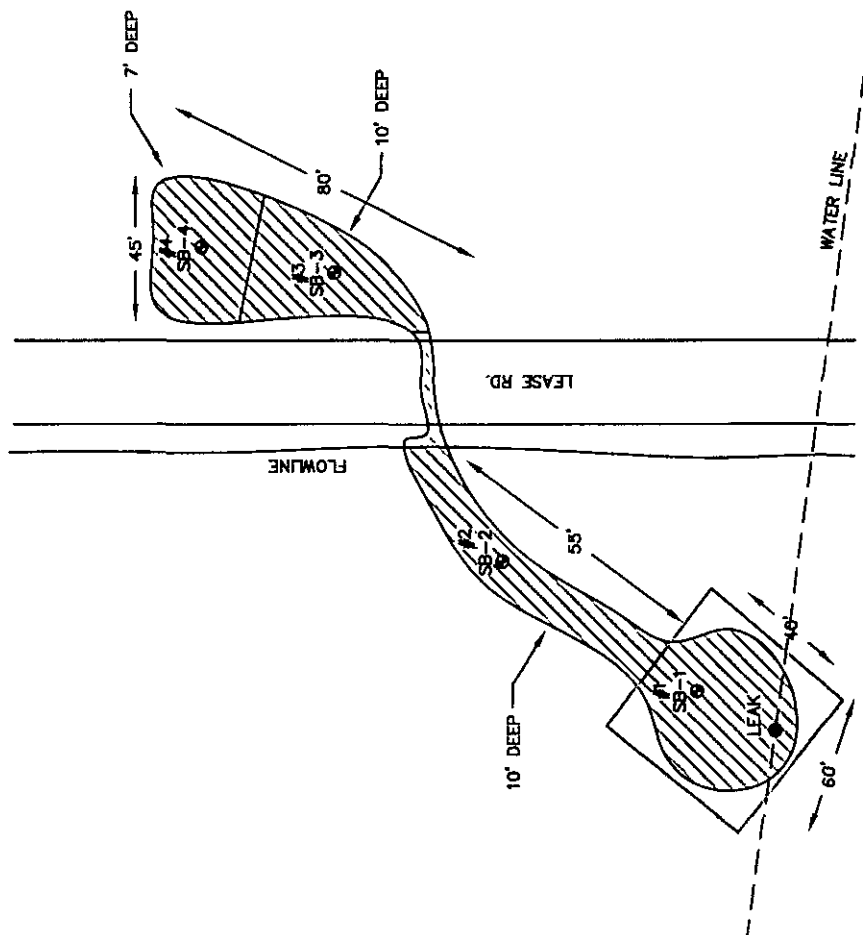


FIGURE NO. 4

LEA COUNTY, NEW MEXICO

COG OPERATING LLC

BATES SWD LINE LEAK

TETRA TECH, INC.
MIDLAND, TEXAS

DATE:
9/8/2011

DRAWN BY:
TM

FILE:
M:\COG\PROJECTS\BATES SWD

NOT TO SCALE

- ☒ SPILL AREA
- ☒ EXCAVATION AREA
- ☐ LINER INSTALLED
- ☒ AUGER HOLE SAMPLE LOCATIONS
- ☒ SOIL BORING LOCATIONS

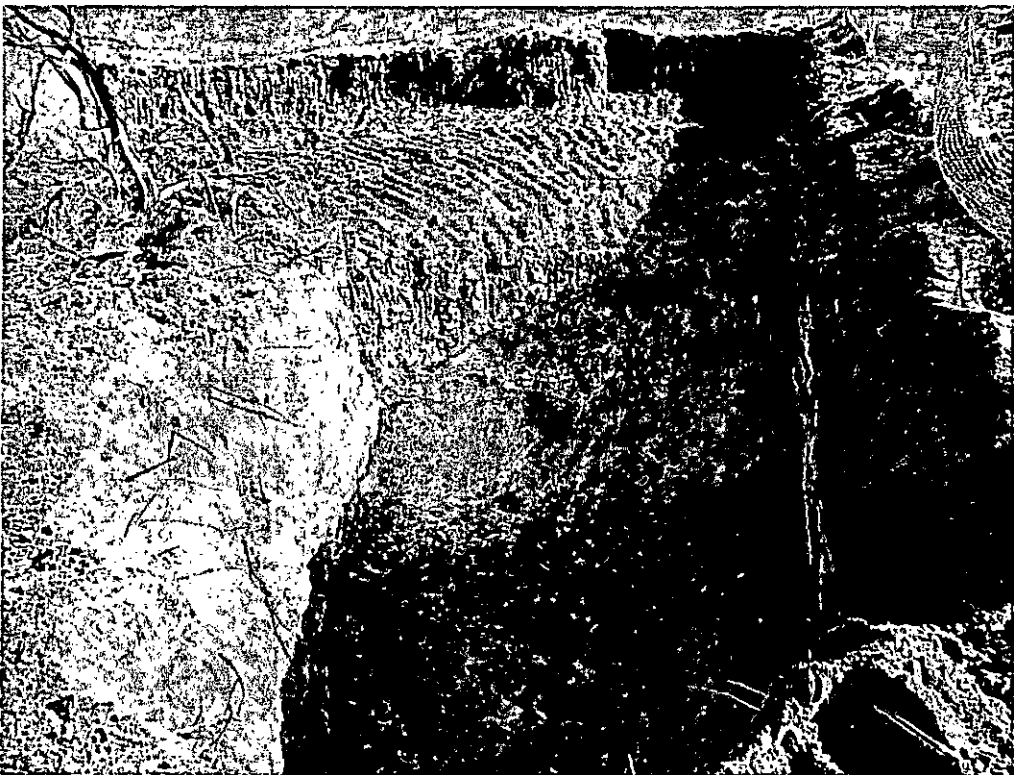
COG Operating LLC
Bates SWD
Lea County, New Mexico



