

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

RECEIVED

FEB 23 2010

HOBBSOCD

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 685-4332
Facility Name	Brown Federal #1	Facility Type	Tank Battery
Surface Owner	Federal	Mineral Owner	
		Lease No.	30-025-30199

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	31	17S	32E	330	North	330	West	Lea

Latitude N 32.825260°

Longitude 103.791110°

NATURE OF RELEASE

Type of Release Oil and produced water	Volume of Release 10 bbls	Volume Recovered 0 bbls
Source of Release Flowline	Date and Hour of Occurrence 6/05/09 - 07:00 AM	Date and Hour of Discovery 06/05/09 - 09:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Trishia Bad Bear - BLM	
By Whom? Pat Ellis	Date and Hour 06/05/09 - 09:00 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

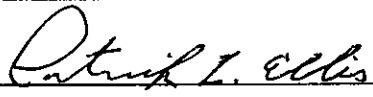
Describe Cause of Problem and Remedial Action Taken.*

Hole/split in 2" flow line. Flow line was replaced.

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 to Lea Land, Inc in Carlsbad, NM. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

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

Signature: 	OIL CONSERVATION DIVISION		
Printed Name: Pat Ellis	Approved by District Supervisor:		
Title: Environmental and Safety Supervisor	Approval Date:	Expiration Date:	
E-mail Address: PEllis@conchoresources.com	Conditions of Approval:		Attached ☐
Date: 2/15/09	Phone: (432) 686-3023		

* Attach Additional Sheets If Necessary

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

75XK1535645404
4058
Form C-141
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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
Address 550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No. 432-686-3087
Facility Name - Brown Federal #1	Facility Type- Battery

Surface Owner Federal	Mineral Owner	Lease No. 30-025-30199
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LOCATION OF RELEASE

Unit Letter D	Section 31	Township 17S	Range 32E	Feet from the 330	North/South Line North	Feet from the 330	East/West Line West	County Lea
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Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release-Produced Water/Oil	Volume of Release-10bbls	Volume Recovered- 0bbls
Source of Release- Flowline	Date and Hour of Occurrence- 6/5/09- 7:00 am	Date and Hour of Discovery 6/5/09-9:00am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Trishia Badbear BLM	
By Whom? Pat Ellis	Date and Hour 6/5/09 @ 9:00am	
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.*
Hole/split in 2' flow line. Flow line was replaced.

Describe Area Affected and Cleanup Action Taken.*

The affected area was dug up and removed and clean soil was replaced. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the OCD/BLM for your approval prior to any significant remediation work.

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

OIL CONSERVATION DIVISION

Signature: <i>C. Jackson</i>	Approved by District Supervisor:	
Printed Name: Chasity Jackson	Approval Date:	Expiration Date:
Title: Agent for COG	Conditions of Approval:	
E-mail Address: cjackson@conchoresources.com	Attached ☐	
Date: 06/19/09	Phone: 432-686-3087	

* Attach Additional Sheets If Necessary



TETRA TECH

September 14, 2009

Mr. Geoffrey R. Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 N. French Drive
Hobbs, NM 88240

RECEIVED

SEP 21 2009

HOBBSOCD

Re: Work Plan and Assessment Report for the COG Operating LLC., Brown Federal Tank Battery, Unit D, Section 31, Township 17 South, Range 32 East, Lea County, New Mexico.

Dear Mr. Leking:

Tetra Tech Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Brown Federal Tank Battery located in Unit D, Section 31, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.79721°, W 103.81344°. 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 June 5, 2009. Approximately 10 barrels of oil/produced water was released from a 2-inch poly line leak. The 2-inch poly line was replaced. The affected area was excavated to a depth of 1 foot below ground surface (bgs), stockpiled onsite, and backfilled with clean soil. The initial C-141 is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 31. However, one temporary monitor well was installed on adjacent Section 30 by COG at the Pronghorn lease. The depth to groundwater on this temporary well is 178 feet bgs. The site elevation is approximately 3,857 feet above sea level (asl) while the surrounding section containing the groundwater well is approximately 3,885 feet asl. The 30 foot elevation difference places the groundwater depth at the site at approximately 148 feet bgs. The Groundwater Report is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



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 June 8, 2009, Tetra Tech personnel inspected the spill area which measured approximately 5' (near the top of the spill) to 35' wide (at the bottom of the spill) by 120' long. During the initial assessment a total of five (5) auger holes (AH-1 through AH-5) were installed using a stainless steel hand auger to assess the impacted soils in the spill area. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. All of the samples analyzed were below the RRAL for both BTEX and TPH. The chloride concentrations ranged from <200 milligrams per kilograms (mg/Kg) at AH-1 (4-4.5'), AH-2 (4-4.5'), and AH-3 (5-5.5') to 15,500 mg/Kg at AH-1 (2-2.5') and AH-2 (2-2.5') with the chlorides delineated in AH-1 through AH-3. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1.

In order to complete delineation of the chlorides at the sites, on July 21, 2009, Tetra Tech personnel were onsite to install one (1) borehole (SB-1) utilizing an air rotary rig. The boring was installed between auger holes AH-4 and AH-5. The borehole was extended to a maximum depth of 31 feet bgs with samples collected at five foot intervals starting at 10 to 11 feet below excavated depth. The samples were submitted to the laboratory for analysis of chlorides. Analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg was at 20 feet bgs. The chloride concentrations decreased with depth. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1, while the soil boring log is presented in Appendix D. The location of the borehole and auger hole locations are shown on Figure 3.

Conclusions and Workplan

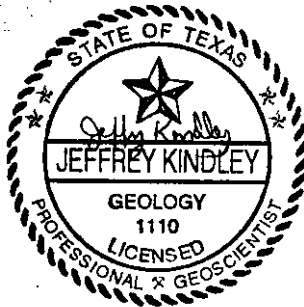
The site is located off a lease road in a low lying area southeast of the existing tank battery and well site with no receptors within a one mile radius. Based on data from a previous temporary monitor well located one mile north of the site, the depth to groundwater in this area is projected to be greater than 148' below surface. In addition, chloride concentrations decreased with depth across the site, and deeper chloride concentrations were in a smaller area of the spill (approximately 5' x 30' area).

Since the depth of groundwater is greater than 148' bgs and the chlorides are decreasing with depth, COG proposes to attempt to excavate and remove up to the top 15 to 20 feet of chloride impacted sand from the site. Additionally, the areas of AH-1 through AH-3 will be excavated to a depth of 3'. Upon completion of the excavation, COG proposes to backfill the site with clean soil and reseed the site. The excavated soils will be transported offsite for proper disposal.



TETRA TECH

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

Jeffrey Kindley
Jeff Kindley, P.G.
Senior Environmental Geologist

cc: Pat Ellis – COG
Tricia Badbear – BLM

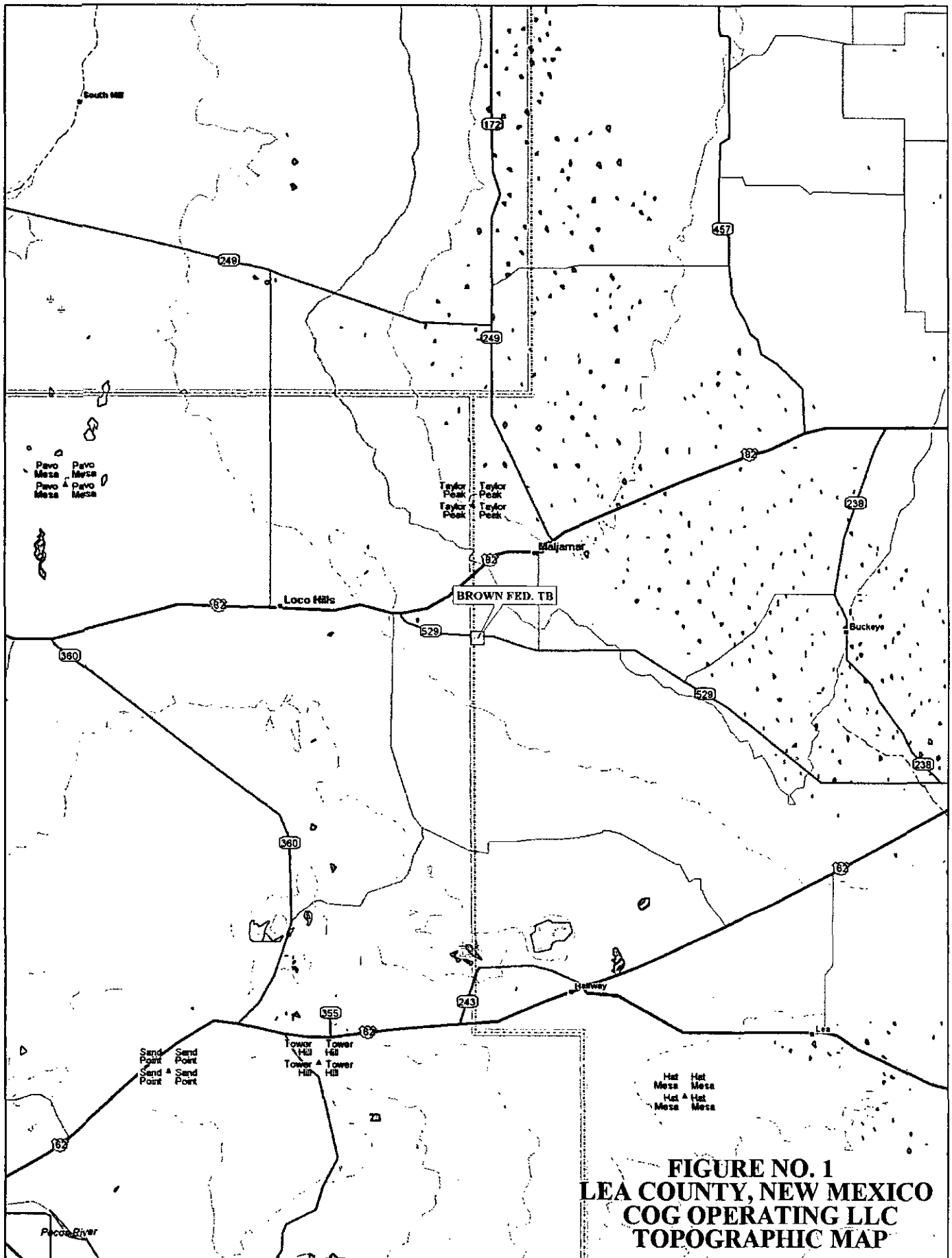
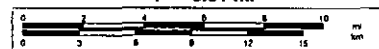
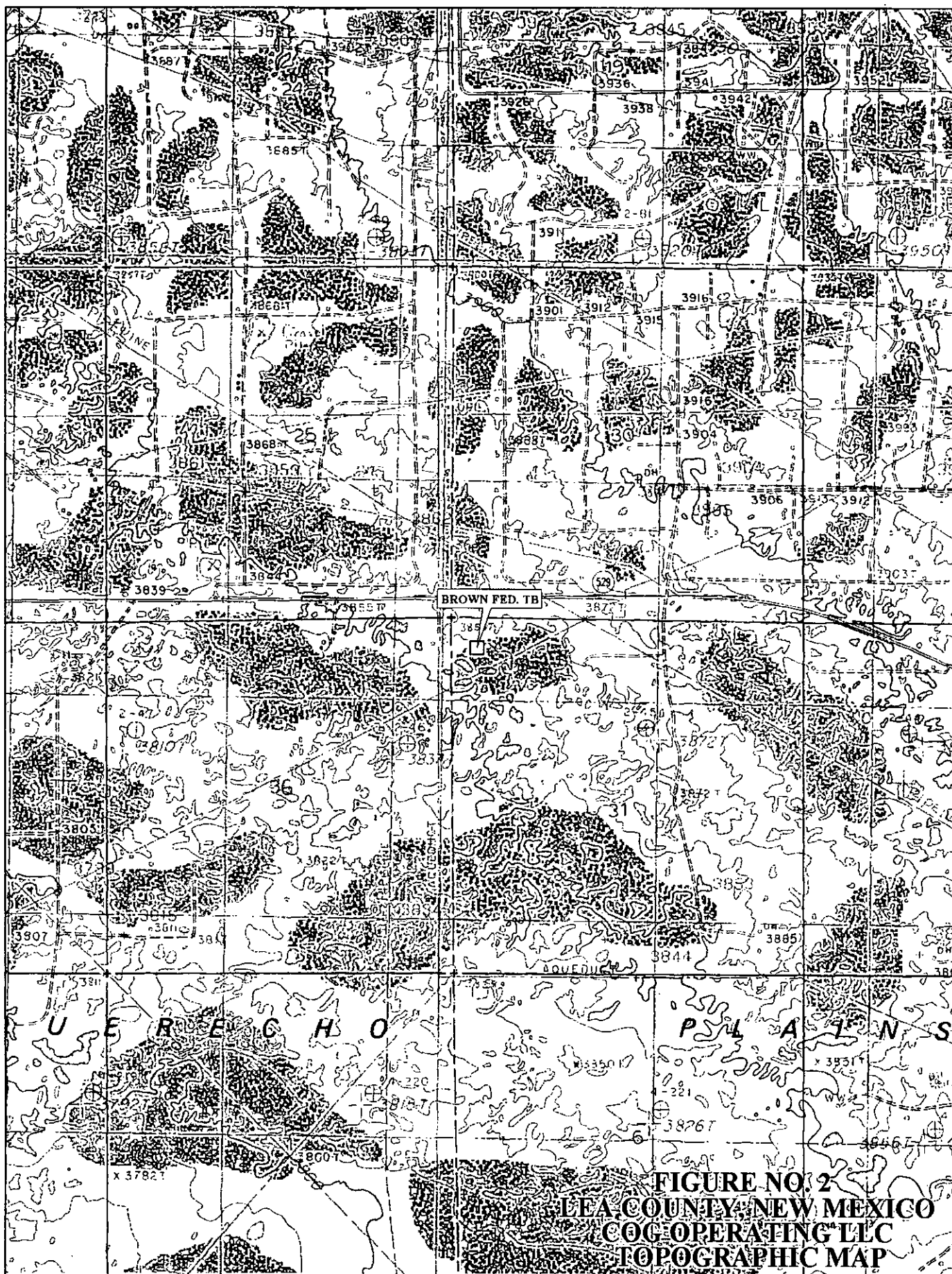


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP



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www.delorme.com

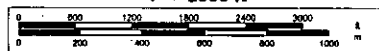




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www.delorme.com

Scale 1 : 24,000

1" = 2000 ft



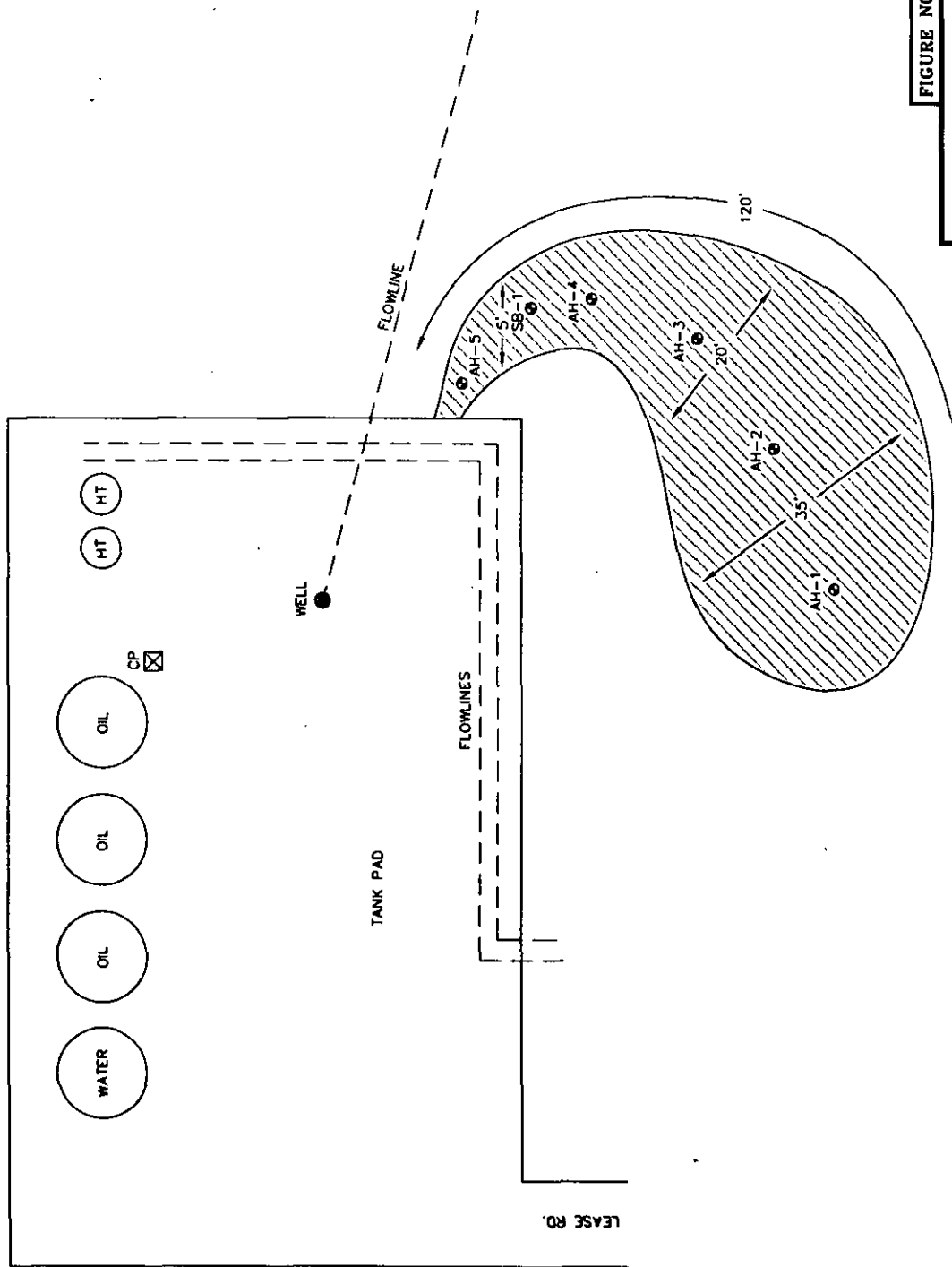


FIGURE NO. 3

UPTON COUNTY, TEXAS

COG OPERATING LLC

BROWN FEDERAL TB

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 6/12/09
DRAWN BY: JJ
FILE: 14-CONV-000214
PROJECT: FOL-19

NOT TO SCALE

Table 1
COG Operating LLC
Brown Federal Tank Battery
Lea County, New Mexico

[illegible]

Table 1
COG Operating LLC
Brown Federal Tank Battery
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Excavation Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
AH-4	6/8/2009	6-6.5	1'	In-Situ	Removed	DRO	GRO	Total	-	-	-	-	10600
	6/8/2009	7-7.5	1'	X		-	-	-	-	-	-	-	11200
	6/8/2009	8-8.5	1'	X		-	-	-	-	-	-	-	10600
	6/8/2009	9-9.5	1'	X		-	-	-	-	-	-	-	10500
	6/8/2009	10-10.5	1'	X		-	-	-	-	-	-	-	11800
AH-5	6/8/2009	0-1	1'	X		<50.0	<1.0	<50.0	-	-	-	-	3970
	6/8/2009	1-1.5	1'	X		<50.0	13.2	13.2	-	-	-	-	4430
	6/8/2009	2-2.5	1'	X		<50.0	7.66	7.66	-	-	-	-	4900
	6/8/2009	4-4.5	1'	X		-	-	-	-	-	-	-	4300
	6/8/2009	5-5.5	1'	X		-	-	-	-	-	-	-	4100
	6/8/2009	6-6.5	1'	X		-	-	-	-	-	-	-	3920
	6/8/2009	8-8.5	1'	X		-	-	-	-	-	-	-	9960
	6/8/2009	9-9.5	1'	X		-	-	-	-	-	-	-	9360
	6/8/2009	10-10.5	1'	X		-	-	-	-	-	-	-	11600
SB-1	7/21/2009	10-11'	1'	X									3720
	7/21/2009	15-16'	1'	X									8920
	7/21/2009	20-21'	1'	X									3090
	7/21/2009	25-26'	1'	X									745
	7/21/2009	30-31'	1'	X									<200

(-) Not Analyzed

Report Date: June 15, 2009
114-6400214

Work Order: 9060854
COG/Brown Fed. TB

Page Number: 1 of 7
Lea Co., NM

Summary Report

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

Report Date: June 15, 2009

Work Order: 9060854



Project Location: Lea Co., NM
Project Name: COG/Brown Fed. TB
Project Number: 114-6400214

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
198284	AH-1 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198285	AH-1 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198286	AH-1 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198287	AH-1 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198288	AH-1 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198289	AH-1 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198290	AH-2 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198291	AH-2 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198292	AH-2 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198293	AH-2 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198294	AH-2 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198295	AH-2 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198296	AH-3 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198297	AH-3 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198298	AH-3 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198299	AH-3 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198300	AH-3 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198301	AH-3 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198302	AH-3 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198303	AH-4 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198304	AH-4 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198305	AH-4 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198306	AH-4 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198307	AH-4 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198308	AH-4 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198309	AH-4 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198310	AH-4 7-7.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198311	AH-4 8-8.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198312	AH-4 9-9.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198313	AH-4 10-10.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
198314	AH-5 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198315	AH-5 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198316	AH-5 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198317	AH-5 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198318	AH-5 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198319	AH-5 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198320	AH-5 8-8.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198321	AH-5 9-9.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198322	AH-5 10-10.5' 1' BEB)	soil	2009-06-08	00:00	2009-06-08

Sample - Field Code	BTEX				TPH DRO	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
198284 - AH-1 0-1' (1' BEB)	<0.0100	0.0938	<0.0100	0.330	<50.0	22.6
198290 - AH-2 0-1' (1' BEB)					<50.0	9.76
198296 - AH-3 0-1' (1' BEB)					<50.0	8.57
198303 - AH-4 0-1' (1' BEB)	<0.0100	<0.0100	<0.0100	0.104	550	11.1
198314 - AH-5 0-1' (1' BEB)					<50.0	<1.00
198315 - AH-5 1-1.5' (1' BEB)					<50.0	13.2
198316 - AH-5 2-2.5' (1' BEB)					<50.0	7.66

Sample: 198284 - AH-1 0-1' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		8060	mg/Kg	4.00

Sample: 198285 - AH-1 1-1.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		13200	mg/Kg	4.00

Sample: 198286 - AH-1 2-2.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		15800	mg/Kg	4.00

Sample: 198287 - AH-1 3-3.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		5080	mg/Kg	4.00

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114-6400214

Work Order: 9060854
COG/Brown Fed. TB

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Lea Co., NM

Sample: 198288 - AH-1 4-4.5' (1' BEB)

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

Sample: 198289 - AH-1 5-5.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		367	mg/Kg	4.00

Sample: 198290 - AH-2 0-1' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		326	mg/Kg	4.00

Sample: 198291 - AH-2 1-1.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		1980	mg/Kg	4.00

Sample: 198292 - AH-2 2-2.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		15800	mg/Kg	4.00

Sample: 198293 - AH-2 3-3.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		1280	mg/Kg	4.00

Sample: 198294 - AH-2 4-4.5' (1' BEB)

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

Sample: 198295 - AH-2 5-5.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3560	mg/Kg	4.00

Report Date: June 15, 2009
114-6400214

Work Order: 9060854
COG/Brown Fed. TB

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Lea Co., NM

Sample: 198296 - AH-3 0-1' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4160	mg/Kg	4.00

Sample: 198297 - AH-3 1-1.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		12000	mg/Kg	4.00

Sample: 198298 - AH-3 2-2.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		11800	mg/Kg	4.00

Sample: 198299 - AH-3 3-3.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3050	mg/Kg	4.00

Sample: 198300 - AH-3 4-4.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		525	mg/Kg	4.00

Sample: 198301 - AH-3 5-5.5' (1' BEB)

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

Sample: 198302 - AH-3 6-6.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		404	mg/Kg	4.00

Sample: 198303 - AH-4 0-1' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4840	mg/Kg	4.00

Report Date: June 15, 2009
114-6400214

Work Order: 9060854
COG/Brown Fed. TB

Page Number: 5 of 7
Lea Co., NM

Sample: 198304 - AH-4 1-1.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3540	mg/Kg	4.00

Sample: 198305 - AH-4 2-2.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3140	mg/Kg	4.00

Sample: 198306 - AH-4 3-3.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3010	mg/Kg	4.00

Sample: 198307 - AH-4 4-4.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4650	mg/Kg	4.00

Sample: 198308 - AH-4 5-5.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		15000	mg/Kg	4.00

Sample: 198309 - AH-4 6-6.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		10600	mg/Kg	4.00

Sample: 198310 - AH-4 7-7.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		11200	mg/Kg	4.00

Sample: 198311 - AH-4 8-8.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		10600	mg/Kg	4.00

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Sample: 198312 - AH-4 9-9.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		10500	mg/Kg	4.00

Sample: 198313 - AH-4 10-10.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		11800	mg/Kg	4.00

Sample: 198314 - AH-5 0-1' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3970	mg/Kg	4.00

Sample: 198315 - AH-5 1-1.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4430	mg/Kg	4.00

Sample: 198316 - AH-5 2-2.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4900	mg/Kg	4.00

Sample: 198317 - AH-5 4-4.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4300	mg/Kg	4.00

Sample: 198318 - AH-5 5-5.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4100	mg/Kg	4.00

Sample: 198319 - AH-5 6-6.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3920	mg/Kg	4.00

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Sample: 198320 - AH-5 8-8.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		9960	mg/Kg	4.00

Sample: 198321 - AH-5 9-9.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		9360	mg/Kg	4.00

Sample: 198322 - AH-5 10-10.5' 1' BEB)

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00



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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: June 15, 2009

Work Order: 9060854



Project Location: Lea Co., NM
Project Name: COG/Brown Fed. TB
Project Number: 114-6400214

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
198284	AH-1 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198285	AH-1 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198286	AH-1 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198287	AH-1 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198288	AH-1 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198289	AH-1 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198290	AH-2 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198291	AH-2 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198292	AH-2 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198293	AH-2 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
198294	AH-2 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198295	AH-2 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198296	AH-3 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198297	AH-3 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198298	AH-3 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198299	AH-3 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198300	AH-3 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198301	AH-3 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198302	AH-3 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198303	AH-4 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198304	AH-4 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198305	AH-4 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198306	AH-4 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198307	AH-4 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198308	AH-4 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198309	AH-4 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198310	AH-4 7-7.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198311	AH-4 8-8.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198312	AH-4 9-9.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198313	AH-4 10-10.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198314	AH-5 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198315	AH-5 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198316	AH-5 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198317	AH-5 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198318	AH-5 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198319	AH-5 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198320	AH-5 8-8.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198321	AH-5 9-9.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198322	AH-5 10-10.5' 1' BEB)	soil	2009-06-08	00:00	2009-06-08

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



Dr. Blair Leftwich, Director

Standard Flags

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

Case Narrative

Samples for project COG/Brown Fed. TB were received by TraceAnalysis, Inc. on 2009-06-08 and assigned to work order 9060854. Samples for work order 9060854 were received intact without headspace and at a temperature of 22.6 deg. C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	51454	2009-06-10 at 09:21	60299	2009-06-10 at 09:21
Chloride (Titration)	SM 4500-Cl B	51439	2009-06-10 at 10:36	60312	2009-06-11 at 14:01
Chloride (Titration)	SM 4500-Cl B	51440	2009-06-10 at 10:37	60313	2009-06-11 at 14:02
Chloride (Titration)	SM 4500-Cl B	51441	2009-06-10 at 10:38	60314	2009-06-11 at 14:03
Chloride (Titration)	SM 4500-Cl B	51442	2009-06-10 at 10:38	60315	2009-06-11 at 14:04
TPH DRO	Mod. 8015B	51453	2009-06-10 at 15:00	60297	2009-06-10 at 12:21
TPH GRO	S 8015B	51454	2009-06-10 at 09:21	60300	2009-06-10 at 09:21
TPH GRO	S 8015B	51482	2009-06-11 at 12:56	60339	2009-06-11 at 12:56

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 9060854 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

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Analytical Report

Sample: 198284 - AH-1 0-1' (1' BEB)

Laboratory: Midland

Analysis: BTEX

QC Batch: 60299

Prep Batch: 51454

Analytical Method: S 8021B

Date Analyzed: 2009-06-10

Sample Preparation: 2009-06-10

Prep Method: S 5035

Analyzed By: ME

Prepared By: ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		0.0938	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		0.330	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.93	mg/Kg	1	2.00	96	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.98	mg/Kg	1	2.00	99	45.2 - 144.3

Sample: 198284 - AH-1 0-1' (1' BEB)

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 60312

Prep Batch: 51439

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-06-11

Sample Preparation: 2009-06-10

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8060	mg/Kg	50	4.00

Sample: 198284 - AH-1 0-1' (1' BEB)

Laboratory: Midland

Analysis: TPH DRO

QC Batch: 60297

Prep Batch: 51453

Analytical Method: Mod. 8015B

Date Analyzed: 2009-06-10

Sample Preparation: 2009-06-10

Prep Method: N/A

Analyzed By: AG

Prepared By: AG

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		89.6	mg/Kg	1	100	90	13.2 - 219.3

Sample: 198284 - AH-1 0-1' (1' BEB)

Laboratory: Midland	Analytical Method: S 8015B	Prep Method: S 5035
Analysis: TPH GRO	Date Analyzed: 2009-06-10	Analyzed By: ME
QC Batch: 60300	Sample Preparation: 2009-06-10	Prepared By: ME
Prep Batch: 51454		

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		22.6	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.02	mg/Kg	1	2.00	101	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	52 - 117

Sample: 198285 - AH-1 1-1.5' (1' BEB)

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-06-11	Analyzed By: AR
QC Batch: 60312	Sample Preparation: 2009-06-10	Prepared By: AR
Prep Batch: 51439		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		13200	mg/Kg	50	4.00

Sample: 198286 - AH-1 2-2.5' (1' BEB)

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-06-11	Analyzed By: AR
QC Batch: 60312	Sample Preparation: 2009-06-10	Prepared By: AR
Prep Batch: 51439		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		15800	mg/Kg	50	4.00

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Sample: 198287 - AH-1 3-3.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60312	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51439				

Parameter	Flag	Result	Units	Dilution	RL
Chloride		5080	mg/Kg	50	4.00

Sample: 198288 - AH-1 4-4.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60312	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51439				

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

Sample: 198289 - AH-1 5-5.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60312	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51439				

Parameter	Flag	Result	Units	Dilution	RL
Chloride		367	mg/Kg	50	4.00

Sample: 198290 - AH-2 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60312	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51439				

Parameter	Flag	Result	Units	Dilution	RL
Chloride		326	mg/Kg	50	4.00

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Sample: 198290 - AH-2 0-1' (1' BEB)

Laboratory: Midland
Analysis: TPH DRO
QC Batch: 60297
Prep Batch: 51453

Analytical Method: Mod. 8015B
Date Analyzed: 2009-06-10
Sample Preparation: 2009-06-10

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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		106	mg/Kg	1	100	106	13.2 - 219.3

Sample: 198290 - AH-2 0-1' (1' BEB)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 60300
Prep Batch: 51454

Analytical Method: S 8015B
Date Analyzed: 2009-06-10
Sample Preparation: 2009-06-10

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

RL					
Parameter	Flag	Result	Units	Dilution	RL
GRO		9.76	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.05	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.42	mg/Kg	1	2.00	71	52 - 117

Sample: 198291 - AH-2 1-1.5' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 60312
Prep Batch: 51439

Analytical Method: SM 4500-Cl B
Date Analyzed: 2009-06-11
Sample Preparation: 2009-06-10

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

RL					
Parameter	Flag	Result	Units	Dilution	RL
Chloride		1980	mg/Kg	50	4.00

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Sample: 198292 - AH-2 2-2.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60312	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51439				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		15800	mg/Kg	50	4.00

Sample: 198293 - AH-2 3-3.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1280	mg/Kg	50	4.00

Sample: 198294 - AH-2 4-4.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

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

Sample: 198295 - AH-2 5-5.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3560	mg/Kg	50	4.00

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Sample: 198296 - AH-3 0-1' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60313 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51440 Sample Preparation: 2009-06-10 Prepared By: AR

RL					
Parameter	Flag	Result	Units	Dilution	RL
Chloride		4160	mg/Kg	50	4.00

Sample: 198296 - AH-3 0-1' (1' BEB)

Laboratory: Midland
Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 60297 Date Analyzed: 2009-06-10 Analyzed By: AG
Prep Batch: 51453 Sample Preparation: 2009-06-10 Prepared By: AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		92.5	mg/Kg	1	100	92	13.2 - 219.3

Sample: 198296 - AH-3 0-1' (1' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 60300 Date Analyzed: 2009-06-10 Analyzed By: ME
Prep Batch: 51454 Sample Preparation: 2009-06-10 Prepared By: ME

RL					
Parameter	Flag	Result	Units	Dilution	RL
GRO		8.57	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.06	mg/Kg	1	2.00	103	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.31	mg/Kg	1	2.00	66	52 - 117

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Sample: 198297 - AH-3 1-1.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		12000	mg/Kg	50	4.00

Sample: 198298 - AH-3 2-2.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11800	mg/Kg	50	4.00

Sample: 198299 - AH-3 3-3.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3050	mg/Kg	50	4.00

Sample: 198300 - AH-3 4-4.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		525	mg/Kg	50	4.00

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Sample: 198301 - AH-3 5-5.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

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

Sample: 198302 - AH-3 6-6.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

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

Sample: 198303 - AH-4 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2009-06-10	Analyzed By:	ME
QC Batch:	60299	Sample Preparation:	2009-06-10	Prepared By:	ME
Prep Batch:	51454				