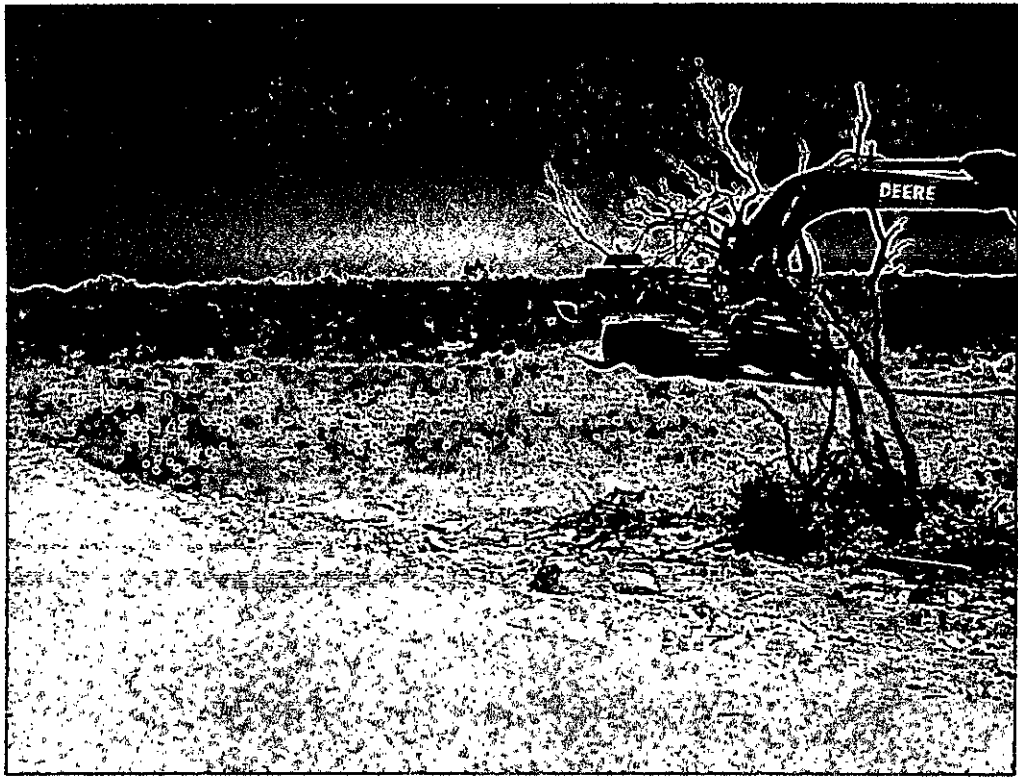
TETRA TECH



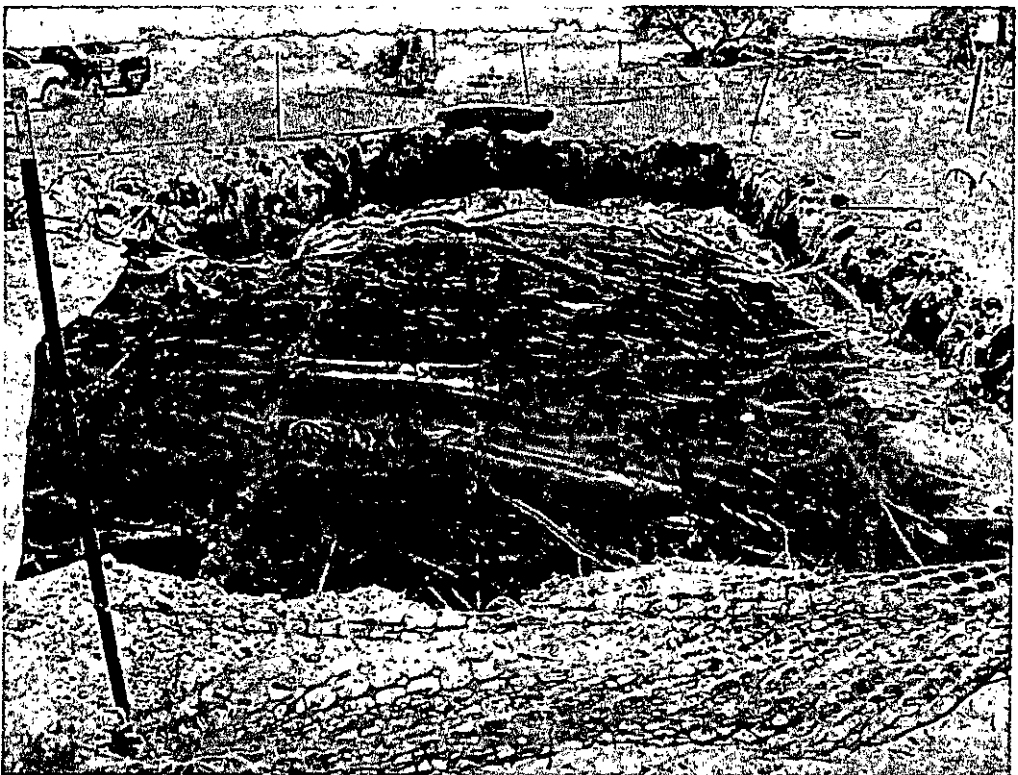
View West – AH-1 and 2



View North – AH-3 and 4



View East - Backfill

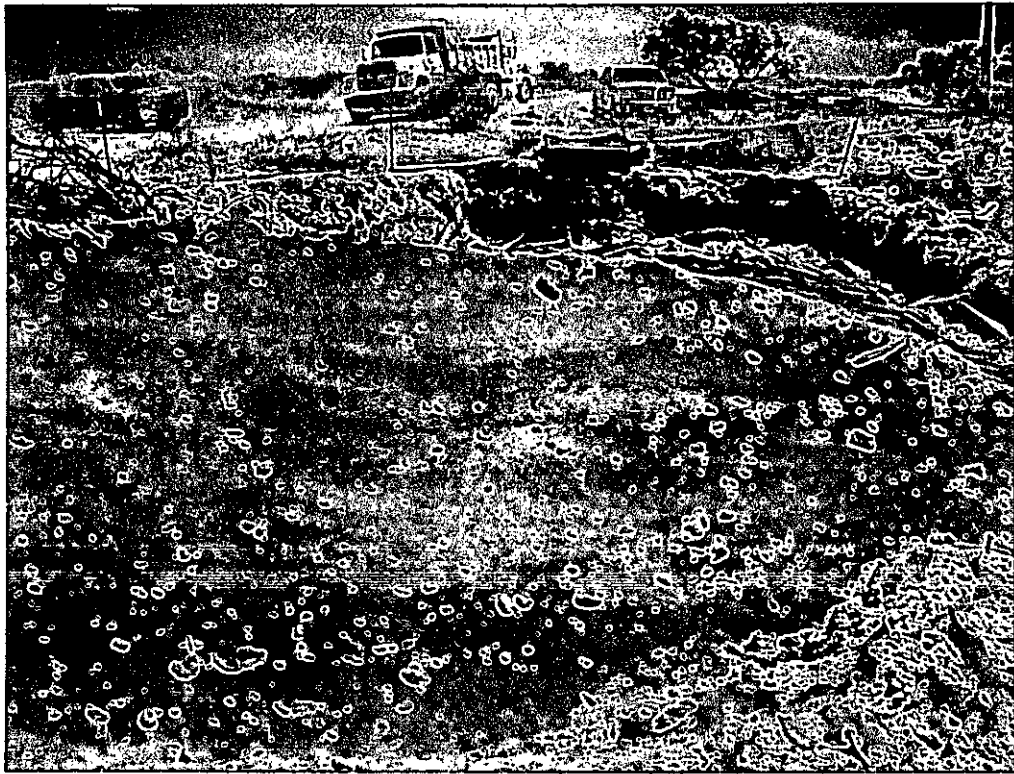


View South - Liner

COG Operating LLC
Bates SWD
Lea County, New Mexico



TETRA TECH



View South - Backfill

Site info and picture details

Table 1
COG Operating LLC.
Bates SWD Line Leak
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	5/3/2010	0-1'	1'		X	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	4,830
		1-1.5'	1'		X	-	-	-	-	-	-	-	5,540
		2-2.5'	1'		X	-	-	-	-	-	-	-	9,280
		3-3.5'	1'		X	-	-	-	-	-	-	-	9,500
		4-4.5'	1'		X	-	-	-	-	-	-	-	10,400
		5-5.5'	1'		X	-	-	-	-	-	-	-	6,770
SB-1	8/2/2010	1'	0.5'		X	<2.00	<50.0	<50.0	-	-	-	-	287
		3'	0.5'		X	-	-	-	-	-	-	-	3,960
		5'	0.5'		X	-	-	-	-	-	-	-	11,900
		7'	0.5'		X	-	-	-	-	-	-	-	12,600
		10'	0.5'		X	-	-	-	-	-	-	-	7,790
		15'	0.5'	X		-	-	-	-	-	-	-	4,590
		20'	0.5'	X		-	-	-	-	-	-	-	1,080
		25'	0.5'	X		-	-	-	-	-	-	-	221
		30'	0.5'	X		-	-	-	-	-	-	-	354
		40'	0.5'	X		-	-	-	-	-	-	-	234

Table 1
COG Operating LLC.
Bates SWD Line Leak
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-2	5/3/2010	0-1'	2'		X	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	5,130
		1-1.5'	2'		X	-	-	-	-	-	-	-	9,510
		2-2.5'	2'		X	-	-	-	-	-	-	-	6,280
		3-3.5'	2'		X	-	-	-	-	-	-	-	8,620
		4-4.5'	2'		X	-	-	-	-	-	-	-	11,100
		5-5.5'	2'		X	-	-	-	-	-	-	-	6,730
		5.5-6'	2'		X	-	-	-	-	-	-	-	5,670
SB-2	8/2/2010	1'	0.5'		X	<2.00	<50.0	<50.0	-	-	-	-	483
		3'	0.5'		X	-	-	-	-	-	-	-	207
		5'	0.5'		X	-	-	-	-	-	-	-	11,600
		7'	0.5'		X	-	-	-	-	-	-	-	12,100
		10'	0.5'		X	-	-	-	-	-	-	-	7,630
		15'	0.5'	X		-	-	-	-	-	-	-	1,720
		20'	0.5'	X		-	-	-	-	-	-	-	288
		25'	0.5'	X		-	-	-	-	-	-	-	211

Table 1

COG Operating LLC.

Bates SWD Line Leak

Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-3	5/3/2010	0-1'	2'		X	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	8,200
		1-1.5'	2'		X	-	-	-	-	-	-	-	5,520
		2-2.5'	2'		X	-	-	-	-	-	-	-	6,760
		3-3.5'	2'		X	-	-	-	-	-	-	-	3,860
		3.5-4'	2'		X	-	-	-	-	-	-	-	2,830
SB-3	8/2/2010	1'	0.5'		X	<2.00	<50.0	<50.0	-	-	-	-	301
		3'	0.5'		X	-	-	-	-	-	-	-	404
		5'	0.5'		X	-	-	-	-	-	-	-	10,200
		7'	0.5'		X	-	-	-	-	-	-	-	11,800
		10'	0.5'		X	-	-	-	-	-	-	-	6,110
		15'	0.5'	X		-	-	-	-	-	-	-	5,110
		20'	0.5'	X		-	-	-	-	-	-	-	706
		25'	0.5'	X		-	-	-	-	-	-	-	355
		30'	0.5'	X		-	-	-	-	-	-	-	355

Table 1
COG Operating LLC.
Bates SWD Line Leak
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-4	5/3/2010	0-1'	2'		X	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	13,000
		1-1.5'	2'		X	-	-	-	-	-	-	-	6,430
		2-2.5'	2'		X	-	-	-	-	-	-	-	3,030
		3-3.5'	2'	X		-	-	-	-	-	-	-	<200
		4-4.5'	2'	X		-	-	-	-	-	-	-	<200
		5-5.5'	2'	X		-	-	-	-	-	-	-	<200
SB-4	8/2/2010	1'	0.5'		X	<2.00	<50.0	<50.0	-	-	-	-	378
		3'	0.5'		X	-	-	-	-	-	-	-	1,690
		5'	0.5'		X	-	-	-	-	-	-	-	4,490
		7'	0.5'	X		-	-	-	-	-	-	-	746
		10'	0.5'	X		-	-	-	-	-	-	-	511
		15'	0.5'	X		-	-	-	-	-	-	-	258
		20'	0.5'	X		-	-	-	-	-	-	-	218