RL					
Parameter	Flag	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		0.104	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.98	mg/Kg	1	2.00	99	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.77	mg/Kg	1	2.00	88	45.2 - 144.3

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Sample: 198303 - AH-4 0-1' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60314 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51441 Sample Preparation: 2009-06-10 Prepared By: AR

RL					
Parameter	Flag	Result	Units	Dilution	RL
Chloride		4840	mg/Kg	50	4.00

Sample: 198303 - AH-4 0-1' (1' BEB)

Laboratory: Midland
Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 60297 Date Analyzed: 2009-06-10 Analyzed By: AG
Prep Batch: 51453 Sample Preparation: 2009-06-10 Prepared By: AG

RL					
Parameter	Flag	Result	Units	Dilution	RL
DRO		550	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		140	mg/Kg	1	100	140	13.2 - 219.3

Sample: 198303 - AH-4 0-1' (1' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 60300 Date Analyzed: 2009-06-10 Analyzed By: ME
Prep Batch: 51454 Sample Preparation: 2009-06-10 Prepared By: ME

RL					
Parameter	Flag	Result	Units	Dilution	RL
GRO		11.1	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.99	mg/Kg	1	2.00	100	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.33	mg/Kg	1	2.00	66	52 - 117

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Sample: 198304 - AH-4 1-1.5' (1' BEB)

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 60314

Prep Batch: 51441

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-06-11

Sample Preparation: 2009-06-10

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

RL					
Parameter	Flag	Result	Units	Dilution	RL
Chloride		3540	mg/Kg	50	4.00

Sample: 198305 - AH-4 2-2.5' (1' BEB)

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 60314

Prep Batch: 51441

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-06-11

Sample Preparation: 2009-06-10

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

RL					
Parameter	Flag	Result	Units	Dilution	RL
Chloride		3140	mg/Kg	50	4.00

Sample: 198306 - AH-4 3-3.5' (1' BEB)

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 60314

Prep Batch: 51441

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-06-11

Sample Preparation: 2009-06-10

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

RL					
Parameter	Flag	Result	Units	Dilution	RL
Chloride		3010	mg/Kg	50	4.00

Sample: 198307 - AH-4 4-4.5' (1' BEB)

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 60314

Prep Batch: 51441

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-06-11

Sample Preparation: 2009-06-10

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

RL					
Parameter	Flag	Result	Units	Dilution	RL
Chloride		4650	mg/Kg	50	4.00

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Sample: 198308 - AH-4 5-5.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60314	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51441				

Parameter	Flag	Result	Units	Dilution	RL
Chloride		15000	mg/Kg	50	4.00

Sample: 198309 - AH-4 6-6.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60314	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51441				

Parameter	Flag	Result	Units	Dilution	RL
Chloride		10600	mg/Kg	50	4.00

Sample: 198310 - AH-4 7-7.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60314	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51441				

Parameter	Flag	Result	Units	Dilution	RL
Chloride		11200	mg/Kg	50	4.00

Sample: 198311 - AH-4 8-8.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60314	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51441				

Parameter	Flag	Result	Units	Dilution	RL
Chloride		10600	mg/Kg	50	4.00

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Sample: 198312 - AH-4 9-9.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60314	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51441				

Parameter	Flag	Result	Units	Dilution	RL
Chloride		10500	mg/Kg	50	4.00

Sample: 198313 - AH-4 10-10.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60315	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51442				

Parameter	Flag	Result	Units	Dilution	RL
Chloride		11800	mg/Kg	50	4.00

Sample: 198314 - AH-5 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60315	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51442				

Parameter	Flag	Result	Units	Dilution	RL
Chloride		3970	mg/Kg	50	4.00

Sample: 198314 - AH-5 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2009-06-10	Analyzed By:	AG
QC Batch:	60297	Sample Preparation:	2009-06-10	Prepared By:	AG
Prep Batch:	51453				

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		99.5	mg/Kg	1	100	100	13.2 - 219.3

Sample: 198314 - AH-5 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	60300	Date Analyzed:	2009-06-10	Analyzed By:	ME
Prep Batch:	51454	Sample Preparation:	2009-06-10	Prepared By:	ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.39	mg/Kg	1	2.00	70	52 - 117

Sample: 198315 - AH-5 1-1.5' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	60315	Date Analyzed:	2009-06-11	Analyzed By:	AR
Prep Batch:	51442	Sample Preparation:	2009-06-10	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4430	mg/Kg	50	4.00

Sample: 198315 - AH-5 1-1.5' (1' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	60297	Date Analyzed:	2009-06-10	Analyzed By:	AG
Prep Batch:	51453	Sample Preparation:	2009-06-10	Prepared By:	AG

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		110	mg/Kg	1	100	110	13.2 - 219.3

Sample: 198315 - AH-5 1-1.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	S 8015B	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2009-06-11	Analyzed By:	ME
QC Batch:	60339	Sample Preparation:	2009-06-11	Prepared By:	ME
Prep Batch:	51482				

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		13.2	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.11	mg/Kg	1	2.00	106	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.59	mg/Kg	1	2.00	80	52 - 117

Sample: 198316 - AH-5 2-2.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60315	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51442				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4900	mg/Kg	50	4.00

Sample: 198316 - AH-5 2-2.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2009-06-10	Analyzed By:	AG
QC Batch:	60297	Sample Preparation:	2009-06-10	Prepared By:	AG
Prep Batch:	51453				

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		98.6	mg/Kg	1	100	99	13.2 - 219.3

Sample: 198316 - AH-5 2-2.5' (1' BEB)

Laboratory: Midland	Analytical Method: S 8015B	Prep Method: S 5035
Analysis: TPH GRO	Date Analyzed: 2009-06-11	Analyzed By: ME
QC Batch: 60339	Sample Preparation: 2009-06-11	Prepared By: ME
Prep Batch: 51482		

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		7.66	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.37	mg/Kg	1	2.00	68	52 - 117

Sample: 198317 - AH-5 4-4.5' (1' BEB)

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-06-11	Analyzed By: AR
QC Batch: 60315	Sample Preparation: 2009-06-10	Prepared By: AR
Prep Batch: 51442		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4300	mg/Kg	50	4.00

Sample: 198318 - AH-5 5-5.5' (1' BEB)

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-06-11	Analyzed By: AR
QC Batch: 60315	Sample Preparation: 2009-06-10	Prepared By: AR
Prep Batch: 51442		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4100	mg/Kg	50	4.00

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Sample: 198319 - AH-5 6-6.5' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51442 Sample Preparation: 2009-06-10 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3920	mg/Kg	50	4.00

Sample: 198320 - AH-5 8-8.5' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51442 Sample Preparation: 2009-06-10 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9960	mg/Kg	50	4.00

Sample: 198321 - AH-5 9-9.5' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51442 Sample Preparation: 2009-06-10 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9360	mg/Kg	50	4.00

Sample: 198322 - AH-5 10-10.5' 1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51442 Sample Preparation: 2009-06-10 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11600	mg/Kg	50	4.00

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Method Blank (1) QC Batch: 60297

QC Batch: 60297
Prep Batch: 51453

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
DRO		7.14	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		116	mg/Kg	1	100	116	13 - 178.5

Method Blank (1) QC Batch: 60299

QC Batch: 60299
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.94	mg/Kg	1	2.00	97	65.6 - 130.6
4-Bromofluorobenzene (4-BFB)		1.84	mg/Kg	1	2.00	92	51.9 - 128.1

Method Blank (1) QC Batch: 60300

QC Batch: 60300
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	71.9 - 115
4-Bromofluorobenzene (4-BFB)		1.43	mg/Kg	1	2.00	72	45.7 - 118.9

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Method Blank (1) QC Batch: 60312

QC Batch: 60312 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51439 QC Preparation: 2009-06-10 Prepared By: AR

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

Method Blank (1) QC Batch: 60313

QC Batch: 60313 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51440 QC Preparation: 2009-06-10 Prepared By: AR

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

Method Blank (1) QC Batch: 60314

QC Batch: 60314 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51441 QC Preparation: 2009-06-10 Prepared By: AR

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

Method Blank (1) QC Batch: 60315

QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51442 QC Preparation: 2009-06-10 Prepared By: AR

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

Method Blank (1) QC Batch: 60339

QC Batch: 60339 Date Analyzed: 2009-06-11 Analyzed By: ME
Prep Batch: 51482 QC Preparation: 2009-06-11 Prepared By: ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	71.9 - 115
4-Bromofluorobenzene (4-BFB)		1.63	mg/Kg	1	2.00	82	45.7 - 118.9

Laboratory Control Spike (LCS-1)

QC Batch: 60297
Prep Batch: 51453

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	271	mg/Kg	1	250	<5.86	108	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	265	mg/Kg	1	250	<5.86	106	57.4 - 133.4	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	115	109	mg/Kg	1	100	115	109	48.5 - 146.7

Laboratory Control Spike (LCS-1)

QC Batch: 60299
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.04	mg/Kg	1	2.00	<0.00100	102	72.7 - 129.8
Toluene	2.09	mg/Kg	1	2.00	<0.00100	104	71.6 - 129.6
Ethylbenzene	2.04	mg/Kg	1	2.00	<0.00110	102	70.8 - 129.7
Xylene	6.29	mg/Kg	1	6.00	<0.00360	105	70.9 - 129.4

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
Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.16	mg/Kg	1	2.00	<0.00100	108	72.7 - 129.8	6	20
Toluene	2.25	mg/Kg	1	2.00	<0.00100	112	71.6 - 129.6	7	20
Ethylbenzene	2.31	mg/Kg	1	2.00	<0.00110	116	70.8 - 129.7	12	20
Xylene	7.13	mg/Kg	1	6.00	<0.00360	119	70.9 - 129.4	12	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)	1.92	1.96	mg/Kg	1	2.00	96	98	65.9 - 132
4-Bromofluorobenzene (4-BFB)	1.99	2.16	mg/Kg	1	2.00	100	108	55.2 - 128.9

Laboratory Control Spike (LCS-1)

QC Batch: 60300
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	13.1	mg/Kg	1	20.0	<0.482	66	60.5 - 100.1

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.5	mg/Kg	1	20.0	<0.482	78	60.5 - 100.1	17	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.03	2.08	mg/Kg	1	2.00	102	104	78.8 - 104.7
4-Bromofluorobenzene (4-BFB)	1.58	1.70	mg/Kg	1	2.00	79	85	66.1 - 107.3

Laboratory Control Spike (LCS-1)

QC Batch: 60312
Prep Batch: 51439

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

continued ...

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control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.4	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 60313
Prep Batch: 51440

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

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

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

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

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

Laboratory Control Spike (LCS-1)

QC Batch: 60314
Prep Batch: 51441

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

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

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

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

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

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Laboratory Control Spike (LCS-1)

QC Batch: 60315
Prep Batch: 51442

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.2	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	98.4	mg/Kg	1	100	<2.18	98	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 60339
Prep Batch: 51482

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-11

Analyzed By: ME
Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.5	mg/Kg	1	20.0	<0.482	78	60.5 - 100.1

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	16.5	mg/Kg	1	20.0	<0.482	82	60.5 - 100.1	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.08	2.06	mg/Kg	1	2.00	104	103	78.8 - 104.7
4-Bromofluorobenzene (4-BFB)	1.69	1.75	mg/Kg	1	2.00	84	88	66.1 - 107.3

Matrix Spike (MS-1) Spiked Sample: 198007

QC Batch: 60297
Prep Batch: 51453

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	201	mg/Kg	1	250	<5.86	80	35.2 - 167.1

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

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	210	mg/Kg	1	250	<5.86	84	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-Triacontane	86.9	89.1	mg/Kg	1	100	87	89	34.5 - 178.4

Matrix Spike (MS-1) Spiked Sample: 197394

QC Batch: 60299
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	12.1	mg/Kg	5	10.0	<0.00500	121	58.6 - 165.2
Toluene	21.8	mg/Kg	5	10.0	14.0265	78	64.2 - 153.8
Ethylbenzene	20.5	mg/Kg	5	10.0	12.0165	85	61.6 - 159.4
Xylene	72.4	mg/Kg	5	30.0	47.4302	83	64.4 - 155.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	12.6	mg/Kg	5	10.0	<0.00500	126	58.6 - 165.2	4	20
Toluene	23.6	mg/Kg	5	10.0	14.0265	96	64.2 - 153.8	8	20
Ethylbenzene	22.6	mg/Kg	5	10.0	12.0165	106	61.6 - 159.4	10	20
Xylene	78.7	mg/Kg	5	30.0	47.4302	104	64.4 - 155.3	8	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	9.89	9.89	mg/Kg	5	10	99	99	76 - 127.9
4-Bromofluorobenzene (4-BFB)	¹ ² 13.1	14.0	mg/Kg	5	10	131	140	72 - 127.8

Matrix Spike (MS-1) Spiked Sample: 198314

QC Batch: 60300
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

continued ...

¹High surrogate recovery due to peak interference.

²High surrogate recovery due to peak interference.

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	20.4	mg/Kg	1	20.0	0.9449	97	12.8 - 175.2

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	³ 31.2	mg/Kg	1	20.0	0.9449	151	12.8 - 175.2	42	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.00	2.22	mg/Kg	1	2	100	111	60.8 - 132.1
4-Bromofluorobenzene (4-BFB)	1.43	1.50	mg/Kg	1	2	72	75	31.3 - 161.7

Matrix Spike (MS-1) Spiked Sample: 198292

QC Batch: 60312
Prep Batch: 51439

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	21500	mg/Kg	50	5000	15800	114	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	21700	mg/Kg	50	5000	15800	118	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: 198302

QC Batch: 60313
Prep Batch: 51440

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5470	mg/Kg	50	5000	404	101	85 - 115

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

³MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5520	mg/Kg	50	5000	404	102	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: 198312

QC Batch: 60314 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51441 QC Preparation: 2009-06-10 Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	15700	mg/Kg	50	5000	10500	104	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	15800	mg/Kg	50	5000	10500	106	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: 198322

QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51442 QC Preparation: 2009-06-10 Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	16400	mg/Kg	50	5000	11600	96	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	50	5000	11600	98	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 198316

QC Batch: 60339 Date Analyzed: 2009-06-11 Analyzed By: ME
Prep Batch: 51482 QC Preparation: 2009-06-11 Prepared By: ME

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matrix spikes continued ...

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	32.2	mg/Kg	1	20.0	7.6633	123	12.8 - 175.2

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	⁴ 23.2	mg/Kg	1	20.0	7.6633	78	12.8 - 175.2	32	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.20	2.03	mg/Kg	1	2	110	102	60.8 - 132.1
4-Bromofluorobenzene (4-BFB)	1.65	1.45	mg/Kg	1	2	82	72	31.3 - 161.7

Standard (CCV-1)

QC Batch: 60297

Date Analyzed: 2009-06-10

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	256	102	80 - 120	2009-06-10

Standard (CCV-2)

QC Batch: 60297

Date Analyzed: 2009-06-10

Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	262	105	80 - 120	2009-06-10

Standard (CCV-3)

QC Batch: 60297

Date Analyzed: 2009-06-10

Analyzed By: AG

⁴MS/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	266	106	80 - 120	2009-06-10

Standard (CCV-1)

QC Batch: 60299 Date Analyzed: 2009-06-10 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.102	102	80 - 120	2009-06-10
Toluene		mg/Kg	0.100	0.104	104	80 - 120	2009-06-10
Ethylbenzene		mg/Kg	0.100	0.110	110	80 - 120	2009-06-10
Xylene		mg/Kg	0.300	0.338	113	80 - 120	2009-06-10

Standard (CCV-2)

QC Batch: 60299 Date Analyzed: 2009-06-10 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.100	100	80 - 120	2009-06-10
Toluene		mg/Kg	0.100	0.106	106	80 - 120	2009-06-10
Ethylbenzene		mg/Kg	0.100	0.115	115	80 - 120	2009-06-10
Xylene		mg/Kg	0.300	0.356	119	80 - 120	2009-06-10

Standard (CCV-1)

QC Batch: 60300 Date Analyzed: 2009-06-10 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.940	94	80 - 120	2009-06-10

Standard (CCV-2)

QC Batch: 60300 Date Analyzed: 2009-06-10 Analyzed By: ME

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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	0.930	93	80 - 120	2009-06-10

Standard (CCV-3)

QC Batch: 60300 Date Analyzed: 2009-06-10 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.932	93	80 - 120	2009-06-10

Standard (ICV-1)

QC Batch: 60312 Date Analyzed: 2009-06-11 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.7	99	85 - 115	2009-06-11

Standard (CCV-1)

QC Batch: 60312 Date Analyzed: 2009-06-11 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-06-11

Standard (ICV-1)

QC Batch: 60313 Date Analyzed: 2009-06-11 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.9	99	85 - 115	2009-06-11

Standard (CCV-1)

QC Batch: 60313 Date Analyzed: 2009-06-11 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	101	101	85 - 115	2009-06-11

Standard (ICV-1)

QC Batch: 60314 Date Analyzed: 2009-06-11 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.4	98	85 - 115	2009-06-11

Standard (CCV-1)

QC Batch: 60314 Date Analyzed: 2009-06-11 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2009-06-11

Standard (ICV-1)

QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	103	103	85 - 115	2009-06-11

Standard (CCV-1)

QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	96.7	97	85 - 115	2009-06-11

Standard (CCV-1)

QC Batch: 60339 Date Analyzed: 2009-06-11 Analyzed By: ME

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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	1.04	104	80 - 120	2009-06-11

Standard (CCV-2)

QC Batch: 60339

Date Analyzed: 2009-06-11

Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.02	102	80 - 120	2009-06-11

Analysis Request of Chain of Custody Record

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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.: 114-6400214		PROJECT NAME: COG / Brown Fed TB	
LAB I.D. NUMBER	DATE	TIME	MATRIX
108294	6/8		S
295			
296			
297			
298			
299			
300			
301			
302			
303			

SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS		PRESERVATIVE METHOD	
Lea Co. NM				HCL	
				HNO3	
				ICE	
				NONE	

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMPL	GRAB	SAMPLE IDENTIFICATION
108294	6/8		S	X		AH-2 4-4.5' 1' BEB
295						AH-2 5-5.5' 1' BEB
296						AH-3 0-1' 1' BEB
297						AH-3 1-1.5' 1' BEB
298						AH-3 2-2.5' 1' BEB
299						AH-3 3-3.5' 1' BEB
300						AH-3 4-4.5' 1' BEB
301						AH-3 5-5.5' 1' BEB
302						AH-3 6-6.5' 1' BEB
303						AH-4 0-1' 1' BEB

RELINQUISHED BY: (Signature)	Date: 6/8/09	Time: 16:30
RELINQUISHED BY: (Signature)	Date: 6/8/09	Time: 16:30
RELINQUISHED BY: (Signature)	Date: 6/8/09	Time: 16:30
RECEIVING LABORATORY: TRACE	DATE: 6/8/09	TIME: 16:30
ADDRESS: Midland	STATE: TX	ZIP: 79705
CONTACT: Ike Tavaraz	PHONE: (432) 682-4559	
REMARKS: If total TPH exceeds 1,000 mg/kg, run deeper horizons		
SAMPLE CONDITION WHEN RECEIVED: 22.6°C		

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

SAMPLED BY: (Print & Initial)	Date: 6/8/09	Time: 16:30
SAMPLE SHIPPED BY: (Circle)	AIRBILL #:	
FEDEX	BUS	
(GRAND DELIVERED)	UPS	
TETRA TECH CONTACT PERSON: Ike Tavaraz		
Results by:		
RUSH Charges Authorized: Yes No		

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

Run BTEX on 2 highest TPH



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

Certifications

WBENC: 237019

HUB: 1752439743100-86536
NCTRCA WFWB38444Y0909

DBE: VN 20657

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: July 27, 2009

Work Order: 9072233



Project Location: Lea Co., NM
Project Name: COG/Brown Fed. TB
Project Number: 114-6400214

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
203432	SB-1 10-11'	soil	2009-07-21	00:00	2009-07-22
203433	SB-1 15-16'	soil	2009-07-21	00:00	2009-07-22
203434	SB-1 20-21'	soil	2009-07-21	00:00	2009-07-22
203435	SB-1 25-26'	soil	2009-07-21	00:00	2009-07-22
203436	SB-1 30-31'	soil	2009-07-21	00:00	2009-07-22

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 8 pages and shall not be reproduced except in its entirety, without written approval of

TraceAnalysis, Inc.

Blair Leftwich

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/Brown Fed. TB were received by TraceAnalysis, Inc. on 2009-07-22 and assigned to work order 9072233. Samples for work order 9072233 were received intact at a temperature of 12.0 deg. 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	52731	2009-07-24 at 08:16	61867	2009-07-27 at 12:04
Chloride (Titration)	SM 4500-Cl B	52732	2009-07-24 at 08:17	61868	2009-07-27 at 12:05

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9072233 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: July 27, 2009
114-6400214

Work Order: 9072233
COG/Brown Fed. TB

Page Number: 4 of 8
Lea Co., NM

Analytical Report

Sample: 203432 - SB-1 10-11'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-07-27	Analyzed By:	AR
QC Batch:	61867	Sample Preparation:	2009-07-24	Prepared By:	AR
Prep Batch:	52731				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3720	mg/Kg	100	4.00

Sample: 203433 - SB-1 15-16'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-07-27	Analyzed By:	AR
QC Batch:	61867	Sample Preparation:	2009-07-24	Prepared By:	AR
Prep Batch:	52731				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8920	mg/Kg	100	4.00

Sample: 203434 - SB-1 20-21'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-07-27	Analyzed By:	AR
QC Batch:	61867	Sample Preparation:	2009-07-24	Prepared By:	AR
Prep Batch:	52731				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3090	mg/Kg	100	4.00

Sample: 203435 - SB-1 25-26'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-07-27	Analyzed By:	AR
QC Batch:	61867	Sample Preparation:	2009-07-24	Prepared By:	AR
Prep Batch:	52731				

continued ...

Report Date: July 27, 2009
114-6400214

Work Order: 9072233
COG/Brown Fed. TB

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Lea Co., NM

sample 203435 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		745	mg/Kg	50	4.00

Sample: 203436 - SB-1 30-31'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 61868 Date Analyzed: 2009-07-27 Analyzed By: AR
Prep Batch: 52732 Sample Preparation: 2009-07-24 Prepared By: AR

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

Method Blank (1) QC Batch: 61867

QC Batch: 61867 Date Analyzed: 2009-07-27 Analyzed By: AR
Prep Batch: 52731 QC Preparation: 2009-07-24 Prepared By: AR

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

Method Blank (1) QC Batch: 61868

QC Batch: 61868 Date Analyzed: 2009-07-27 Analyzed By: AR
Prep Batch: 52732 QC Preparation: 2009-07-24 Prepared By: AR

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

Report Date: July 27, 2009
114-6400214

Work Order: 9072233
COG/Brown Fed. TB

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Lea Co., NM

Laboratory Control Spike (LCS-1)

QC Batch: 61867
Prep Batch: 52731

Date Analyzed: 2009-07-27
QC Preparation: 2009-07-24

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	102	mg/Kg	1	100	<2.18	102	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 61868
Prep Batch: 52732

Date Analyzed: 2009-07-27
QC Preparation: 2009-07-24

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	101	mg/Kg	1	100	<2.18	101	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 203435

QC Batch: 61867
Prep Batch: 52731

Date Analyzed: 2009-07-27
QC Preparation: 2009-07-24

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10900	mg/Kg	100	10000	745	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	11000	mg/Kg	100	10000	745	102	85 - 115	1	20

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

Report Date: July 27, 2009
114-6400214

Work Order: 9072233
COG/Brown Fed. TB

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Lea Co., NM

Matrix Spike (MS-1) Spiked Sample: 203443

QC Batch: 61868
Prep Batch: 52732

Date Analyzed: 2009-07-27
QC Preparation: 2009-07-24

Analyzed By: AR
Prepared By: AR

Param	MS		Dil.	Spike Amount	Matrix		Rec. Limit
	Result	Units			Result	Rec.	
Chloride	10400	mg/Kg	100	10000	<218	104	85 - 115

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

Param	MSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
	Result	Units							
Chloride	10500	mg/Kg	100	10000	<218	105	85 - 115	1	20

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

Standard (ICV-1)

QC Batch: 61867

Date Analyzed: 2009-07-27

Analyzed By: AR

Param	Flag	Units	ICVs		ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
			True Conc.	Found Conc.			
Chloride		mg/Kg	100	98.7	99	85 - 115	2009-07-27

Standard (CCV-1)

QC Batch: 61867

Date Analyzed: 2009-07-27

Analyzed By: AR

Param	Flag	Units	CCVs		CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
			True Conc.	Found Conc.			
Chloride		mg/Kg	100	101	101	85 - 115	2009-07-27

Standard (ICV-1)

QC Batch: 61868

Date Analyzed: 2009-07-27

Analyzed By: AR

Param	Flag	Units	ICVs		ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
			True Conc.	Found Conc.			
Chloride		mg/Kg	100	101	101	85 - 115	2009-07-27

Standard (CCV-1)

QC Batch: 61868

Date Analyzed: 2009-07-27

Analyzed By: AR

Report Date: July 27, 2009
114-6400214

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COG/Brown Fed. TB

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Lea Co., NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.1	99	85 - 115	2009-07-27

Order # 9072233

PAGE: 1 OF: 1

1:30



TETRA TECH

**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-4560**

(432) 682-4559 • Fax (432) 682-3946

[illegible]

SAMPLE CONDITION WHEN RECEIVED:	REMARKS:
intact	Carry over / All tests Midland Please fill out all copies - Laboratory retains yellow copy - Return Original copy to Terra Tech - Project Manager rat

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

SAMPLE LOG

Boring/Well: SB-1
Project Number: 114-6400214
Client: COG
Site Location: Brown Fed. TB
Location: Lea County, New Mexico
Total Depth: 31
Date Installed: 07/21/09

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
10-11	--	Fine grain tan sand (salty)
15-16	--	Sand clay mix with caliche (salty)
20-21	--	Tan sand clay mix (salty)
25-26	--	Tan sand with some caliche (No Salt)
30-31	--	Caliche (No salt)

Total Depth is 31 feet

Groundwater was not encountered

SITE INFORMATION

RECEIVED

FEB 23 2010

HOBBS

Report Type: Assessment and Closure Report

General Site Information:

Site:	Brown Federal #1 Tank Battery	
Company:	COG Operating LLC	
Section, Township and Range	Section 31, T17S, R32 E	Unit Letter - D
Lease Number:	API-30-025-30199	
County:	Lea County	
GPS:	32.825260° N, 103.791110° W	
Surface Owner:	Federal	
Mineral Owner:		
Directions:	From intersection Hwy 82 and 529, go south 3.8 miles on 529, turn right at lease road, go 0.2 miles, turn left 150 yards. Tank battery is on left.	

Release Data:

Date Released:	6/5/2009
Type Release:	Oil and Produced water
Source of Contamination:	2" Flowline split
Fluid Released:	10 barrels
Fluids Recovered:	0 barrels

Official Communication:

Name:	Pat Ellis	Kim Dorey
Company:	COG Operating, LLC	Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300	1910 N. Big Spring
P.O. Box		
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 686-3023	(432) 631-0348
Fax:	(432) 684-7137	
Email:	pellis@conchoresources.com	kim.dorey@tetrattech.com

Ranking Criteria:

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	greater than 150'
Wellhead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		10

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



TETRA TECH

February 15, 2010

Mr. Geoffrey R. Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 N. French Drive
Hobbs, NM 88240

RECEIVED

FEB 23 2010

HOBBSOCD

Re: Closure Report for the COG Operating LLC., Brown Federal #1 Tank Battery, Unit D, Section 31, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Brown Federal Tank Battery located in Unit D, Section 31, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.79721°, W 103.81344°. 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 June 5, 2009. Approximately 10 barrels of oil/produced water was released from a 2-inch poly line leak. The 2-inch poly line was replaced. The affected area was excavated to a depth of 1 foot below ground surface (bgs). The initial and final C-141 forms are enclosed in Appendix C.

Groundwater

No water wells were listed within Section 31. However, one temporary monitor well was previously installed on adjacent Section 30 by COG at the Pronghorn lease. To establish depth to groundwater the temporary well was drilled to a total depth of 178 feet bgs and no groundwater was encountered. The groundwater data is shown in Appendix A.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases. 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 June 8, 2009, Tetra Tech personnel inspected the spill area, which ranged from approximately 5' to 35' wide by 120' long. During the initial assessment a total of five (5) auger holes (AH-1 through AH-5) were installed using a stainless steel hand auger to assess the impacted soils in the spill area.

Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. All of the samples analyzed were below the RRAL for both BTEX and TPH. The chloride concentrations ranged from <200 milligrams per kilograms (mg/Kg) at AH-1 (4-4.5'), AH-2 (4-4.5'), and AH-3 (5-5.5') to 15,500 mg/Kg at AH-1 (2-2.5') and AH-2 (2-2.5') with the chlorides delineated in AH-1 through AH-3. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The results of the sampling are summarized in Table 1.

In order to complete delineation of the chlorides at the sites, on July 21, 2009, Tetra Tech personnel were onsite to install one (1) borehole (SB-1) utilizing an air rotary rig. Due to limited access issues the boring was installed between auger holes AH-4 and AH-5. The borehole was extended to a maximum depth of 31 feet bgs with samples collected at five foot intervals starting at 10 to 11 feet below excavated depth. The samples were submitted to the laboratory for analysis of chlorides. Analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg was at 20 feet bgs. The chloride concentrations decreased with depth. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The location of the borehole and auger hole locations are shown on Figure 3.



TETRA TECH

Corrective Action

On October 13, 2009, Tetra Tech personnel supervised the excavation of chloride-impacted soils. The areas of AH-4 and AH-5 areas were excavated to a depth of 17' to 20' below surface. Due to the sandy formation, surface gradient, and safety concerns, soil could not be excavated deeper. The remaining areas of AH-1, AH-2, and AH-3 were excavated to a depth of 3' bgs. The excavation depths are shown on Figure 4.

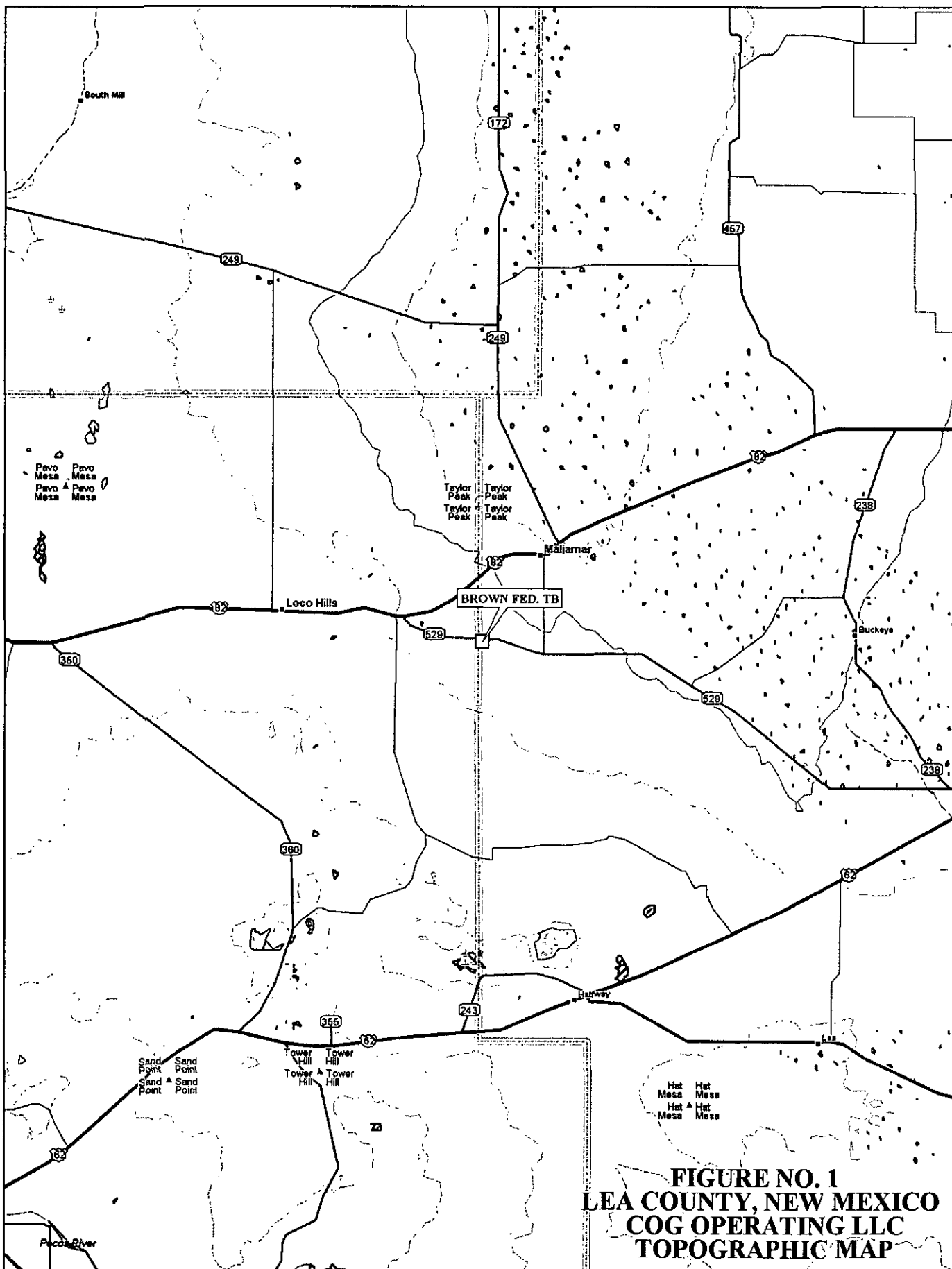
Following excavation, the site was then backfilled and brought up to surface grade with clean soils. The excavated soils, approximately 1,100 cubic yards, were transported to Lea Land, Inc. of Carlsbad, New Mexico for disposal.