BEB Below Excavation Bottom
 (--) Not Analyzed
 Excavation Depths
 Liner Installation Depth

Water Well Data
Average Depth to Groundwater (ft)
COG - Bates Federal SWD

18 South			32 East		
6	5	4	65	3	2
7	460	8	9	10	11
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South			33 East		
6	5	4	3	2	1
7	8	100	9	10	11
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South			34 East		
6	5	4	3	2	1
130	105	87	102	107	115
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

19 South			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

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

19 South			34 East		
6	244	5	4	3	2
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

20 South			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

20 South			33 East		
6	5	278	4	3	2
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

20 South			34 East		
6	5	4	125	3	2
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

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
 Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed Temparay well to establish depth to groundwater

Summary Report

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

Report Date: May 17, 2010

Work Order: 10050408



Project Location: Lea County, NM
Project Name: COG/Bates SWD Line Leak
Project Number: 114-6400501

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
230430	AH-1 0-1' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230431	AH-1 1-1.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230432	AH-1 2-2.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230433	AH-1 3-3.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230434	AH-1 4-4.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230435	AH-1 5-5.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230437	AH-2 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230438	AH-2 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230439	AH-2 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230440	AH-2 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230441	AH-2 4-4.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230442	AH-2 5-5.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230443	AH-2 5.5-6' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230444	AH-3 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230445	AH-3 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230446	AH-3 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230447	AH-3 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230448	AH-3 3.5-4' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230449	AH-4 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230450	AH-4 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230451	AH-4 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230452	AH-4 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230453	AH-4 4-4.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230461	AH-4 5-5.5'	soil	2010-05-03	00:00	2010-05-03

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)
230430 - AH-1 0-1' 1' BEB	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
230437 - AH-2 0-1' 2' BEB	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
230444 - AH-3 0-1' 2' BEB	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00
230449 - AH-4 0-1' 2' BEB	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	<1.00

Sample: 230430 - AH-1 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		4830	mg/Kg	4.00

Sample: 230431 - AH-1 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		5540	mg/Kg	4.00

Sample: 230432 - AH-1 2-2.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		9280	mg/Kg	4.00

Sample: 230433 - AH-1 3-3.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		9500	mg/Kg	4.00

Sample: 230434 - AH-1 4-4.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		10400	mg/Kg	4.00

Sample: 230435 - AH-1 5-5.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		6770	mg/Kg	4.00

Sample: 230437 - AH-2 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		5130	mg/Kg	4.00

Sample: 230438 - AH-2 1-1.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		9510	mg/Kg	4.00

Sample: 230439 - AH-2 2-2.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		6280	mg/Kg	4.00

Sample: 230440 - AH-2 3-3.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		8620	mg/Kg	4.00

Sample: 230441 - AH-2 4-4.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		11100	mg/Kg	4.00

Sample: 230442 - AH-2 5-5.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		6730	mg/Kg	4.00

Sample: 230443 - AH-2 5.5-6' 2' BEB

Param	Flag	Result	Units	RL
Chloride		5670	mg/Kg	4.00

Sample: 230444 - AH-3 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		8200	mg/Kg	4.00

Sample: 230445 - AH-3 1-1.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		5520	mg/Kg	4.00

Sample: 230446 - AH-3 2-2.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		6760	mg/Kg	4.00

Sample: 230447 - AH-3 3-3.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		3860	mg/Kg	4.00

Sample: 230448 - AH-3 3.5-4' 2' BEB

Param	Flag	Result	Units	RL
Chloride		2830	mg/Kg	4.00

Sample: 230449 - AH-4 0-1' 2' BEB

Param	Flag	Result	Units	RL
Chloride		13000	mg/Kg	4.00

Sample: 230450 - AH-4 1-1.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		6430	mg/Kg	4.00

Sample: 230451 - AH-4 2-2.5' 2' BEB

Param	Flag	Result	Units	RL
Chloride		3030	mg/Kg	4.00

Sample: 230452 - AH-4 3-3.5' 2' BEB

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

Sample: 230453 - AH-4 4-4.5' 2' BEB

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

Sample: 230461 - AH-4 5-5.5'

Param	Flag	Result	Units	RL
Chloride		<200	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 DBE: VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

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

Analytical and Quality Control Report

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

Report Date: May 17, 2010

Work Order: 10050408



Project Location: Lea County, NM
Project Name: COG/Bates SWD Line Leak
Project Number: 114-6400501

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
230430	AH-1 0-1' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230431	AH-1 1-1.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230432	AH-1 2-2.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230433	AH-1 3-3.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230434	AH-1 4-4.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230435	AH-1 5-5.5' 1' BEB	soil	2010-05-03	00:00	2010-05-03
230437	AH-2 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230438	AH-2 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230439	AH-2 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230440	AH-2 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
230441	AH-2 4-4.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230442	AH-2 5-5.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230443	AH-2 5.5-6' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230444	AH-3 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230445	AH-3 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230446	AH-3 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230447	AH-3 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230448	AH-3 3.5-4' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230449	AH-4 0-1' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230450	AH-4 1-1.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230451	AH-4 2-2.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230452	AH-4 3-3.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230453	AH-4 4-4.5' 2' BEB	soil	2010-05-03	00:00	2010-05-03
230461	AH-4 5-5.5'	soil	2010-05-03	00:00	2010-05-03

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/Bates SWD Line Leak were received by TraceAnalysis, Inc. on 2010-05-03 and assigned to work order 10050408. Samples for work order 10050408 were received intact at a temperature of 2.5 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	59700	2010-05-05 at 16:00	69742	2010-05-06 at 01:02
Chloride (Titration)	SM 4500-Cl B	59847	2010-05-06 at 10:00	69919	2010-05-17 at 16:00
Chloride (Titration)	SM 4500-Cl B	59847	2010-05-06 at 10:00	69978	2010-05-12 at 11:26
Chloride (Titration)	SM 4500-Cl B	59904	2010-05-06 at 09:47	70006	2010-05-13 at 16:17
TPH DRO - NEW	S 8015 D	59658	2010-05-04 at 13:43	69699	2010-05-04 at 13:43
TPH GRO	S 8015 D	59700	2010-05-05 at 16:00	69743	2010-05-06 at 01:30

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 10050408 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: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

Page Number: 4 of 24
Lea County, NM

Analytical Report

Sample: 230430 - AH-1 0-1' 1' BEB

Laboratory: Midland
Analysis: BTEX
QC Batch: 69742
Prep Batch: 59700

Analytical Method: S 8021B
Date Analyzed: 2010-05-06
Sample Preparation: 2010-05-05

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)	1	1.09	mg/Kg	1	2.00	54	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		0.985	mg/Kg	1	2.00	49	43.1 - 158.4

Sample: 230430 - AH-1 0-1' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 69919
Prep Batch: 59847

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-05-17
Sample Preparation: 2010-05-06

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4830	mg/Kg	50	4.00

Sample: 230430 - AH-1 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 69699
Prep Batch: 59658

Analytical Method: S 8015 D
Date Analyzed: 2010-05-04
Sample Preparation: 2010-05-04

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

¹SPECIAL - TFT is out of control limits due to an unknown anomaly. However, 4-BFB is within control limits and shows the method to be in control. •

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

Page Number: 5 of 24
Lea County, NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		81.2	mg/Kg	1	100	81	70 - 130

Sample: 230430 - AH-1 0-1' 1' BEB

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 69743
Prep Batch: 59700

Analytical Method: S 8015 D
Date Analyzed: 2010-05-06
Sample Preparation: 2010-05-05

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)		1.09	mg/Kg	1	2.00	54	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.14	mg/Kg	1	2.00	57	51.7 - 131.1

Sample: 230431 - AH-1 1-1.5' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 69919
Prep Batch: 59847

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-05-17
Sample Preparation: 2010-05-06

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5540	mg/Kg	50	4.00

Sample: 230432 - AH-1 2-2.5' 1' BEB

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 69919
Prep Batch: 59847

Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-05-17
Sample Preparation: 2010-05-06

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9280	mg/Kg	100	4.00

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

Page Number: 6 of 24
Lea County, NM

Sample: 230433 - AH-1 3-3.5' 1' BEB

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	69919	Date Analyzed:	2010-05-17
Prep Batch:	59847	Sample Preparation:	2010-05-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9500	mg/Kg	100	4.00

Sample: 230434 - AH-1 4-4.5' 1' BEB

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	69919	Date Analyzed:	2010-05-17
Prep Batch:	59847	Sample Preparation:	2010-05-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		10400	mg/Kg	100	4.00

Sample: 230435 - AH-1 5-5.5' 1' BEB

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	69919	Date Analyzed:	2010-05-17
Prep Batch:	59847	Sample Preparation:	2010-05-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6770	mg/Kg	100	4.00

Sample: 230437 - AH-2 0-1' 2' BEB

Laboratory:	Midland		
Analysis:	BTEX	Analytical Method:	S 8021B
QC Batch:	69742	Date Analyzed:	2010-05-06
Prep Batch:	59700	Sample Preparation:	2010-05-05
		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

continued ...