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

Respectfully submitted,
TETRA TECH

Kim Dorey
Staff Geologist

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



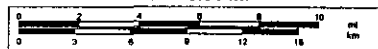
**FIGURE NO. 1
LEA COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP**



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www.delorme.com

Scale 1 : 400,000

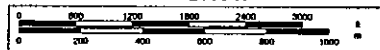
1" = 6.31 mi





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www.delorme.com

Scale 1 : 24,000
1" = 2000 ft



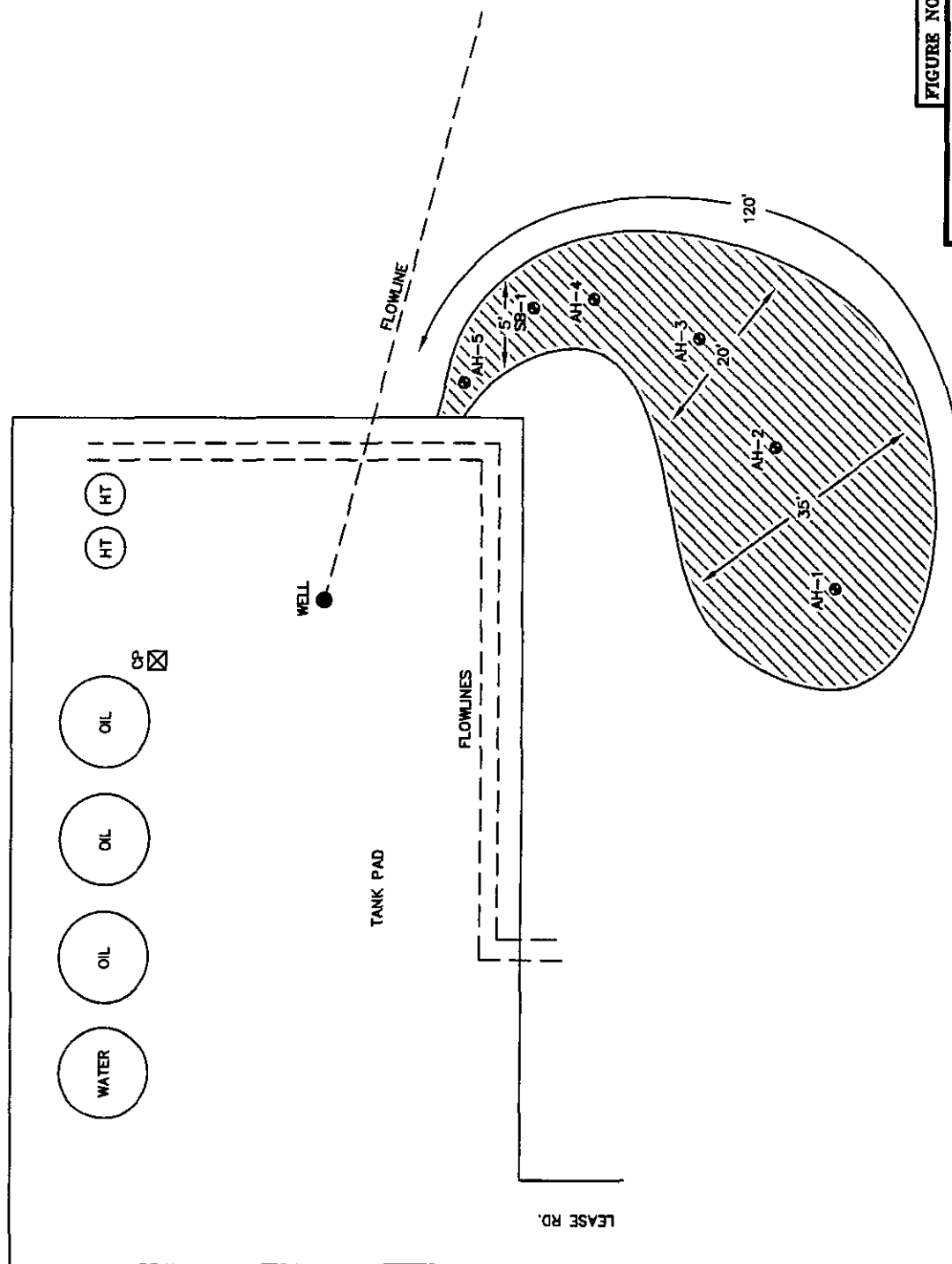


FIGURE NO. 3

UPTON COUNTY, TEXAS

COG OPERATING LLC

BROWN FEDERAL TB

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 6/12/09

DOWN BY:

FILE:
t:\000\000214

NOT TO SCALE

- ☒ SPILL AREA
☐ AUGER HOLE LOCATIONS
☐ BORE HOLE LOCATION

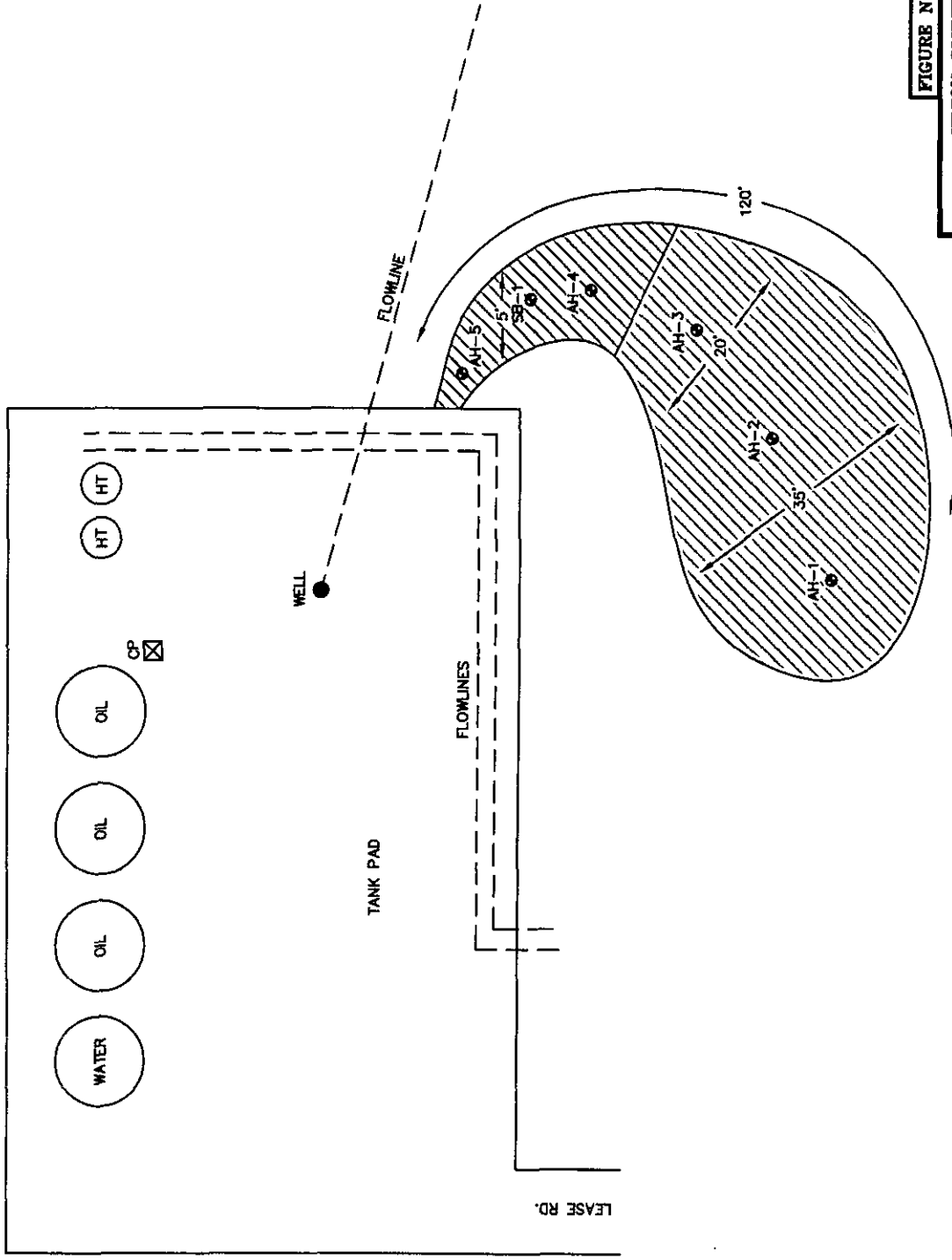


FIGURE NO. 4

UPTON COUNTY, TEXAS
COG OPERATING LLC
BROWN FEDERAL TB
TETRA TECH, INC. MIDLAND, TEXAS

DATE:	6/12/09
DWN. BY:	JJ
FILE:	HY-COG-VAH0214 BROWN FED. TB

NOT TO SCALE

- ☒ SPILL AREA EXCAVATED 16.0' TO 19.0' DEEP
- ☒ SPILL AREA EXCAVATED 3.0' DEEP
- ☒ AUGER HOLE LOCATIONS
- ☒ BORE HOLE LOCATION

Table 1
COG Operating LLC
Brown Federal Tank Battery
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Excavation Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
AH-1	6/8/2009	0-1			X	<50.0	22.6	22.6	<0.0100	0.0938	<0.0100	0.330	8,060
	6/8/2009	1-1.5			X	-	-	-	-	-	-	-	13,200
	6/8/2009	2-2.5			X	-	-	-	-	-	-	-	15,800
	6/8/2009	3-3.5			X	-	-	-	-	-	-	-	5,080
	6/8/2009	4-4.5		X		-	-	-	-	-	-	-	<200
	6/8/2009	5-5.5		X		-	-	-	-	-	-	-	367
AH-2													
	6/8/2009	0-1			X	<50.0	9.76	9.76	-	-	-	-	326
	6/8/2009	1-1.5			X	-	-	-	-	-	-	-	1980
	6/8/2009	2-2.5			X	-	-	-	-	-	-	-	15800
	6/8/2009	3-3.5			X	-	-	-	-	-	-	-	1280
	6/8/2009	4-4.5		X		-	-	-	-	-	-	-	<200
AH-3	6/8/2009	5-5.5		X		-	-	-	-	-	-	-	367
	6/8/2009	0-1			X	<50.0	8.57	8.57	-	-	-	-	4160
	6/8/2009	1-1.5			X	-	-	-	-	-	-	-	12000
	6/8/2009	2-2.5			X	-	-	-	-	-	-	-	11800
	6/8/2009	3-3.5			X	-	-	-	-	-	-	-	3050
	6/8/2009	4-4.5		X		-	-	-	-	-	-	-	525
	6/8/2009	5-5.5		X		-	-	-	-	-	-	-	<200
	6/8/2009	6-6.5		X		-	-	-	-	-	-	-	404

Table 1
COG Operating LLC
Brown Federal Tank Battery
Lea County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Excavation Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
AH-4	6/8/2009	0-1.5			X	550	11.1	561.1	<0.0100	<0.0100	<0.0100	0.104	4840
	6/8/2009	1-1.5			X	-	-	-	-	-	-	-	3540
	6/8/2009	2-2.5			X	-	-	-	-	-	-	-	3140
	6/8/2009	3-3.5			X	-	-	-	-	-	-	-	3010
	6/8/2009	4-4.5			X	-	-	-	-	-	-	-	4650
	6/8/2009	5-5.5			X	-	-	-	-	-	-	-	15000
	6/8/2009	6-6.5			X	-	-	-	-	-	-	-	10600
	6/8/2009	7-7.5			X	-	-	-	-	-	-	-	11200
	6/8/2009	8-8.5			X	-	-	-	-	-	-	-	10600
	6/8/2009	9-9.5			X	-	-	-	-	-	-	-	10500
AH-5	6/8/2009	10-10.5			X	-	-	-	-	-	-	-	11800
	6/8/2009	0-1			X	<50.0	<1.0	<50.0	-	-	-	-	3970
	6/8/2009	1-1.5			X	<50.0	13.2	13.2	-	-	-	-	4430
	6/8/2009	2-2.5			X	<50.0	7.66	7.66	-	-	-	-	4900
	6/8/2009	4-4.5			X	-	-	-	-	-	-	-	4300
	6/8/2009	5-5.5			X	-	-	-	-	-	-	-	4100
	6/8/2009	6-6.5			X	-	-	-	-	-	-	-	3920
	6/8/2009	8-8.5			X	-	-	-	-	-	-	-	9960
SB-1	6/8/2009	9-9.5			X	-	-	-	-	-	-	-	9360
	6/8/2009	10-10.5			X	-	-	-	-	-	-	-	11600
	7/21/2009	10-11'			X	-	-	-	-	-	-	-	3720
	7/21/2009	15-16'			X	-	-	-	-	-	-	-	8920
	7/21/2009	20-21'	17-20'		X	-	-	-	-	-	-	-	3090
	7/21/2009	25-26'	17-20'	X		-	-	-	-	-	-	-	745
	7/21/2009	30-31'	17-20'	X		-	-	-	-	-	-	-	<200

(-) Not Analyzed
☐ Removed and hauled to disposal

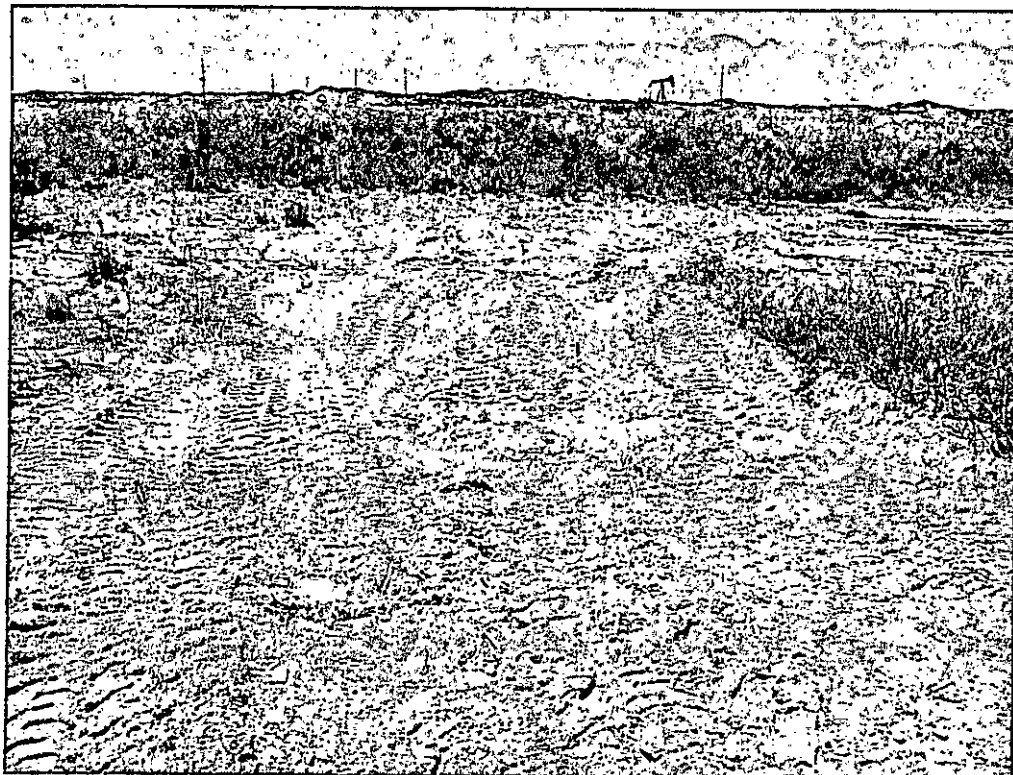
COG Operating LLC
Brown Federal Tank Battery
Lea County, New Mexico



TETRA TECH



June 8, 2009 – Site assessment (AH-5)

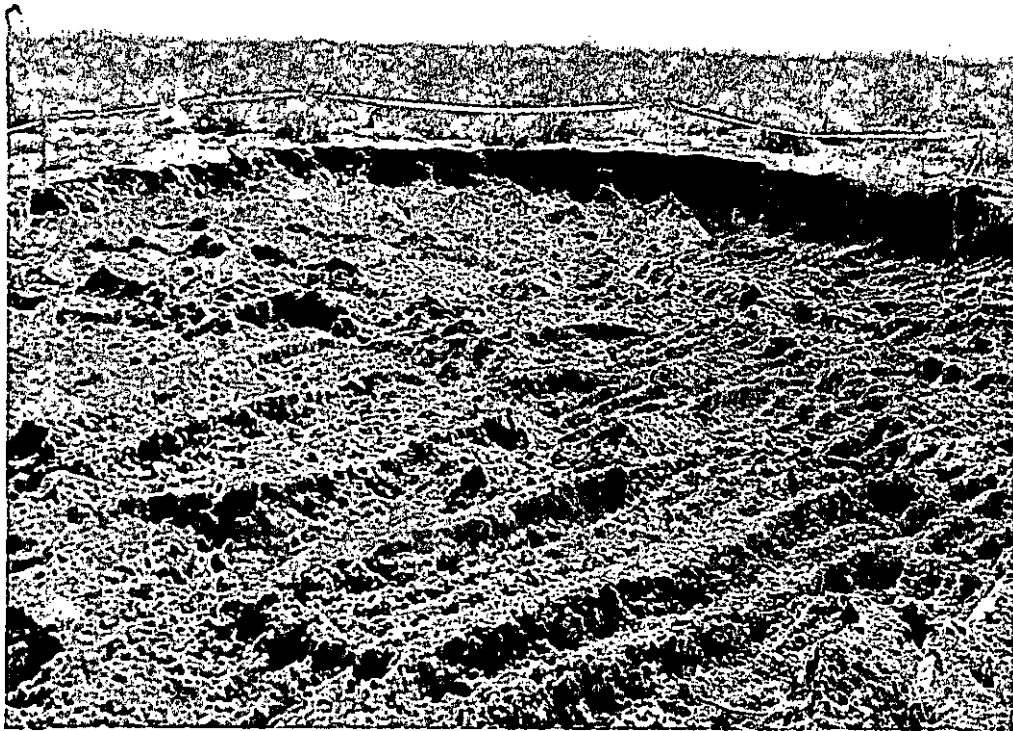


June 8, 2009 – Site Assessment (AH-3 and AH-2)

COG Operating LLC
Brown Federal Tank Battery
Lea County, New Mexico



TETRA TECH



October 13, 2009 – 3' removal (AH-1,AH-2, & AH-3)



October 13, 2009 – 16-19' removal (AH-4 & AH-5)

Water Well Data
Average Depth to Groundwater (ft)
COG Operating, LLC., Brown Federal Tank Battery

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

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

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

16 South			32 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				260	

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

18 South			32 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
				117	

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

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

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

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

178 Based on temporary water well drilled at the COG Pronghorn 30 release location.

- | 18 South | | | 33 East | | |
|------------|----------|----|-----------|----------|---------------|
| 6 | 5 | 4 | 3 | 2 | 1 |
| 7 | 8 100 | 9 | 10
62 | 11 | 12 143
140 |
| 18 | 17
85 | 16 | 15 | 14
36 | 13 60 |
| 19
>140 | 20 | 21 | 22 | 23 | 24
195 |
| 30
35 | 29 | 28 | 27 | 26 | 25 |
| 31 | 32 | 33 | 34
177 | 35 | 36 |

Summary Report

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

Report Date: July 27, 2009

Work Order: 9072233



Project Location: Lea Co., NM
Project Name: COG/Brown Fed. TB
Project Number: 114-6400214

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
203432	SB-1 10-11'	soil	2009-07-21	00:00	2009-07-22
203433	SB-1 15-16'	soil	2009-07-21	00:00	2009-07-22
203434	SB-1 20-21'	soil	2009-07-21	00:00	2009-07-22
203435	SB-1 25-26'	soil	2009-07-21	00:00	2009-07-22
203436	SB-1 30-31'	soil	2009-07-21	00:00	2009-07-22

Sample: 203432 - SB-1 10-11'

Param	Flag	Result	Units	RL
Chloride		3720	mg/Kg	4.00

Sample: 203433 - SB-1 15-16'

Param	Flag	Result	Units	RL
Chloride		8920	mg/Kg	4.00

Sample: 203434 - SB-1 20-21'

Param	Flag	Result	Units	RL
Chloride		3090	mg/Kg	4.00

Sample: 203435 - SB-1 25-26'

Report Date: July 27, 2009

Work Order: 9072233

Page Number: 2 of 2

Param	Flag	Result	Units	RL
Chloride		745	mg/Kg	4.00

Sample: 203436 - SB-1 30-31'

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



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1296
200 East Sunset Road, Suite E El Paso, Texas 79522 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5250
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 Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: July 27, 2009

Work Order: 9072233



Project Location: Lea Co., NM
Project Name: COG/Brown Fed. TB
Project Number: 114-6400214

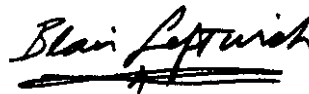
Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
203432	SB-1 10-11'	soil	2009-07-21	00:00	2009-07-22
203433	SB-1 15-16'	soil	2009-07-21	00:00	2009-07-22
203434	SB-1 20-21'	soil	2009-07-21	00:00	2009-07-22
203435	SB-1 25-26'	soil	2009-07-21	00:00	2009-07-22
203436	SB-1 30-31'	soil	2009-07-21	00:00	2009-07-22

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 8 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/Brown Fed. TB were received by TraceAnalysis, Inc. on 2009-07-22 and assigned to work order 9072233. Samples for work order 9072233 were received intact at a temperature of 12.0 deg. 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	52731	2009-07-24 at 08:16	61867	2009-07-27 at 12:04
Chloride (Titration)	SM 4500-Cl B	52732	2009-07-24 at 08:17	61868	2009-07-27 at 12:05

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9072233 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: July 27, 2009
114-6400214

Work Order: 9072233
COG/Brown Fed. TB

Page Number: 4 of 8
Lea Co., NM

Analytical Report

Sample: 203432 - SB-1 10-11'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-07-27	Analyzed By:	AR
QC Batch:	61867	Sample Preparation:	2009-07-24	Prepared By:	AR
Prep Batch:	52731				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3720	mg/Kg	100	4.00

Sample: 203433 - SB-1 15-16'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-07-27	Analyzed By:	AR
QC Batch:	61867	Sample Preparation:	2009-07-24	Prepared By:	AR
Prep Batch:	52731				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8920	mg/Kg	100	4.00

Sample: 203434 - SB-1 20-21'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-07-27	Analyzed By:	AR
QC Batch:	61867	Sample Preparation:	2009-07-24	Prepared By:	AR
Prep Batch:	52731				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3090	mg/Kg	100	4.00

Sample: 203435 - SB-1 25-26'

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-07-27	Analyzed By:	AR
QC Batch:	61867	Sample Preparation:	2009-07-24	Prepared By:	AR
Prep Batch:	52731				

continued ...

Report Date: July 27, 2009
114-6400214

Work Order: 9072233
COG/Brown Fed. TB

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Lea Co., NM

sample 203435 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		745	mg/Kg	50	4.00

Sample: 203436 - SB-1 30-31'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 61868 Date Analyzed: 2009-07-27 Analyzed By: AR
Prep Batch: 52732 Sample Preparation: 2009-07-24 Prepared By: AR

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

Method Blank (1) QC Batch: 61867

QC Batch: 61867 Date Analyzed: 2009-07-27 Analyzed By: AR
Prep Batch: 52731 QC Preparation: 2009-07-24 Prepared By: AR

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

Method Blank (1) QC Batch: 61868

QC Batch: 61868 Date Analyzed: 2009-07-27 Analyzed By: AR
Prep Batch: 52732 QC Preparation: 2009-07-24 Prepared By: AR

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

Report Date: July 27, 2009
114-6400214

Work Order: 9072233
COG/Brown Fed. TB

Page Number: 6 of 8
Lea Co., NM

Laboratory Control Spike (LCS-1)

QC Batch: 61867
Prep Batch: 52731

Date Analyzed: 2009-07-27
QC Preparation: 2009-07-24

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	102	mg/Kg	1	100	<2.18	102	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 61868
Prep Batch: 52732

Date Analyzed: 2009-07-27
QC Preparation: 2009-07-24

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	101	mg/Kg	1	100	<2.18	101	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 203435

QC Batch: 61867
Prep Batch: 52731

Date Analyzed: 2009-07-27
QC Preparation: 2009-07-24

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10900	mg/Kg	100	10000	745	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	11000	mg/Kg	100	10000	745	102	85 - 115	1	20

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

Report Date: July 27, 2009
114-6400214

Work Order: 9072233
COG/Brown Fed. TB

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Lea Co., NM

Matrix Spike (MS-1) Spiked Sample: 203443

QC Batch: 61868
Prep Batch: 52732

Date Analyzed: 2009-07-27
QC Preparation: 2009-07-24

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10400	mg/Kg	100	10000	<218	104	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10500	mg/Kg	100	10000	<218	105	85 - 115	1	20

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

Standard (ICV-1)

QC Batch: 61867

Date Analyzed: 2009-07-27

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.7	99	85 - 115	2009-07-27

Standard (CCV-1)

QC Batch: 61867

Date Analyzed: 2009-07-27

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-07-27

Standard (ICV-1)

QC Batch: 61868

Date Analyzed: 2009-07-27

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-07-27

Standard (CCV-1)

QC Batch: 61868

Date Analyzed: 2009-07-27

Analyzed By: AR

Report Date: July 27, 2009
114-6400214

Work Order: 9072233
COG/Brown Fed. TB

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Lea Co., NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.1	99	85 - 115	2009-07-27

Order # 9072233

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 Tavaroz									
PROJECT NO.: 114-6400214		PROJECT NAME: COG / Brown Federal TB Len Co Nm									
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	PRESERVATIVE METHOD				
							NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	
203432	7/21		S	X	X	SB-1 10-11'					
433	7/21		S	X	X	SB-1 15-16'					
434	7/21		S	X	X	SB-1 20-21'					
435	7/21		S	X	X	SB-1 25-26'					
436	7/21		S	X	X	SB-1 30-31'					

ANALYSIS REQUEST
(Circle or Specify Method No.)

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

RELINQUISHED BY: (Signature)	Date: 7/22/09	RECEIVED BY: (Signature)	Date: 7/22/09
RELINQUISHED BY: (Signature)	Date: 7/22/09	RECEIVED BY: (Signature)	Date: 7/22/09
RELINQUISHED BY: (Signature)	Date: 7/22/09	RECEIVED BY: (Signature)	Date: 7/22/09
RECEIVING LABORATORY:	ADDRESS: Midland		
CITY: Midland	STATE: TX	PHONE:	ZIP:
CONTACT: T. R. ACE	DATE: 7/22/09		
SAMPLE CONDITION WHEN RECEIVED: Intact			
REMARKS: Carry-out / All tests Midland			

TETRA TECH CONTACT PERSON: Ike Tavaroz		Results by:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS UPS		AIRBILL #:
SAMPLED BY: (Print & Initial) Kim		OTHER:
Date: 7/22/09		Time: 7:11:09
RUSH Charges Authorized:		Yes No

Report Date: June 15, 2009
114-6400214

Work Order: 9060854
COG/Brown Fed. TB

Page Number: 1 of 7
Lea Co., NM

Summary Report

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

Report Date: June 15, 2009

Work Order: 9060854



Project Location: Lea Co., NM
Project Name: COG/Brown Fed. TB
Project Number: 114-6400214

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
198284	AH-1 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198285	AH-1 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198286	AH-1 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198287	AH-1 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198288	AH-1 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198289	AH-1 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198290	AH-2 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198291	AH-2 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198292	AH-2 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198293	AH-2 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198294	AH-2 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198295	AH-2 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198296	AH-3 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198297	AH-3 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198298	AH-3 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198299	AH-3 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198300	AH-3 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198301	AH-3 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198302	AH-3 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198303	AH-4 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198304	AH-4 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198305	AH-4 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198306	AH-4 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198307	AH-4 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198308	AH-4 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198309	AH-4 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198310	AH-4 7-7.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198311	AH-4 8-8.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198312	AH-4 9-9.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198313	AH-4 10-10.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08

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

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

Report Date: June 15, 2009
114-6400214

Work Order: 9060854
COG/Brown Fed. TB

Page Number: 2 of 7
Lea Co., NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
198314	AH-5 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198315	AH-5 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198316	AH-5 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198317	AH-5 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198318	AH-5 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198319	AH-5 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198320	AH-5 8-8.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198321	AH-5 9-9.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198322	AH-5 10-10.5' 1' BEB)	soil	2009-06-08	00:00	2009-06-08

Sample - Field Code	BTEX				TPH DRO	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
198284 - AH-1 0-1' (1' BEB)	<0.0100	0.0938	<0.0100	0.330	<50.0	22.6
198290 - AH-2 0-1' (1' BEB)					<50.0	9.76
198296 - AH-3 0-1' (1' BEB)					<50.0	8.57
198303 - AH-4 0-1' (1' BEB)	<0.0100	<0.0100	<0.0100	0.104	550	11.1
198314 - AH-5 0-1' (1' BEB)					<50.0	<1.00
198315 - AH-5 1-1.5' (1' BEB)					<50.0	13.2
198316 - AH-5 2-2.5' (1' BEB)					<50.0	7.66

Sample: 198284 - AH-1 0-1' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		8060	mg/Kg	4.00

Sample: 198285 - AH-1 1-1.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		13200	mg/Kg	4.00

Sample: 198286 - AH-1 2-2.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		15800	mg/Kg	4.00

Sample: 198287 - AH-1 3-3.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		5080	mg/Kg	4.00

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Sample: 198288 - AH-1 4-4.5' (1' BEB)

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

Sample: 198289 - AH-1 5-5.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		367	mg/Kg	4.00

Sample: 198290 - AH-2 0-1' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		326	mg/Kg	4.00

Sample: 198291 - AH-2 1-1.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		1980	mg/Kg	4.00

Sample: 198292 - AH-2 2-2.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		15800	mg/Kg	4.00

Sample: 198293 - AH-2 3-3.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		1280	mg/Kg	4.00

Sample: 198294 - AH-2 4-4.5' (1' BEB)

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

Sample: 198295 - AH-2 5-5.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3560	mg/Kg	4.00

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Sample: 198296 - AH-3 0-1' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4160	mg/Kg	4.00

Sample: 198297 - AH-3 1-1.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		12000	mg/Kg	4.00

Sample: 198298 - AH-3 2-2.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		11800	mg/Kg	4.00

Sample: 198299 - AH-3 3-3.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3050	mg/Kg	4.00

Sample: 198300 - AH-3 4-4.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		525	mg/Kg	4.00

Sample: 198301 - AH-3 5-5.5' (1' BEB)

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

Sample: 198302 - AH-3 6-6.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		404	mg/Kg	4.00

Sample: 198303 - AH-4 0-1' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4840	mg/Kg	4.00

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Sample: 198304 - AH-4 1-1.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3540	mg/Kg	4.00

Sample: 198305 - AH-4 2-2.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3140	mg/Kg	4.00

Sample: 198306 - AH-4 3-3.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3010	mg/Kg	4.00

Sample: 198307 - AH-4 4-4.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4650	mg/Kg	4.00

Sample: 198308 - AH-4 5-5.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		15000	mg/Kg	4.00

Sample: 198309 - AH-4 6-6.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		10600	mg/Kg	4.00

Sample: 198310 - AH-4 7-7.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		11200	mg/Kg	4.00

Sample: 198311 - AH-4 8-8.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		10600	mg/Kg	4.00

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Sample: 198312 - AH-4 9-9.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		10500	mg/Kg	4.00

Sample: 198313 - AH-4 10-10.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		11800	mg/Kg	4.00

Sample: 198314 - AH-5 0-1' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3970	mg/Kg	4.00

Sample: 198315 - AH-5 1-1.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4430	mg/Kg	4.00

Sample: 198316 - AH-5 2-2.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4900	mg/Kg	4.00

Sample: 198317 - AH-5 4-4.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4300	mg/Kg	4.00

Sample: 198318 - AH-5 5-5.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		4100	mg/Kg	4.00

Sample: 198319 - AH-5 6-6.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		3920	mg/Kg	4.00

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Sample: 198320 - AH-5 8-8.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		9960	mg/Kg	4.00

Sample: 198321 - AH-5 9-9.5' (1' BEB)

Param	Flag	Result	Units	RL
Chloride		9360	mg/Kg	4.00

Sample: 198322 - AH-5 10-10.5' 1' BEB)

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00



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E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019

HUB: 1752439743100-86536

DBE: VN 20657

NCTRCA WFVB38444Y0909

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

Report Date: June 15, 2009

Work Order: 9060854



Project Location: Lea Co., NM
Project Name: COG/Brown Fed. TB
Project Number: 114-6400214

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
198284	AH-1 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198285	AH-1 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198286	AH-1 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198287	AH-1 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198288	AH-1 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198289	AH-1 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198290	AH-2 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198291	AH-2 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198292	AH-2 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198293	AH-2 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
198294	AH-2 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198295	AH-2 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198296	AH-3 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198297	AH-3 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198298	AH-3 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198299	AH-3 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198300	AH-3 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198301	AH-3 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198302	AH-3 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198303	AH-4 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198304	AH-4 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198305	AH-4 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198306	AH-4 3-3.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198307	AH-4 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198308	AH-4 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198309	AH-4 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198310	AH-4 7-7.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198311	AH-4 8-8.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198312	AH-4 9-9.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198313	AH-4 10-10.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198314	AH-5 0-1' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198315	AH-5 1-1.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198316	AH-5 2-2.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198317	AH-5 4-4.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198318	AH-5 5-5.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198319	AH-5 6-6.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198320	AH-5 8-8.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198321	AH-5 9-9.5' (1' BEB)	soil	2009-06-08	00:00	2009-06-08
198322	AH-5 10-10.5' 1' BEB)	soil	2009-06-08	00:00	2009-06-08