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

Page Number: 7 of 24
Lea County, NM

sample 230437 continued ...

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.35	mg/Kg	1	2.00	68	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.21	mg/Kg	1	2.00	60	43.1 - 158.4

Sample: 230437 - AH-2 0-1' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69919 Date Analyzed: 2010-05-17 Analyzed By: AR
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5130	mg/Kg	100	4.00

Sample: 230437 - AH-2 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 69699 Date Analyzed: 2010-05-04 Analyzed By: kg
Prep Batch: 59658 Sample Preparation: 2010-05-04 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		87.4	mg/Kg	1	100	87	70 - 130

Sample: 230437 - AH-2 0-1' 2' BEB

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 69743 Date Analyzed: 2010-05-06 Analyzed By: AG
Prep Batch: 59700 Sample Preparation: 2010-05-05 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.34	mg/Kg	1	2.00	67	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.35	mg/Kg	1	2.00	68	51.7 - 131.1

Sample: 230438 - AH-2 1-1.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9510	mg/Kg	100	4.00

Sample: 230439 - AH-2 2-2.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6280	mg/Kg	100	4.00

Sample: 230440 - AH-2 3-3.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8620	mg/Kg	100	4.00

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Sample: 230441 - AH-2 4-4.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-12	Analyzed By:	AG
QC Batch:	69978	Sample Preparation:	2010-05-06	Prepared By:	AG
Prep Batch:	59847				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11100	mg/Kg	100	4.00

Sample: 230442 - AH-2 5-5.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-12	Analyzed By:	AG
QC Batch:	69978	Sample Preparation:	2010-05-06	Prepared By:	AG
Prep Batch:	59847				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6730	mg/Kg	100	4.00

Sample: 230443 - AH-2 5.5-6' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-12	Analyzed By:	AG
QC Batch:	69978	Sample Preparation:	2010-05-06	Prepared By:	AG
Prep Batch:	59847				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5670	mg/Kg	100	4.00

Sample: 230444 - AH-3 0-1' 2' BEB

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2010-05-06	Analyzed By:	AG
QC Batch:	69742	Sample Preparation:	2010-05-05	Prepared By:	AG
Prep Batch:	59700				

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.54	mg/Kg	1	2.00	77	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.39	mg/Kg	1	2.00	70	43.1 - 158.4

Sample: 230444 - AH-3 0-1' 2' BEB

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2010-05-12	Analyzed By: AG
QC Batch: 69978	Sample Preparation: 2010-05-06	Prepared By: AG
Prep Batch: 59847		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8200	mg/Kg	100	4.00

Sample: 230444 - AH-3 0-1' 2' BEB

Laboratory: Midland	Analytical Method: S 8015 D	Prep Method: N/A
Analysis: TPH DRO - NEW	Date Analyzed: 2010-05-04	Analyzed By: kg
QC Batch: 69699	Sample Preparation: 2010-05-04	Prepared By: kg
Prep Batch: 59658		

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		93.2	mg/Kg	1	100	93	70 - 130

Sample: 230444 - AH-3 0-1' 2' BEB

Laboratory: Midland	Analytical Method: S 8015 D	Prep Method: S 5035
Analysis: TPH GRO	Date Analyzed: 2010-05-06	Analyzed By: AG
QC Batch: 69743	Sample Preparation: 2010-05-05	Prepared By: AG
Prep Batch: 59700		

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.54	mg/Kg	1	2.00	77	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.54	mg/Kg	1	2.00	77	51.7 - 131.1

Sample: 230445 - AH-3 1-1.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5520	mg/Kg	100	4.00

Sample: 230446 - AH-3 2-2.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6760	mg/Kg	100	4.00

Sample: 230447 - AH-3 3-3.5' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 69978 Date Analyzed: 2010-05-12 Analyzed By: AG
Prep Batch: 59847 Sample Preparation: 2010-05-06 Prepared By: AG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3860	mg/Kg	100	4.00

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Sample: 230448 - AH-3 3.5-4' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 70006 Date Analyzed: 2010-05-13 Analyzed By: AR
Prep Batch: 59904 Sample Preparation: 2010-05-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		2830	mg/Kg	100	4.00

Sample: 230449 - AH-4 0-1' 2' BEB

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 69742 Date Analyzed: 2010-05-06 Analyzed By: AG
Prep Batch: 59700 Sample Preparation: 2010-05-05 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.46	mg/Kg	1	2.00	73	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.32	mg/Kg	1	2.00	66	43.1 - 158.4

Sample: 230449 - AH-4 0-1' 2' BEB

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 70006 Date Analyzed: 2010-05-13 Analyzed By: AR
Prep Batch: 59904 Sample Preparation: 2010-05-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		13000	mg/Kg	100	4.00

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Sample: 230449 - AH-4 0-1' 2' BEB

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-05-04	Analyzed By:	kg
QC Batch:	69699	Sample Preparation:	2010-05-04	Prepared By:	kg
Prep Batch:	59658				

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		90.4	mg/Kg	1	100	90	70 - 130

Sample: 230449 - AH-4 0-1' 2' BEB

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-05-06	Analyzed By:	AG
QC Batch:	69743	Sample Preparation:	2010-05-05	Prepared By:	AG
Prep Batch:	59700				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.45	mg/Kg	1	2.00	72	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.46	mg/Kg	1	2.00	73	51.7 - 131.1

Sample: 230450 - AH-4 1-1.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-13	Analyzed By:	AR
QC Batch:	70006	Sample Preparation:	2010-05-06	Prepared By:	AR
Prep Batch:	59904				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6430	mg/Kg	100	4.00

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Sample: 230451 - AH-4 2-2.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-13	Analyzed By:	AR
QC Batch:	70006	Sample Preparation:	2010-05-06	Prepared By:	AR
Prep Batch:	59904				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3030	mg/Kg	100	4.00

Sample: 230452 - AH-4 3-3.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-13	Analyzed By:	AR
QC Batch:	70006	Sample Preparation:	2010-05-06	Prepared By:	AR
Prep Batch:	59904				

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

Sample: 230453 - AH-4 4-4.5' 2' BEB

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-13	Analyzed By:	AR
QC Batch:	70006	Sample Preparation:	2010-05-06	Prepared By:	AR
Prep Batch:	59904				

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

Sample: 230461 - AH-4 5-5.5'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-05-13	Analyzed By:	AR
QC Batch:	70006	Sample Preparation:	2010-05-06	Prepared By:	AR
Prep Batch:	59904				

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

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Method Blank (1) QC Batch: 69699

QC Batch: 69699
Prep Batch: 59658

Date Analyzed: 2010-05-04
QC Preparation: 2010-05-04

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		78.7	mg/Kg	1	100	79	70 - 130

Method Blank (1) QC Batch: 69742

QC Batch: 69742
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

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)		1.84	mg/Kg	1	2.00	92	64.9 - 142.7
4-Bromofluorobenzene (4-BFB)		1.40	mg/Kg	1	2.00	70	43.9 - 141.9

Method Blank (1) QC Batch: 69743

QC Batch: 69743
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

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)		1.84	mg/Kg	1	2.00	92	66.2 - 145
4-Bromofluorobenzene (4-BFB)		1.55	mg/Kg	1	2.00	78	62 - 120.5

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Method Blank (1) QC Batch: 69919

QC Batch: 69919
Prep Batch: 59847

Date Analyzed: 2010-05-17
QC Preparation: 2010-05-06

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 69978

QC Batch: 69978
Prep Batch: 59847

Date Analyzed: 2010-05-12
QC Preparation: 2010-05-06

Analyzed By: AG
Prepared By: AR

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

Method Blank (1) QC Batch: 70006

QC Batch: 70006
Prep Batch: 59904

Date Analyzed: 2010-05-13
QC Preparation: 2010-05-06

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: 69699
Prep Batch: 59658

Date Analyzed: 2010-05-04
QC Preparation: 2010-05-04

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	276	mg/Kg	1	250	<5.86	110	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	277	mg/Kg	1	250	<5.86	111	57.4 - 133.4	0	20