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



Dr. Blair Leftwich, Director

Standard Flags

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

Case Narrative

Samples for project COG/Brown Fed. TB were received by TraceAnalysis, Inc. on 2009-06-08 and assigned to work order 9060854. Samples for work order 9060854 were received intact without headspace and at a temperature of 22.6 deg. C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	51454	2009-06-10 at 09:21	60299	2009-06-10 at 09:21
Chloride (Titration)	SM 4500-Cl B	51439	2009-06-10 at 10:36	60312	2009-06-11 at 14:01
Chloride (Titration)	SM 4500-Cl B	51440	2009-06-10 at 10:37	60313	2009-06-11 at 14:02
Chloride (Titration)	SM 4500-Cl B	51441	2009-06-10 at 10:38	60314	2009-06-11 at 14:03
Chloride (Titration)	SM 4500-Cl B	51442	2009-06-10 at 10:38	60315	2009-06-11 at 14:04
TPH DRO	Mod. 8015B	51453	2009-06-10 at 15:00	60297	2009-06-10 at 12:21
TPH GRO	S 8015B	51454	2009-06-10 at 09:21	60300	2009-06-10 at 09:21
TPH GRO	S 8015B	51482	2009-06-11 at 12:56	60339	2009-06-11 at 12:56

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 9060854 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

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Analytical Report

Sample: 198284 - AH-1 0-1' (1' BEB)

Laboratory: Midland

Analysis: BTEX

QC Batch: 60299

Prep Batch: 51454

Analytical Method: S 8021B

Date Analyzed: 2009-06-10

Sample Preparation: 2009-06-10

Prep Method: S 5035

Analyzed By: ME

Prepared By: ME

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		0.0938	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		0.330	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.93	mg/Kg	1	2.00	96	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.98	mg/Kg	1	2.00	99	45.2 - 144.3

Sample: 198284 - AH-1 0-1' (1' BEB)

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 60312

Prep Batch: 51439

Analytical Method: SM 4500-Cl B

Date Analyzed: 2009-06-11

Sample Preparation: 2009-06-10

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		8060	mg/Kg	50	4.00

Sample: 198284 - AH-1 0-1' (1' BEB)

Laboratory: Midland

Analysis: TPH DRO

QC Batch: 60297

Prep Batch: 51453

Analytical Method: Mod. 8015B

Date Analyzed: 2009-06-10

Sample Preparation: 2009-06-10

Prep Method: N/A

Analyzed By: AG

Prepared By: AG

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		89.6	mg/Kg	1	100	90	13.2 - 219.3

Sample: 198284 - AH-1 0-1' (1' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 60300 Date Analyzed: 2009-06-10 Analyzed By: ME
Prep Batch: 51454 Sample Preparation: 2009-06-10 Prepared By: ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		22.6	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.02	mg/Kg	1	2.00	101	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	52 - 117

Sample: 198285 - AH-1 1-1.5' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60312 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51439 Sample Preparation: 2009-06-10 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		13200	mg/Kg	50	4.00

Sample: 198286 - AH-1 2-2.5' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60312 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51439 Sample Preparation: 2009-06-10 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		15800	mg/Kg	50	4.00

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Sample: 198287 - AH-1 3-3.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60312	Date Analyzed:	2009-06-11
Prep Batch:	51439	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		5080	mg/Kg	50	4.00

Sample: 198288 - AH-1 4-4.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60312	Date Analyzed:	2009-06-11
Prep Batch:	51439	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Sample: 198289 - AH-1 5-5.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60312	Date Analyzed:	2009-06-11
Prep Batch:	51439	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		367	mg/Kg	50	4.00

Sample: 198290 - AH-2 0-1' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60312	Date Analyzed:	2009-06-11
Prep Batch:	51439	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		326	mg/Kg	50	4.00

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Lea Co., NM

Sample: 198290 - AH-2 0-1' (1' BEB)

Laboratory:	Midland		
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B
QC Batch:	60297	Date Analyzed:	2009-06-10
Prep Batch:	51453	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AG
		Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		106	mg/Kg	1	100	106	13.2 - 219.3

Sample: 198290 - AH-2 0-1' (1' BEB)

Laboratory:	Midland		
Analysis:	TPH GRO	Analytical Method:	S 8015B
QC Batch:	60300	Date Analyzed:	2009-06-10
Prep Batch:	51454	Sample Preparation:	2009-06-10
		Prep Method:	S 5035
		Analyzed By:	ME
		Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		9.76	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.05	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.42	mg/Kg	1	2.00	71	52 - 117

Sample: 198291 - AH-2 1-1.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60312	Date Analyzed:	2009-06-11
Prep Batch:	51439	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1980	mg/Kg	50	4.00

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Sample: 198292 - AH-2 2-2.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60312	Date Analyzed:	2009-06-11
Prep Batch:	51439	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		15800	mg/Kg	50	4.00

Sample: 198293 - AH-2 3-3.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60313	Date Analyzed:	2009-06-11
Prep Batch:	51440	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1280	mg/Kg	50	4.00

Sample: 198294 - AH-2 4-4.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60313	Date Analyzed:	2009-06-11
Prep Batch:	51440	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Sample: 198295 - AH-2 5-5.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60313	Date Analyzed:	2009-06-11
Prep Batch:	51440	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3560	mg/Kg	50	4.00

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Sample: 198296 - AH-3 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4160	mg/Kg	50	4.00

Sample: 198296 - AH-3 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2009-06-10	Analyzed By:	AG
QC Batch:	60297	Sample Preparation:	2009-06-10	Prepared By:	AG
Prep Batch:	51453				

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		92.5	mg/Kg	1	100	92	13.2 - 219.3

Sample: 198296 - AH-3 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	S 8015B	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2009-06-10	Analyzed By:	ME
QC Batch:	60300	Sample Preparation:	2009-06-10	Prepared By:	ME
Prep Batch:	51454				

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		8.57	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.06	mg/Kg	1	2.00	103	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.31	mg/Kg	1	2.00	66	52 - 117

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Sample: 198297 - AH-3 1-1.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60313	Date Analyzed:	2009-06-11
Prep Batch:	51440	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		12000	mg/Kg	50	4.00

Sample: 198298 - AH-3 2-2.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60313	Date Analyzed:	2009-06-11
Prep Batch:	51440	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11800	mg/Kg	50	4.00

Sample: 198299 - AH-3 3-3.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60313	Date Analyzed:	2009-06-11
Prep Batch:	51440	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3050	mg/Kg	50	4.00

Sample: 198300 - AH-3 4-4.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60313	Date Analyzed:	2009-06-11
Prep Batch:	51440	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		525	mg/Kg	50	4.00

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Sample: 198301 - AH-3 5-5.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

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

Sample: 198302 - AH-3 6-6.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60313	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51440				

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

Sample: 198303 - AH-4 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2009-06-10	Analyzed By:	ME
QC Batch:	60299	Sample Preparation:	2009-06-10	Prepared By:	ME
Prep Batch:	51454				

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		0.104	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.98	mg/Kg	1	2.00	99	49 - 129.7
4-Bromofluorobenzene (4-BFB)		1.77	mg/Kg	1	2.00	88	45.2 - 144.3

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Sample: 198303 - AH-4 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60314	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51441				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4840	mg/Kg	50	4.00

Sample: 198303 - AH-4 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	Mod. 8015B	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2009-06-10	Analyzed By:	AG
QC Batch:	60297	Sample Preparation:	2009-06-10	Prepared By:	AG
Prep Batch:	51453				

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		550	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		140	mg/Kg	1	100	140	13.2 - 219.3

Sample: 198303 - AH-4 0-1' (1' BEB)

Laboratory:	Midland	Analytical Method:	S 8015B	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2009-06-10	Analyzed By:	ME
QC Batch:	60300	Sample Preparation:	2009-06-10	Prepared By:	ME
Prep Batch:	51454				

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		11.1	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.99	mg/Kg	1	2.00	100	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.33	mg/Kg	1	2.00	66	52 - 117

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Sample: 198304 - AH-4 1-1.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60314	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51441				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3540	mg/Kg	50	4.00

Sample: 198305 - AH-4 2-2.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60314	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51441				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3140	mg/Kg	50	4.00

Sample: 198306 - AH-4 3-3.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60314	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51441				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3010	mg/Kg	50	4.00

Sample: 198307 - AH-4 4-4.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60314	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51441				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4650	mg/Kg	50	4.00

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Sample: 198308 - AH-4 5-5.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60314	Date Analyzed:	2009-06-11
Prep Batch:	51441	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		15000	mg/Kg	50	4.00

Sample: 198309 - AH-4 6-6.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60314	Date Analyzed:	2009-06-11
Prep Batch:	51441	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		10600	mg/Kg	50	4.00

Sample: 198310 - AH-4 7-7.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60314	Date Analyzed:	2009-06-11
Prep Batch:	51441	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11200	mg/Kg	50	4.00

Sample: 198311 - AH-4 8-8.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60314	Date Analyzed:	2009-06-11
Prep Batch:	51441	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		10600	mg/Kg	50	4.00

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Sample: 198312 - AH-4 9-9.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60314	Date Analyzed:	2009-06-11
Prep Batch:	51441	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		10500	mg/Kg	50	4.00

Sample: 198313 - AH-4 10-10.5' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60315	Date Analyzed:	2009-06-11
Prep Batch:	51442	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11800	mg/Kg	50	4.00

Sample: 198314 - AH-5 0-1' (1' BEB)

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	60315	Date Analyzed:	2009-06-11
Prep Batch:	51442	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3970	mg/Kg	50	4.00

Sample: 198314 - AH-5 0-1' (1' BEB)

Laboratory:	Midland		
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B
QC Batch:	60297	Date Analyzed:	2009-06-10
Prep Batch:	51453	Sample Preparation:	2009-06-10
		Prep Method:	N/A
		Analyzed By:	AG
		Prepared By:	AG

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		99.5	mg/Kg	1	100	100	13.2 - 219.3

Sample: 198314 - AH-5 0-1' (1' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 60300 Date Analyzed: 2009-06-10 Analyzed By: ME
Prep Batch: 51454 Sample Preparation: 2009-06-10 Prepared By: ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.39	mg/Kg	1	2.00	70	52 - 117

Sample: 198315 - AH-5 1-1.5' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51442 Sample Preparation: 2009-06-10 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4430	mg/Kg	50	4.00

Sample: 198315 - AH-5 1-1.5' (1' BEB)

Laboratory: Midland
Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 60297 Date Analyzed: 2009-06-10 Analyzed By: AG
Prep Batch: 51453 Sample Preparation: 2009-06-10 Prepared By: AG

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		110	mg/Kg	1	100	110	13.2 - 219.3

Sample: 198315 - AH-5 1-1.5' (1' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 60339 Date Analyzed: 2009-06-11 Analyzed By: ME
Prep Batch: 51482 Sample Preparation: 2009-06-11 Prepared By: ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		13.2	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.11	mg/Kg	1	2.00	106	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.59	mg/Kg	1	2.00	80	52 - 117

Sample: 198316 - AH-5 2-2.5' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51442 Sample Preparation: 2009-06-10 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4900	mg/Kg	50	4.00

Sample: 198316 - AH-5 2-2.5' (1' BEB)

Laboratory: Midland
Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 60297 Date Analyzed: 2009-06-10 Analyzed By: AG
Prep Batch: 51453 Sample Preparation: 2009-06-10 Prepared By: AG

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

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		98.6	mg/Kg	1	100	99	13.2 - 219.3

Sample: 198316 - AH-5 2-2.5' (1' BEB)

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 60339 Date Analyzed: 2009-06-11 Analyzed By: ME
Prep Batch: 51482 Sample Preparation: 2009-06-11 Prepared By: ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		7.66	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		1.37	mg/Kg	1	2.00	68	52 - 117

Sample: 198317 - AH-5 4-4.5' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51442 Sample Preparation: 2009-06-10 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4300	mg/Kg	50	4.00

Sample: 198318 - AH-5 5-5.5' (1' BEB)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 60315 Date Analyzed: 2009-06-11 Analyzed By: AR
Prep Batch: 51442 Sample Preparation: 2009-06-10 Prepared By: AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4100	mg/Kg	50	4.00

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Sample: 198319 - AH-5 6-6.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60315	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51442				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3920	mg/Kg	50	4.00

Sample: 198320 - AH-5 8-8.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60315	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51442				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9960	mg/Kg	50	4.00

Sample: 198321 - AH-5 9-9.5' (1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60315	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51442				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		9360	mg/Kg	50	4.00

Sample: 198322 - AH-5 10-10.5' 1' BEB)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2009-06-11	Analyzed By:	AR
QC Batch:	60315	Sample Preparation:	2009-06-10	Prepared By:	AR
Prep Batch:	51442				

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		11600	mg/Kg	50	4.00

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Method Blank (1) QC Batch: 60297

QC Batch: 60297
Prep Batch: 51453

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: AG
Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
DRO		7.14	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		116	mg/Kg	1	100	116	13 - 178.5

Method Blank (1) QC Batch: 60299

QC Batch: 60299
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.94	mg/Kg	1	2.00	97	65.6 - 130.6
4-Bromofluorobenzene (4-BFB)		1.84	mg/Kg	1	2.00	92	51.9 - 128.1

Method Blank (1) QC Batch: 60300

QC Batch: 60300
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	71.9 - 115
4-Bromofluorobenzene (4-BFB)		1.43	mg/Kg	1	2.00	72	45.7 - 118.9

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Method Blank (1) QC Batch: 60312

QC Batch: 60312
Prep Batch: 51439

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 60313

QC Batch: 60313
Prep Batch: 51440

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 60314

QC Batch: 60314
Prep Batch: 51441

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 60315

QC Batch: 60315
Prep Batch: 51442

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

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

Method Blank (1) QC Batch: 60339

QC Batch: 60339
Prep Batch: 51482

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-11

Analyzed By: ME
Prepared By: ME

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	71.9 - 115
4-Bromofluorobenzene (4-BFB)		1.63	mg/Kg	1	2.00	82	45.7 - 118.9

Laboratory Control Spike (LCS-1)

QC Batch: 60297
Prep Batch: 51453

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: AG
Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	271	mg/Kg	1	250	<5.86	108	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	265	mg/Kg	1	250	<5.86	106	57.4 - 133.4	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	115	109	mg/Kg	1	100	115	109	48.5 - 146.7

Laboratory Control Spike (LCS-1)

QC Batch: 60299
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.04	mg/Kg	1	2.00	<0.00100	102	72.7 - 129.8
Toluene	2.09	mg/Kg	1	2.00	<0.00100	104	71.6 - 129.6
Ethylbenzene	2.04	mg/Kg	1	2.00	<0.00110	102	70.8 - 129.7
Xylene	6.29	mg/Kg	1	6.00	<0.00360	105	70.9 - 129.4

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
Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.16	mg/Kg	1	2.00	<0.00100	108	72.7 - 129.8	6	20
Toluene	2.25	mg/Kg	1	2.00	<0.00100	112	71.6 - 129.6	7	20
Ethylbenzene	2.31	mg/Kg	1	2.00	<0.00110	116	70.8 - 129.7	12	20
Xylene	7.13	mg/Kg	1	6.00	<0.00360	119	70.9 - 129.4	12	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)	1.92	1.96	mg/Kg	1	2.00	96	98	65.9 - 132
4-Bromofluorobenzene (4-BFB)	1.99	2.16	mg/Kg	1	2.00	100	108	55.2 - 128.9

Laboratory Control Spike (LCS-1)

QC Batch: 60300
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	13.1	mg/Kg	1	20.0	<0.482	66	60.5 - 100.1

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.5	mg/Kg	1	20.0	<0.482	78	60.5 - 100.1	17	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.03	2.08	mg/Kg	1	2.00	102	104	78.8 - 104.7
4-Bromofluorobenzene (4-BFB)	1.58	1.70	mg/Kg	1	2.00	79	85	66.1 - 107.3

Laboratory Control Spike (LCS-1)

QC Batch: 60312
Prep Batch: 51439

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

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Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.4	mg/Kg	1	100	<2.18	99	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 60313
Prep Batch: 51440

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

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

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

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

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

Laboratory Control Spike (LCS-1)

QC Batch: 60314
Prep Batch: 51441

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

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

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

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

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

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Laboratory Control Spike (LCS-1)

QC Batch: 60315
Prep Batch: 51442

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.2	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	98.4	mg/Kg	1	100	<2.18	98	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 60339
Prep Batch: 51482

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-11

Analyzed By: ME
Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.5	mg/Kg	1	20.0	<0.482	78	60.5 - 100.1

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	16.5	mg/Kg	1	20.0	<0.482	82	60.5 - 100.1	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.08	2.06	mg/Kg	1	2.00	104	103	78.8 - 104.7
4-Bromofluorobenzene (4-BFB)	1.69	1.75	mg/Kg	1	2.00	84	88	66.1 - 107.3

Matrix Spike (MS-1) Spiked Sample: 198007

QC Batch: 60297
Prep Batch: 51453

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: AG
Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	201	mg/Kg	1	250	<5.86	80	35.2 - 167.1

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

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	210	mg/Kg	1	250	<5.86	84	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-Triacontane	86.9	89.1	mg/Kg	1	100	87	89	34.5 - 178.4

Matrix Spike (MS-1) Spiked Sample: 197394

QC Batch: 60299
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	12.1	mg/Kg	5	10.0	<0.00500	121	58.6 - 165.2
Toluene	21.8	mg/Kg	5	10.0	14.0265	78	64.2 - 153.8
Ethylbenzene	20.5	mg/Kg	5	10.0	12.0165	85	61.6 - 159.4
Xylene	72.4	mg/Kg	5	30.0	47.4302	83	64.4 - 155.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	12.6	mg/Kg	5	10.0	<0.00500	126	58.6 - 165.2	4	20
Toluene	23.6	mg/Kg	5	10.0	14.0265	96	64.2 - 153.8	8	20
Ethylbenzene	22.6	mg/Kg	5	10.0	12.0165	106	61.6 - 159.4	10	20
Xylene	78.7	mg/Kg	5	30.0	47.4302	104	64.4 - 155.3	8	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	9.89	9.89	mg/Kg	5	10	99	99	76 - 127.9
4-Bromofluorobenzene (4-BFB)	^{1 2} 13.1	14.0	mg/Kg	5	10	131	140	72 - 127.8

Matrix Spike (MS-1) Spiked Sample: 198314

QC Batch: 60300
Prep Batch: 51454

Date Analyzed: 2009-06-10
QC Preparation: 2009-06-10

Analyzed By: ME
Prepared By: ME

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¹ High surrogate recovery due to peak interference.