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

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	95.8	95.9	mg/Kg	1	100	96	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 69742
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.98	mg/Kg	1	2.00	<0.00410	99	75.4 - 115.7
Toluene	1.96	mg/Kg	1	2.00	<0.00310	98	78.4 - 113.6
Ethylbenzene	1.89	mg/Kg	1	2.00	<0.00240	94	76 - 114.2
Xylene	5.72	mg/Kg	1	6.00	<0.00650	95	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.96	mg/Kg	1	2.00	<0.00410	98	75.4 - 115.7	1	20
Toluene	1.93	mg/Kg	1	2.00	<0.00310	96	78.4 - 113.6	2	20
Ethylbenzene	1.90	mg/Kg	1	2.00	<0.00240	95	76 - 114.2	0	20
Xylene	5.71	mg/Kg	1	6.00	<0.00650	95	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)	1.77	1.89	mg/Kg	1	2.00	88	94	65 - 142.9
4-Bromofluorobenzene (4-BFB)	1.71	1.80	mg/Kg	1	2.00	86	90	43.8 - 144.9

Laboratory Control Spike (LCS-1)

QC Batch: 69743
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	14.6	mg/Kg	1	20.0	<0.396	73	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	15.1	mg/Kg	1	20.0	<0.396	76	52.5 - 114.3	3	20

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

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.77	1.90	mg/Kg	1	2.00	88	95	66.2 - 148.7
4-Bromofluorobenzene (4-BFB)	1.76	1.87	mg/Kg	1	2.00	88	94	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch: 69919
Prep Batch: 59847

Date Analyzed: 2010-05-17
QC Preparation: 2010-05-06

Analyzed By: AR
Prepared By: AR

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

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.6	mg/Kg	1	100	<2.18	100	85 - 115	0	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: 69978
Prep Batch: 59847

Date Analyzed: 2010-05-12
QC Preparation: 2010-05-06

Analyzed By: AG
Prepared By: AR

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

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115	3	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: 70006
Prep Batch: 59904

Date Analyzed: 2010-05-13
QC Preparation: 2010-05-06

Analyzed By: AR
Prepared By: AR

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

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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	3	20

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

Matrix Spike (MS-1) Spiked Sample: 230449

QC Batch: 69699
Prep Batch: 59658

Date Analyzed: 2010-05-04
QC Preparation: 2010-05-04

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	217	mg/Kg	1	250	<5.86	87	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	212	mg/Kg	1	250	<5.86	85	35.2 - 167.1	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	85.8	85.3	mg/Kg	1	100	86	85	70 - 130

Matrix Spike (MS-1) Spiked Sample: 230657

QC Batch: 69742
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.01	mg/Kg	1	2.00	<0.00410	100	57.7 - 140.7
Toluene	2.20	mg/Kg	1	2.00	0.1688	102	53.4 - 146.6
Ethylbenzene	2.17	mg/Kg	1	2.00	0.1365	102	62.1 - 141.6
Xylene	6.63	mg/Kg	1	6.00	0.5222	102	61.2 - 142.7

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.96	mg/Kg	1	2.00	<0.00410	98	57.7 - 140.7	2	20
Toluene	2.13	mg/Kg	1	2.00	0.1688	98	53.4 - 146.6	3	20
Ethylbenzene	2.14	mg/Kg	1	2.00	0.1365	100	62.1 - 141.6	1	20

continued ...

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
COG/Bates SWD Line Leak

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matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Xylene	6.48	mg/Kg	1	6.00	0.5222	99	61.2 - 142.7	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.85	1.95	mg/Kg	1	2	92	98	61.7 - 139.6
4-Bromofluorobenzene (4-BFB)	1.93	2.04	mg/Kg	1	2	96	102	49.6 - 146.7

Matrix Spike (MS-1) Spiked Sample: 230654

QC Batch: 69743
Prep Batch: 59700

Date Analyzed: 2010-05-06
QC Preparation: 2010-05-05

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	208	mg/Kg	5	50.0	158	100	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	214	mg/Kg	5	50.0	158	112	10 - 198.3	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.02	4.92	mg/Kg	5	5	100	98	65.5 - 143
4-Bromofluorobenzene (4-BFB)	6.26	6.44	mg/Kg	5	5	125	129	58.6 - 140

Matrix Spike (MS-1) Spiked Sample: 230437

QC Batch: 69919
Prep Batch: 59847

Date Analyzed: 2010-05-17
QC Preparation: 2010-05-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	16400	mg/Kg	100	10000	5130	113	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	16500	mg/Kg	100	10000	5130	114	85 - 115	1	20

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

Report Date: May 17, 2010
114-6400501

Work Order: 10050408
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Matrix Spike (MS-1) Spiked Sample: 230447

QC Batch: 69978
Prep Batch: 59847

Date Analyzed: 2010-05-12
QC Preparation: 2010-05-06

Analyzed By: AG
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	13700	mg/Kg	100	10000	3860	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	13800	mg/Kg	100	10000	3860	99	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: 230480

QC Batch: 70006
Prep Batch: 59904

Date Analyzed: 2010-05-13
QC Preparation: 2010-05-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14900	mg/Kg	100	10000	5150	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	15000	mg/Kg	100	10000	5150	98	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: 69699

Date Analyzed: 2010-05-04

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	286	114	80 - 120	2010-05-04

Standard (CCV-2)

QC Batch: 69699

Date Analyzed: 2010-05-04

Analyzed By: kg

Report Date: May 17, 2010
114-6400501

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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	273	109	80 - 120	2010-05-04

Standard (CCV-3)

QC Batch: 69699

Date Analyzed: 2010-05-04

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	297	119	80 - 120	2010-05-04

Standard (CCV-1)

QC Batch: 69742

Date Analyzed: 2010-05-06

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	0.0990	99	80 - 120	2010-05-06
Toluene		mg/Kg	0.100	0.0978	98	80 - 120	2010-05-06
Ethylbenzene		mg/Kg	0.100	0.0946	95	80 - 120	2010-05-06
Xylene		mg/Kg	0.300	0.287	96	80 - 120	2010-05-06

Standard (CCV-2)

QC Batch: 69742

Date Analyzed: 2010-05-06

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	0.0959	96	80 - 120	2010-05-06
Toluene		mg/Kg	0.100	0.0942	94	80 - 120	2010-05-06
Ethylbenzene		mg/Kg	0.100	0.0901	90	80 - 120	2010-05-06
Xylene		mg/Kg	0.300	0.270	90	80 - 120	2010-05-06

Standard (CCV-1)

QC Batch: 69743

Date Analyzed: 2010-05-06

Analyzed By: AG

Report Date: May 17, 2010
114-6400501

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.894	89	80 - 120	2010-05-06

Standard (CCV-2)

QC Batch: 69743

Date Analyzed: 2010-05-06

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.994	99	80 - 120	2010-05-06

Standard (ICV-1)

QC Batch: 69919

Date Analyzed: 2010-05-17

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.4	99	85 - 115	2010-05-17

Standard (CCV-1)

QC Batch: 69919

Date Analyzed: 2010-05-17

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-05-17

Standard (ICV-1)

QC Batch: 69978

Date Analyzed: 2010-05-12

Analyzed By: AG

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	104	104	85 - 115	2010-05-12

Standard (CCV-1)

QC Batch: 69978

Date Analyzed: 2010-05-12

Analyzed By: AG

Report Date: May 17, 2010
114-6400501

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	96.0	96	85 - 115	2010-05-12

Standard (ICV-1)

QC Batch: 70006

Date Analyzed: 2010-05-13

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-05-13

Standard (CCV-1)

QC Batch: 70006

Date Analyzed: 2010-05-13

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	2010-05-13

Analysis Request of Chain of Custody Record

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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: C061		SITE MANAGER: IKr Tavarre		PRESERVATIVE METHOD	
PROJECT NO.: 141-1005-01		PROJECT NAME: C061/13115 SWD Line Lock		NUMBER OF CONTAINERS	
LAB I.D. NUMBER		DATE		TIME	
280480		5/3		2010	
431					
432					
433					
434					
435					
436					
437					
438					
439					
RELINQUISHED BY (Signature)		RECEIVED BY (Signature)		DATE: 5-3-10	
RELINQUISHED BY (Signature)		RECEIVED BY (Signature)		DATE: 10-15	
RELINQUISHED BY (Signature)		RECEIVED BY (Signature)		DATE:	
RELINQUISHED BY (Signature)		RECEIVED BY (Signature)		DATE:	
RECEIVING LABORATORY:		STATE: TX		PHONE:	
ADDRESS: Midland		ZIP:		DATE:	
CONTACT:					
SAMPLE CONDITION WHEN RECEIVED:					
259 C in back					
REMARKS: If total TPH exceeds 5,000 mg/kg, run driver samples. If BTET exceeds 50 mg/kg, run driver samples. Bentine exceeds 10 mg/kg. Run driver samples.					

TX1006 (Ext. to C35)	TPH 8015 MOD	BTET 80218	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	Post 808/808	Chloride	Gamm Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
X	X	X															

RECEIVED BY (Signature) DATE: 5-3-10

RECEIVED BY (Signature) DATE: 10-15

RECEIVED BY (Signature) DATE:

RECEIVED BY (Signature) DATE:

RECEIVING LABORATORY:

ADDRESS:

CITY:

STATE:

ZIP:

PHONE:

DATE:

REMARKS:

Order #: 10030408

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

CLIENT NAME: <u>CCG</u>		SITE MANAGER: <u>Ike Tavaraz</u>										
PROJECT NO.: <u>14-0400501</u>		PROJECT NAME: <u>CCG / B. Trs Sub Line Creek</u>										
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMB	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD			
									HCL	HNO3	ICE	NONE
280440	5/3		S		X	AH-2 3'-3.5'	1			X		
441						AH-2 4'-4.5'						
442						AH-2 5'-5.5'						
443						AH-2 5.5'-6'						
444						AH-3 0'-1'						
445						AH-3 1'-1.5'						
446						AH-3 2'-2.5'						
447						AH-3 3'-3.5'						
448						AH-3 4'-4.5'						
449						AH-4 0'-1'						
RELINQUISHED BY: (Signature) <u>[Signature]</u> Date: <u>5-5-10</u> Time: <u>16:45</u> RECEIVED BY: (Signature) <u>[Signature]</u> Date: <u>5-5-10</u> Time: <u>16:45</u>												
RELINQUISHED BY: (Signature) <u>[Signature]</u> Date: <u>5-5-10</u> Time: <u>16:45</u> RECEIVED BY: (Signature) <u>[Signature]</u> Date: <u>5-5-10</u> Time: <u>16:45</u>												
RELINQUISHED BY: (Signature) <u>[Signature]</u> Date: <u>5-5-10</u> Time: <u>16:45</u> RECEIVED BY: (Signature) <u>[Signature]</u> Date: <u>5-5-10</u> Time: <u>16:45</u>												
RECEIVING LABORATORY: <u>Tetra</u> ADDRESS: <u>1910 N. Big Spring St.</u> CITY: <u>Midland</u> STATE: <u>TX</u> ZIP: <u>79705</u> PHONE: <u>(432) 682-4559</u> DATE: <u>5-5-10</u> TIME: <u>16:45</u>												
SAMPLE CONDITION WHEN RECEIVED: <u>25°C in dark</u> REMARKS: <u>if total TPH exceeds 5000 mg/kg run deeper samples if BTEX exceeds 50 mg/kg run deeper samples</u>												

Ike Tavaraz

25°C in dark if total TPH exceeds 5000 mg/kg run deeper samples if BTEX exceeds 50 mg/kg run deeper samples

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ANALYSIS REQUEST
(Circle or Specify Method No.)

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

[illegible]

SAMPLE CONDITION WHEN RECEIVED:		REMARKS:	
2.50	2.50	It total TPA records 5,000 mg/kg non deger samples	It Benzene exceeds 10mg/kg It BTEX exceeds 30 mg/kg Run dupes 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.

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

Summary Report

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

Report Date: August 10, 2010

Work Order: 10080511



Project Location: Lea County, NM
Project Name: COG/Bates SWD Line Leak
Project Number: 114-6400501

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
239815	SB-1 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239816	SB-1 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239817	SB-1 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239818	SB-1 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239819	SB-1 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239820	SB-1 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239821	SB-1 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239822	SB-1 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239823	SB-1 30' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239824	SB-1 40' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239825	SB-2 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239826	SB-2 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239827	SB-2 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239828	SB-2 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239829	SB-2 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239830	SB-2 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239831	SB-2 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239832	SB-2 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239833	SB-3 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239834	SB-3 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239835	SB-3 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239836	SB-3 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239837	SB-3 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239838	SB-3 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239839	SB-3 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239840	SB-3 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239841	SB-3 30' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239842	SB-4 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239843	SB-4 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239844	SB-4 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
239845	SB-4 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239846	SB-4 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239847	SB-4 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239848	SB-4 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04

Sample - Field Code	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
239815 - SB-1 1' (6 in. BEB)	<50.0	<2.00
239825 - SB-2 1' (6 in. BEB)	<50.0	<2.00
239833 - SB-3 1' (6 in. BEB)	<50.0	<2.00
239842 - SB-4 1' (6 in. BEB)	<50.0	<2.00

Sample: 239815 - SB-1 1' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		287	mg/Kg	4.00

Sample: 239816 - SB-1 3' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		3960	mg/Kg	4.00

Sample: 239817 - SB-1 5' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		11900	mg/Kg	4.00

Sample: 239818 - SB-1 7' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		12600	mg/Kg	4.00

Sample: 239819 - SB-1 10' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		7790	mg/Kg	4.00

Sample: 239820 - SB-1 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		4590	mg/Kg	4.00

Sample: 239821 - SB-1 20' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		1080	mg/Kg	4.00

Sample: 239822 - SB-1 25' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		221	mg/Kg	4.00

Sample: 239823 - SB-1 30' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		354	mg/Kg	4.00

Sample: 239824 - SB-1 40' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		234	mg/Kg	4.00

Sample: 239825 - SB-2 1' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		483	mg/Kg	4.00

Sample: 239826 - SB-2 3' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		207	mg/Kg	4.00

Sample: 239827 - SB-2 5' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00

Sample: 239828 - SB-2 7' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		12100	mg/Kg	4.00

Sample: 239829 - SB-2 10' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		7630	mg/Kg	4.00

Sample: 239830 - SB-2 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		1720	mg/Kg	4.00

Sample: 239831 - SB-2 20' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		288	mg/Kg	4.00

Sample: 239832 - SB-2 25' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		211	mg/Kg	4.00

Sample: 239833 - SB-3 1' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		301	mg/Kg	4.00

Sample: 239834 - SB-3 3' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		404	mg/Kg	4.00

Sample: 239835 - SB-3 5' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		10200	mg/Kg	4.00

Sample: 239836 - SB-3 7' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		11800	mg/Kg	4.00

Sample: 239837 - SB-3 10' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		6110	mg/Kg	4.00

Sample: 239838 - SB-3 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		5110	mg/Kg	4.00

Sample: 239839 - SB-3 20' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		706	mg/Kg	4.00

Sample: 239840 - SB-3 25' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		355	mg/Kg	4.00

Sample: 239841 - SB-3 30' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		355	mg/Kg	4.00

Sample: 239842 - SB-4 1' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		378	mg/Kg	4.00

Sample: 239843 - SB-4 3' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		1690	mg/Kg	4.00

Sample: 239844 - SB-4 5' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		4490	mg/Kg	4.00

Sample: 239845 - SB-4 7' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		746	mg/Kg	4.00

Sample: 239846 - SB-4 10' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		511	mg/Kg	4.00

Sample: 239847 - SB-4 15' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		258	mg/Kg	4.00

Sample: 239848 - SB-4 20' (6 in. BEB)

Param	Flag	Result	Units	RL
Chloride		218	mg/Kg	4.00



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Certifications

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

NELAP Certifications

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

Analytical and Quality Control Report

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

Report Date: August 10, 2010

Work Order: 10080511



Project Location: Lea County, NM
Project Name: COG/Bates SWD Line Leak
Project Number: 114-6400501

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
239815	SB-1 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239816	SB-1 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239817	SB-1 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239818	SB-1 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239819	SB-1 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239820	SB-1 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239821	SB-1 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239822	SB-1 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239823	SB-1 30' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239824	SB-1 40' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
239825	SB-2 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239826	SB-2 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239827	SB-2 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239828	SB-2 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239829	SB-2 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239830	SB-2 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239831	SB-2 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239832	SB-2 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239833	SB-3 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239834	SB-3 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239835	SB-3 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239836	SB-3 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239837	SB-3 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239838	SB-3 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239839	SB-3 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239840	SB-3 25' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239841	SB-3 30' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239842	SB-4 1' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239843	SB-4 3' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239844	SB-4 5' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239845	SB-4 7' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239846	SB-4 10' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239847	SB-4 15' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04
239848	SB-4 20' (6 in. BEB)	soil	2010-08-02	00:00	2010-08-04

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/Bates SWD Line Leak were received by TraceAnalysis, Inc. on 2010-08-04 and assigned to work order 10080511. Samples for work order 10080511 were received intact at a temperature of 7.3 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	62029	2010-08-05 at 10:27	72419	2010-08-06 at 15:24
Chloride (Titration)	SM 4500-Cl B	62060	2010-08-06 at 08:24	72420	2010-08-06 at 15:26
Chloride (Titration)	SM 4500-Cl B	62061	2010-08-06 at 08:24	72421	2010-08-06 at 15:26
Chloride (Titration)	SM 4500-Cl B	62062	2010-08-06 at 08:25	72449	2010-08-09 at 14:05
TPH DRO - NEW	S 8015 D	62054	2010-08-05 at 15:38	72394	2010-08-05 at 15:38
TPH GRO	S 8015 D	62082	2010-08-06 at 09:30	72436	2010-08-06 at 15:00

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 10080511 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: August 10, 2010
114-6400501

Work Order: 10080511
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Analytical Report

Sample: 239815 - SB-1 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72419	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62029				

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

Sample: 239815 - SB-1 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-08-05	Analyzed By:	kg
QC Batch:	72394	Sample Preparation:	2010-08-05	Prepared By:	kg
Prep Batch:	62054				