² High surrogate recovery due to peak interference.

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GR0	20.4	mg/Kg	1	20.0	0.9449	97	12.8 - 175.2

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GR0	³ 31.2	mg/Kg	1	20.0	0.9449	151	12.8 - 175.2	42	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.00	2.22	mg/Kg	1	2	100	111	60.8 - 132.1
4-Bromofluorobenzene (4-BFB)	1.43	1.50	mg/Kg	1	2	72	75	31.3 - 161.7

Matrix Spike (MS-1) Spiked Sample: 198292

QC Batch: 60312
Prep Batch: 51439

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	21500	mg/Kg	50	5000	15800	114	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	21700	mg/Kg	50	5000	15800	118	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: 198302

QC Batch: 60313
Prep Batch: 51440

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5470	mg/Kg	50	5000	404	101	85 - 115

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

³MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5520	mg/Kg	50	5000	404	102	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: 198312

QC Batch: 60314
Prep Batch: 51441

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	15700	mg/Kg	50	5000	10500	104	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	15800	mg/Kg	50	5000	10500	106	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: 198322

QC Batch: 60315
Prep Batch: 51442

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-10

Analyzed By: AR
Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	16400	mg/Kg	50	5000	11600	96	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	50	5000	11600	98	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 198316

QC Batch: 60339
Prep Batch: 51482

Date Analyzed: 2009-06-11
QC Preparation: 2009-06-11

Analyzed By: ME
Prepared By: ME

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Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	32.2	mg/Kg	1	20.0	7.6633	123	12.8 - 175.2

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	⁴ 23.2	mg/Kg	1	20.0	7.6633	78	12.8 - 175.2	32	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.20	2.03	mg/Kg	1	2	110	102	60.8 - 132.1
4-Bromofluorobenzene (4-BFB)	1.65	1.45	mg/Kg	1	2	82	72	31.3 - 161.7

Standard (CCV-1)

QC Batch: 60297			Date Analyzed: 2009-06-10			Analyzed By: AG		
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
DRO		mg/Kg	250	256	102	80 - 120	2009-06-10	

Standard (CCV-2)

QC Batch: 60297			Date Analyzed: 2009-06-10			Analyzed By: AG		
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
DRO		mg/Kg	250	262	105	80 - 120	2009-06-10	

Standard (CCV-3)

QC Batch: 60297			Date Analyzed: 2009-06-10			Analyzed By: AG		
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⁴MS/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	266	106	80 - 120	2009-06-10

Standard (CCV-1)

QC Batch: 60299

Date Analyzed: 2009-06-10

Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.102	102	80 - 120	2009-06-10
Toluene		mg/Kg	0.100	0.104	104	80 - 120	2009-06-10
Ethylbenzene		mg/Kg	0.100	0.110	110	80 - 120	2009-06-10
Xylene		mg/Kg	0.300	0.338	113	80 - 120	2009-06-10

Standard (CCV-2)

QC Batch: 60299

Date Analyzed: 2009-06-10

Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.100	100	80 - 120	2009-06-10
Toluene		mg/Kg	0.100	0.106	106	80 - 120	2009-06-10
Ethylbenzene		mg/Kg	0.100	0.115	115	80 - 120	2009-06-10
Xylene		mg/Kg	0.300	0.356	119	80 - 120	2009-06-10

Standard (CCV-1)

QC Batch: 60300

Date Analyzed: 2009-06-10

Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.940	94	80 - 120	2009-06-10

Standard (CCV-2)

QC Batch: 60300

Date Analyzed: 2009-06-10

Analyzed By: ME

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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	0.930	93	80 - 120	2009-06-10

Standard (CCV-3)

QC Batch: 60300

Date Analyzed: 2009-06-10

Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.932	93	80 - 120	2009-06-10

Standard (ICV-1)

QC Batch: 60312

Date Analyzed: 2009-06-11

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.7	99	85 - 115	2009-06-11

Standard (CCV-1)

QC Batch: 60312

Date Analyzed: 2009-06-11

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-06-11

Standard (ICV-1)

QC Batch: 60313

Date Analyzed: 2009-06-11

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.9	99	85 - 115	2009-06-11

Standard (CCV-1)

QC Batch: 60313

Date Analyzed: 2009-06-11

Analyzed By: AR

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Lea Co., NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-06-11

Standard (ICV-1)

QC Batch: 60314

Date Analyzed: 2009-06-11

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.4	98	85 - 115	2009-06-11

Standard (CCV-1)

QC Batch: 60314

Date Analyzed: 2009-06-11

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2009-06-11

Standard (ICV-1)

QC Batch: 60315

Date Analyzed: 2009-06-11

Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	103	103	85 - 115	2009-06-11

Standard (CCV-1)

QC Batch: 60315

Date Analyzed: 2009-06-11

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	96.7	97	85 - 115	2009-06-11

Standard (CCV-1)

QC Batch: 60339

Date Analyzed: 2009-06-11

Analyzed By: ME

Report Date: June 15, 2009
114-6400214

Work Order: 9060854
COG/Brown Fed. TB

Page Number: 33 of 33
Lea Co., NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.04	104	80 - 120	2009-06-11

Standard (CCV-2)

QC Batch: 60339

Date Analyzed: 2009-06-11

Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.02	102	80 - 120	2009-06-11

Order # 9060854

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 4



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.: 114-6400214		PROJECT NAME: COG / Brown Fed TB	
LAB. I.D. NUMBER: 284		SAMPLE IDENTIFICATION: Lea Co., NM	
DATE: 2009	TIME: 6/8	MATRIX: S	GRAB: X
LAB. I.D. NUMBER: 285		AH-1 0-1' 1' BEB	
LAB. I.D. NUMBER: 286		AH-1 1-1.5' 1' BEB	
LAB. I.D. NUMBER: 287		AH-1 2-2.5' 1' BEB	
LAB. I.D. NUMBER: 288		AH-1 3-3.5' 1' BEB	
LAB. I.D. NUMBER: 289		AH-1 4-4.5' 1' BEB	
LAB. I.D. NUMBER: 290		AH-1 5-5.5' 1' BEB	
LAB. I.D. NUMBER: 291		AH-2 0-1' 1' BEB	
LAB. I.D. NUMBER: 292		AH-2 1-1.5' 1' BEB	
LAB. I.D. NUMBER: 293		AH-2 2-2.5' 1' BEB	
LAB. I.D. NUMBER: 294		AH-2 3-3.5' 1' BEB	
RELINQUISHED BY: (Signature) [Signature]		RECEIVED BY: (Signature) [Signature]	
RELINQUISHED BY: (Signature) [Signature]		RECEIVED BY: (Signature) [Signature]	
RELINQUISHED BY: (Signature) [Signature]		RECEIVED BY: (Signature) [Signature]	
RECEIVING LABORATORY: TRAES		RECEIVED BY: (Signature) [Signature]	
ADDRESS: Midland		DATE: 6/8/09	
CITY: Midland		TIME: 16:30	
CONTACT: IX		REMARKS: If total TPH exceeds 1,000 mg/kg, run deeper horizons	
PHONE: 682-4559		REMARKS: TPH X 13761 on 2 highest TPH	

ANALYSIS REQUEST (Circle or Specify Method No.)

☒	TPH 8015 MOD. TX1006 (Ext. to C36)
☒	BTEX 8021B
☐	PAH 8270
☐	RCPA 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 8080/608
☐	Post. 608/608
☒	Chloride
☐	Gamma Spec.
☐	Alpha Beta (Air)
☐	PLM (Asbestos)
☐	Major Anions/Cations, pH, TDS

SAMPLED BY: (Print & Initial) JT/KD	Date: 6/8/09
SAMPLE SHIPPED BY: (Circle) HAND DELIVERED	AIRBILL #:
FEDEX	OTHER:
BUS	
UPS	
TETRA TECH CONTACT PERSON: Ike Tavaraz	
Results by:	
RUSH Charges Authorized:	
Yes	No

Order # 9060854

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.: 114-6400214 PROJECT NAME: COG/Brown Feed TB

LAB I.D. NUMBER: 2009 DATE: 6/8 TIME: 16:30 SAMPLE IDENTIFICATION: Len Co, NM

LAB I.D. NUMBER	DATE	MA	CO	GR	NUM	FILT	HCL	HNO3	ICE	NON	BTEX	TPH	PAH	RCRA	TCLF	TCLF	TCLF	RCI	GC.M.	GC.M.	PCB	Pest.	Chlor	Gamma	Alpha	PLM	Major
198294	6/8	S	X	X	1				X														X				
295																											
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RELINQUISHED BY: (Signature) <u>[Signature]</u> Date: <u>6/8/09</u> Time: <u>16:30</u>	RECEIVED BY: (Signature) _____ Date: _____ Time: _____
RELINQUISHED BY: (Signature) _____ Date: _____ Time: _____	RECEIVED BY: (Signature) _____ Date: _____ Time: _____
RELINQUISHED BY: (Signature) _____ Date: _____ Time: _____	RECEIVED BY: (Signature) _____ Date: _____ Time: _____
RECEIVING LABORATORY: <u>TRACE</u>	RECEIVED BY: (Signature) <u>[Signature]</u> Date: <u>6/8/09</u> Time: <u>16:30</u>
ADDRESS: <u>Midland</u> STATE: <u>TX</u> ZIP: _____	
CITY: _____ PHONE: _____	
SAMPLE CONDITION WHEN RECEIVED: <u>22.6°C</u>	REMARKS: <u>If total TPH exceeds 1000 mg/kg, run deeper horizons</u>

ANALYSIS REQUEST (Circle or Specify Method No.)	PAGE: <u>2</u> OF: <u>4</u>
SAMPLER BY: (Print & Initial) <u>ST/KD</u> Date: <u>6/8/09</u> Time: _____	
SAMPLE SHIPPED BY: (Circle) <u>FEDX</u> AIRBILL #: _____	
GRAND DELIVERED <u>UPS</u> OTHER: _____	
TETRA TECH CONTACT PERSON: <u>Ike Tavaraz</u>	
Results by: _____	RUSH Charges Authorized: <u>Yes</u> No

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

Run BTEX on 2 highest TPH

Order # 9060854

PAGE: 3 OF: 4



TETRA TECH

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

SITE MANAGER: Ike Tarnatz

Brown Feed TB

100000, NM

CLIENT NAME: COG		PROJECT NAME: COG / Brown Fed TB		SITE MANAGER: Ike Tavares	
PROJECT NO.: 114-6400214		PROJECT NAME: COG / Brown Fed TB		SITE MANAGER: Ike Tavares	
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PROJECT NO.: 114-6400214		PROJECT NAME: COG / Brown Fed TB			

RELINQUISHED BY: (Signature) <i>[Signature]</i>	Date: <i>6/8/09</i>	Time: <i>1630</i>	RECEIVED BY: (Signature)	Date:	Time:
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RECEIVING LABORATORY: <i>TRACE</i>	RECEIVED BY: (Signature) <i>[Signature]</i>				
ADDRESS:					
CITY: <i>Madison</i>	STATE: <i>TX</i>	ZIP:	DATE: <i>6/8/09</i>	TIME: <i>16:30</i>	
CONTACT:	PHONE:				
SAMPLE CONDITION WHEN RECEIVED:					

DATE & TIME WHEN RECEIVED:	22.10.90	REMARKS:	If total TPH exceeds 1,000 mg/kg, run deep
Please fill out all sections			

REMARKS
If total TPH exceeds 1000 mg/ty, run deeper horizons

1 - House (m) Out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Rev. BTEX on 2 highest TPH

BTX 6021B	TPH 8015 MOD. TX1006 (Ext. to C35)	PAH 8270	PCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC,MS Vol. 8240/8260/624	GC,MS Saml. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
SAMPLED BY: (Print & Initial) DATE: 6/18/96 TIME: 5:10 PM																
SAMPLE SHIPPED BY: (Circle) FEDX ☒ HAND DELIVERED ☐ BUS ☐ UPS ☐ TETRA TECH CONTACT PERSON:																
AIRBILL #: OTHER: Results by: RUSH Charges Authorized: Yes ☐ No ☐																
The Tower																

Ike Tavares

RUSH Charges Authorized:		Yes	No
1	Excess weight		
2	Excess length		
3	Excess value		
4	Excess quantity		
5	Excess volume		
6	Excess weight		
7	Excess length		
8	Excess value		
9	Excess quantity		
10	Excess volume		

Order # 9060854

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 4



TETRA TECH

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG SITE MANAGER: Ike Tavaraz

PROJECT NO.: 114-640024 PROJECT NAME: COG/Brown Fed TB

LAB I.D. NUMBER: 2009 DATE: 2009 TIME: 618

MATRIX: S GRAB: X SAMPLE IDENTIFICATION: Lea Co, NM

NUMBER OF CONTAINERS: 1 FILTERED (Y/N): HCL: X ICE: X NONE: X

BTX 8021B TPH 8016 MOB TX1005 (Ext. to C35) PAH 8270

RCRA Metals Ag As Ba Cd Cr Pb Hg Se TCLP Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Volatiles TCLP Semi Volatiles RCI GC/MS Vol. 8240/8260/824 GC/MS Semi. Vol. 8270/826 PCB's 8080/808 Pest. 808/808

Chloride Gamma Spec. Alpha Beta (Air) PLM (Asbestos) Major Anions/Cations, PH, TDS

RELINQUISHED BY: (Signature) Date: 6/10/09 Time: 1630

RELINQUISHED BY: (Signature) Date: 6/10/09 Time: 1630

RELINQUISHED BY: (Signature) Date: 6/10/09 Time: 1630

RECEIVING LABORATORY: TRAC CITY: Midland STATE: TX ZIP: PHONE: DATE: 6/10/09 TIME: 1630

REMARKS: If total TPH exceeds 1,000 mg/kg, run deeper horizons.

2260c

Run BTX on 2 highest TPH

Project Manager retains Pink copy - Accounting receives Gold copy.

Project Manager retains Yellow copy - Return Original copy to Tetra Tech

Laboratory retains all copies

Sample Condition When Received:

Results by:

RUSH Charges Authorized: Yes No

AIRBILL #:

OTHER:

TETRA TECH CONTACT PERSON: Ike Tavaraz

Grand Delivered: BUS UPS

Sample Shipped By: (Circle)

Sampled By: (Print & Initial) JT/KD Date: 6/10/09 Time: 1630

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

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	
Address	550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No.	432-686-3087
Facility Name	Brown Federal #1	Facility Type	Battery
Surface Owner	Federal	Mineral Owner	
		Lease No.	30-025-30199

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	31	17S	32E	330	North	330	West	Lea

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release-Produced Water/Oil	Volume of Release-10bbls	Volume Recovered- 0bbls
Source of Release- Flowline	Date and Hour of Occurrence- 6/5/09- 7:00 am	Date and Hour of Discovery 6/5/09-9:00am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Trishia Badbear BLM	
By Whom? Pat Ellis	Date and Hour 6/5/09 @ 9:00am	
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.*
Hole/split in 2' flow line. Flow line was replaced.

Describe Area Affected and Cleanup Action Taken.*

The affected area was dug up and removed and clean soil was replaced. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the OCD/BLM for your approval prior to any significant remediation work.

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

Signature: 		OIL CONSERVATION DIVISION	
Printed Name: Chasity Jackson		Approved by District Supervisor:	
Title: Agent for COG		Approval Date:	Expiration Date:
E-mail Address: cjackson@conchoresources.com		Conditions of Approval:	
Date: 06/19/09	Phone: 432-686-3087	Attached ☐	

* Attach Additional Sheets If Necessary