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		102	mg/Kg	1	100	102	70 - 130

Sample: 239815 - SB-1 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-08-06	Analyzed By:	AG
QC Batch:	72436	Sample Preparation:	2010-08-06	Prepared By:	AG
Prep Batch:	62082				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.58	mg/Kg	1	2.00	79	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.47	mg/Kg	1	2.00	74	42 - 159

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Sample: 239816 - SB-1 3' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72419	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62029				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3960	mg/Kg	100	4.00

Sample: 239817 - SB-1 5' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72419	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62029				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11900	mg/Kg	100	4.00

Sample: 239818 - SB-1 7' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72419	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62029				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		12600	mg/Kg	100	4.00

Sample: 239819 - SB-1 10' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72420	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62060				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		7790	mg/Kg	100	4.00

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Sample: 239820 - SB-1 15' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4590	mg/Kg	100	4.00

Sample: 239821 - SB-1 20' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

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

Sample: 239822 - SB-1 25' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		221	mg/Kg	50	4.00

Sample: 239823 - SB-1 30' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		354	mg/Kg	50	4.00

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Sample: 239824 - SB-1 40' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		234	mg/Kg	50	4.00

Sample: 239825 - SB-2 1' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		483	mg/Kg	50	4.00

Sample: 239825 - SB-2 1' (6 in. BEB)

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 72394 Date Analyzed: 2010-08-05 Analyzed By: kg
Prep Batch: 62054 Sample Preparation: 2010-08-05 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		98.1	mg/Kg	1	100	98	70 - 130

Sample: 239825 - SB-2 1' (6 in. BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 72436 Date Analyzed: 2010-08-06 Analyzed By: AG
Prep Batch: 62082 Sample Preparation: 2010-08-06 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.26	mg/Kg	1	2.00	63	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.15	mg/Kg	1	2.00	58	42 - 159

Sample: 239826 - SB-2 3' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		207	mg/Kg	50	4.00

Sample: 239827 - SB-2 5' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11600	mg/Kg	100	4.00

Sample: 239828 - SB-2 7' (6 in. BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR
Prep Batch: 62060 Sample Preparation: 2010-08-06 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		12100	mg/Kg	100	4.00

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Sample: 239829 - SB-2 10' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72421	Date Analyzed:	2010-08-06
Prep Batch:	62061	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		7630	mg/Kg	100	4.00

Sample: 239830 - SB-2 15' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72421	Date Analyzed:	2010-08-06
Prep Batch:	62061	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1720	mg/Kg	100	4.00

Sample: 239831 - SB-2 20' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72421	Date Analyzed:	2010-08-06
Prep Batch:	62061	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		288	mg/Kg	50	4.00

Sample: 239832 - SB-2 25' (6 in. BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	72421	Date Analyzed:	2010-08-06
Prep Batch:	62061	Sample Preparation:	2010-08-06
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		211	mg/Kg	50	4.00

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Sample: 239833 - SB-3 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		301	mg/Kg	50	4.00

Sample: 239833 - SB-3 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-08-05	Analyzed By:	kg
QC Batch:	72394	Sample Preparation:	2010-08-05	Prepared By:	kg
Prep Batch:	62054				

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		99.5	mg/Kg	1	100	100	70 - 130

Sample: 239833 - SB-3 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-08-06	Analyzed By:	AG
QC Batch:	72436	Sample Preparation:	2010-08-06	Prepared By:	AG
Prep Batch:	62082				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.93	mg/Kg	1	2.00	96	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.74	mg/Kg	1	2.00	87	42 - 159

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Sample: 239834 - SB-3 3' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		404	mg/Kg	50	4.00

Sample: 239835 - SB-3 5' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		10200	mg/Kg	100	4.00

Sample: 239836 - SB-3 7' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11800	mg/Kg	100	4.00

Sample: 239837 - SB-3 10' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		6110	mg/Kg	100	4.00

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Sample: 239838 - SB-3 15' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-06	Analyzed By:	AR
QC Batch:	72421	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62061				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5110	mg/Kg	100	4.00

Sample: 239839 - SB-3 20' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-09	Analyzed By:	AR
QC Batch:	72449	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62062				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		706	mg/Kg	50	4.00

Sample: 239840 - SB-3 25' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-09	Analyzed By:	AR
QC Batch:	72449	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62062				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		355	mg/Kg	50	4.00

Sample: 239841 - SB-3 30' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-09	Analyzed By:	AR
QC Batch:	72449	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62062				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		355	mg/Kg	50	4.00

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Sample: 239842 - SB-4 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-09	Analyzed By:	AR
QC Batch:	72449	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62062				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		378	mg/Kg	50	4.00

Sample: 239842 - SB-4 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2010-08-05	Analyzed By:	kg
QC Batch:	72394	Sample Preparation:	2010-08-05	Prepared By:	kg
Prep Batch:	62054				

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		104	mg/Kg	1	100	104	70 - 130

Sample: 239842 - SB-4 1' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2010-08-06	Analyzed By:	AG
QC Batch:	72436	Sample Preparation:	2010-08-06	Prepared By:	AG
Prep Batch:	62082				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.74	mg/Kg	1	2.00	87	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.58	mg/Kg	1	2.00	79	42 - 159

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Sample: 239843 - SB-4 3' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-09	Analyzed By:	AR
QC Batch:	72449	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62062				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1690	mg/Kg	100	4.00

Sample: 239844 - SB-4 5' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-09	Analyzed By:	AR
QC Batch:	72449	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62062				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4490	mg/Kg	100	4.00

Sample: 239845 - SB-4 7' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-09	Analyzed By:	AR
QC Batch:	72449	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62062				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		746	mg/Kg	50	4.00

Sample: 239846 - SB-4 10' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-09	Analyzed By:	AR
QC Batch:	72449	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62062				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		511	mg/Kg	50	4.00

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Sample: 239847 - SB-4 15' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-09	Analyzed By:	AR
QC Batch:	72449	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62062				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		258	mg/Kg	50	4.00

Sample: 239848 - SB-4 20' (6 in. BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2010-08-09	Analyzed By:	AR
QC Batch:	72449	Sample Preparation:	2010-08-06	Prepared By:	AR
Prep Batch:	62062				

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

Method Blank (1) QC Batch: 72394

QC Batch:	72394	Date Analyzed:	2010-08-05	Analyzed By:	kg
Prep Batch:	62054	QC Preparation:	2010-08-05	Prepared By:	kg

Parameter	Flag	MDL Result	Units	RL
DRO		<14.5	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		103	mg/Kg	1	100	103	70 - 130

Method Blank (1) QC Batch: 72419

QC Batch:	72419	Date Analyzed:	2010-08-06	Analyzed By:	AR
Prep Batch:	62029	QC Preparation:	2010-08-05	Prepared By:	AR

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

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Method Blank (1) QC Batch: 72420

QC Batch: 72420
Prep Batch: 62060

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 72421

QC Batch: 72421
Prep Batch: 62061

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 72436

QC Batch: 72436
Prep Batch: 62082

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<1.65	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.13	mg/Kg	1	2.00	106	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.50	mg/Kg	1	2.00	75	52.4 - 130

Method Blank (1) QC Batch: 72449

QC Batch: 72449
Prep Batch: 62062

Date Analyzed: 2010-08-09
QC Preparation: 2010-08-06

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: 72394
Prep Batch: 62054

Date Analyzed: 2010-08-05
QC Preparation: 2010-08-05

Analyzed By: kg
Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	225	mg/Kg	1	250	<14.5	90	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	238	mg/Kg	1	250	<14.5	95	57.4 - 133.4	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	104	110	mg/Kg	1	100	104	110	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 72419
Prep Batch: 62029

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-05

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.1	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	102	mg/Kg	1	100	<2.18	102	85 - 115	3	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: 72420
Prep Batch: 62060

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.3	mg/Kg	1	100	<2.18	98	85 - 115

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

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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	3	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: 72421
Prep Batch: 62061

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.4	mg/Kg	1	100	<2.18	97	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	5	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 72436
Prep Batch: 62082

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.1	mg/Kg	1	20.0	<1.65	80	69.9 - 95.4

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
GRO	16.5	mg/Kg	1	20.0	<1.65	82	69.9 - 95.4	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	1.94	mg/Kg	1	2.00	96	97	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.62	1.65	mg/Kg	1	2.00	81	82	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 72449
Prep Batch: 62062

Date Analyzed: 2010-08-09
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.3	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 239899

QC Batch: 72394
Prep Batch: 62054

Date Analyzed: 2010-08-05
QC Preparation: 2010-08-05

Analyzed By: kg
Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	196	mg/Kg	1	250	<14.5	78	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	188	mg/Kg	1	250	<14.5	75	35.2 - 167.1	4	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	91.5	88.7	mg/Kg	1	100	92	89	70 - 130

Matrix Spike (MS-1) Spiked Sample: 239818

QC Batch: 72419
Prep Batch: 62029

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-05

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	22800	mg/Kg	100	10000	12600	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	23200	mg/Kg	100	10000	12600	106	85 - 115	2	20

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

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Matrix Spike (MS-1) Spiked Sample: 239828

QC Batch: 72420
Prep Batch: 62060

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	22700	mg/Kg	100	10000	12100	106	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	22300	mg/Kg	100	10000	12100	102	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 239838

QC Batch: 72421
Prep Batch: 62061

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	14200	mg/Kg	100	10000	5110	91	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	5110	95	85 - 115	3	20

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

Matrix Spike (MS-1) Spiked Sample: 239786

QC Batch: 72436
Prep Batch: 62082

Date Analyzed: 2010-08-06
QC Preparation: 2010-08-06

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	¹ 11.0	mg/Kg	1	20.0	<1.65	55	61.8 - 114

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

continued ...

¹Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

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matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRÖ	15.0	mg/Kg	1	20.0	<1.65	75	61.8 - 114	31	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.60	1.07	mg/Kg	1	2	80	54	50 - 162
4-Bromofluorobenzene (4-BFB)	1.58	1.13	mg/Kg	1	2	79	56	50 - 162

Matrix Spike (MS-1) Spiked Sample: 239848

QC Batch: 72449
Prep Batch: 62062

Date Analyzed: 2010-08-09
QC Preparation: 2010-08-06

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9440	mg/Kg	100	10000	<218	92	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	9640	mg/Kg	100	10000	<218	94	85 - 115	2	20

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

Standard (CCV-1)

QC Batch: 72394

Date Analyzed: 2010-08-05

Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	232	93	80 - 120	2010-08-05

Standard (CCV-2)

QC Batch: 72394

Date Analyzed: 2010-08-05

Analyzed By: kg

²MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

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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	226	90	80 - 120	2010-08-05

Standard (ICV-1)

QC Batch: 72419 Date Analyzed: 2010-08-06 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-08-06

Standard (CCV-1)

QC Batch: 72419 Date Analyzed: 2010-08-06 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	2010-08-06

Standard (ICV-1)

QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.5	100	85 - 115	2010-08-06

Standard (CCV-1)

QC Batch: 72420 Date Analyzed: 2010-08-06 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-08-06

Standard (ICV-1)

QC Batch: 72421 Date Analyzed: 2010-08-06 Analyzed By: AR

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Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.2	98	85 - 115	2010-08-06

Standard (CCV-1)

QC Batch: 72421 Date Analyzed: 2010-08-06 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	2010-08-06

Standard (CCV-1)

QC Batch: 72436 Date Analyzed: 2010-08-06 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.984	98	80 - 120	2010-08-06

Standard (CCV-2)

QC Batch: 72436 Date Analyzed: 2010-08-06 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.853	85	80 - 120	2010-08-06

Standard (ICV-1)

QC Batch: 72449 Date Analyzed: 2010-08-09 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	2010-08-09

Standard (CCV-1)

QC Batch: 72449 Date Analyzed: 2010-08-09 Analyzed By: AR

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.8	98	85 - 115	2010-08-09

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Analysis Request of Chain of Custody Record



TETRA TECH
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Midland, Texas 79705
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CLIENT NAME: COG		SITE MANAGER: Ike Tavaraz		PROJECT NAME: COG / Bats SWD		PRESERVATIVE METHOD					
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE
80985	8/2		S		X	1					
816						1					
817						1					
818						1					
819						1					
820						1					
821						1					
822						1					
823						1					
824						1					

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. 8240/8260/824	GC/MS Semi Vol. 8270/825	PCB's 8080/808	Pest. 808/808	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
X														

RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
[Signature]	8-4-20	4:50	[Signature]	8-4-20	16:50
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:					
DATE:					
TIME:					

ANALYSIS REQUEST (Circle or Specify Method No.)	PAGE: 1 OF 1
PCB's 8080/808	
Pest. 808/808	
Chloride	
Gamma Spec.	
Alpha Beta (Air)	
PLM (Asbestos)	
Major Anions/Cations, pH, TDS	

DATE: 8/2/20	TIME: 16:50
SAMPLED BY: (Print & Initial)	Kir
SAMPLE SHIPPED BY: (Circle)	FEDEX
OTHER:	BUS
UPS	
TETRA TECH CONTRACT PERSON:	Ike Tavaraz
RESULTS BY:	
RUSH CHARGES AUTHORIZED:	Yes
NO	

REMARKS: 73c intact *All Bats - Midland

WD #: 10080511

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 Taveraz				
PROJECT NO.: 114-6400501		PROJECT NAME: COG / Data SWD				
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION
820	8/2		S	X		SB-2 1' (6" DEB)
826						SB-2 3' (6" DEB)
827						SB-2 5' (6" DEB)
828						SB-2 7' (6" DEB)
829						SB-2 10' (6" DEB)
830						SB-2 15' (6" DEB)
831						SB-2 20' (6" DEB)
832						SB-2 25' (6" DEB)
833						SB-3 1' (6" DEB)
834						SB-3 3' (6" DEB)

RELINQUISHED BY: (Signature)	Date: 8/2/10	RECEIVED BY: (Signature)	Date: 8/2/10
RELINQUISHED BY: (Signature)	Date: 8/2/10	RECEIVED BY: (Signature)	Date: 8/2/10
RELINQUISHED BY: (Signature)	Date: 8/2/10	RECEIVED BY: (Signature)	Date: 8/2/10
RECEIVING LABORATORY:	ADDRESS: Midland STATE: TX ZIP: 79705		
CITY:	CONTACT: PHONE DATE: TIME:		

ANALYSIS REQUEST (Circle or Specify Method No.)

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

SAMPLED BY: (Print & Initial)	Date: 8/2/10
SAMPLE SHIPPED BY: (Circle)	Time: 10:00
FEDEX	BUS
GROUND DELIVERED	UPS
TETRA TECH CONTACT PERSON: Ike Taveraz	
Results by:	
RUSH Charges Authorized:	Yes No

REMARKS: **f.3's standard**

LABORATORY RETAINS YELLOW COPY - RETURN ORIGINAL COPY TO TETRA TECH - PROJECT MANAGER RETAINS PINK COPY - ACCOUNTING RECEIVES GOLD COPY.

WO# 10080511

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: CEG	PROJECT NO.: 114-6400501	DATE 2/2/02	TIME 2:00	LAB I.D. NUMBER	SAMPLE IDENTIFICATION	PRESERVATIVE METHOD				NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE
						GRAB	COMP	MATRIX							
289835		8/12			SB-3 5' (6" BEB)	X			1						
886					SB-3 7' (6" BEB)				1						
837					SB-3 10' (6" BEB)				1						
838					SB-3 15' (6" BEB)				1						
839					SB-3 20' (6" BEB)				1						
840					SB-3 25' (6" BEB)				1						
841					SB-3 30' (6" BEB)				1						
842					SB-4 1' (6" BEB)				1						
843					SB-4 3' (6" BEB)				1						
844					SB-4 5' (6" BEB)				1						

RELINQUISHED BY (Signature)	Date	Time	RECEIVED BY (Signature)	Date	Time
<i>[Signature]</i>	8/12/02	16:30	<i>[Signature]</i>	8/12/02	16:30

RELINQUISHED BY (Signature)	Date	Time	RECEIVED BY (Signature)	Date	Time
<i>[Signature]</i>	8/12/02	16:30	<i>[Signature]</i>	8/12/02	16:30

RELINQUISHED BY (Signature)	Date	Time	RECEIVED BY (Signature)	Date	Time
<i>[Signature]</i>	8/12/02	16:30	<i>[Signature]</i>	8/12/02	16:30

RECEIVING LABORATORY:	THALS
ADDRESS:	
CITY:	Midland
STATE:	TX
ZIP:	
PHONE:	
DATE:	
TIME:	

SAMPLE CONDITION WHEN RECEIVED:	REMARKS:
7.3°C intact	

CLIENT NAME:	SITE MANAGER:
CEG	Ike Tavaraz

PROJECT NO.:	PROJECT NAME:
114-6400501	CEG / Bates Sand

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB
289835	8/12		S		X
886					
837					
838					
839					
840					
841					
842					
843					
844					

PAH B270	TCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCRP Metals Ag As Ba Cd Cr Pb Hg Se	TCRP Volatiles	TCRP Semi Volatiles	RCI	GC/MS Vol. B240/B260/B24	GC/MS Semi Vol. B270/B25	PCB's B080/B08	Post B08/B08	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS	
TPH 8015 MOD TX1005 (Ext to C35)										X	X	X	X	X	X

DATE:	TIME:	SAMPLED BY: (Print & Initial)	DATE:	TIME:
8/12/02	16:30	Kim	8/12/02	16:30

SAMPLE SHIPPED BY: (Circle)	FEDEX	BUS	UPS	OTHER:
☒				

RECEIVED BY:	RESULTS BY:
Ike Tavaraz	

RUSH CHARGES AUTHORIZED:	YES	NO

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 4

4

ANALYSIS REQUEST
(Circle or Specify Method No.)

TETRA TECH

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

[illegible]