SITE INFORMATION

2RP-442 Report Type: Closure Report

General Site Information:

Site:	Caddo Federal #6					
Company:	COG Operating LLC					
Section, Township and Range	Unit B	Sec 17	T17S	R30E		
Lease Number:	API-30-015-36673					
County:	Eddy County					
GPS:	32.83905° N			103.99332° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From Loco Hills and Co. Rd. 217, travel north on Co. Rd. 217 for 1.4m. Turn left on lease road and travel 0.4m, arrive at site on left side of lease road.					

Release Data:

Date Released:	9/2/2010
Type Release:	Produced Fluid
Source of Contamination:	Wellhead, Tubing backpressure valve
Fluid Released:	10 bbls
Fluids Recovered:	5 bbls

Official Communication:

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

Ranking Criteria

Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	**0**	**0**

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

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

Total Ranking Score:	**0**

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

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TETRA TECH

February 4, 2011

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

Re: Closure for the COG Operating LLC., Caddo Federal #6 Well Site, Unit B, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico. 2RP-442

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Caddo Federal #6 Well Site located in Unit B, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico. (Site). The spill site coordinates are N 32.83905°, W 103.99332°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on September 02, 2010, and released approximately ten (10) barrels of produced fluid from a clog in the tubing backpressure valve. To alleviate the problem, COG personnel removed the backpressure valve, unclogged it and repacked the stuffing box. Five (5) barrels of standing fluids were recovered. The spill initiated at the pump jack, affecting an area of 100' x 120' (tapering to 60') length area, which ran south across the pad. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 17. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 250' below surface. The average depth to groundwater map is shown in Appendix B.

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

Regulatory

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

Soil Assessment and Analytical Results

On September 15, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected for AH-1 of 863 mg/kg (0-1'), AH-2 of 1,800 mg/kg (0-1'), AH-3 of 2,000 mg/kg (0-1'), AH-4 of 3,760 mg/kg (0-1'). All chloride concentrations significantly declined with depth.

Closure Activities

As per the approved work plan, Tetra Tech personnel supervised the removal approximately 1.0' of impacted material on October 19, 2010. Approximately 440 cubic yards of soil were excavated and transported to CRI Inc. for proper disposal. Once excavated to the appropriate depths, two (2) confirmation samples were collected from the bottom of the excavation, as requested by the BLM. All of the sample locations showed chloride concentrations of <200 mg/kg. The sample locations are shown on Figure 4. The confirmation sample results are shown in Table 2. The excavated area was then backfilled and brought up to surface grade with clean soils.

TETRA TECH

Based on the results, COG requests closure of the site. The C-141 (Final) is included in Appendix A. 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

Ike Tavarez
Project Manager

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

FIGURES

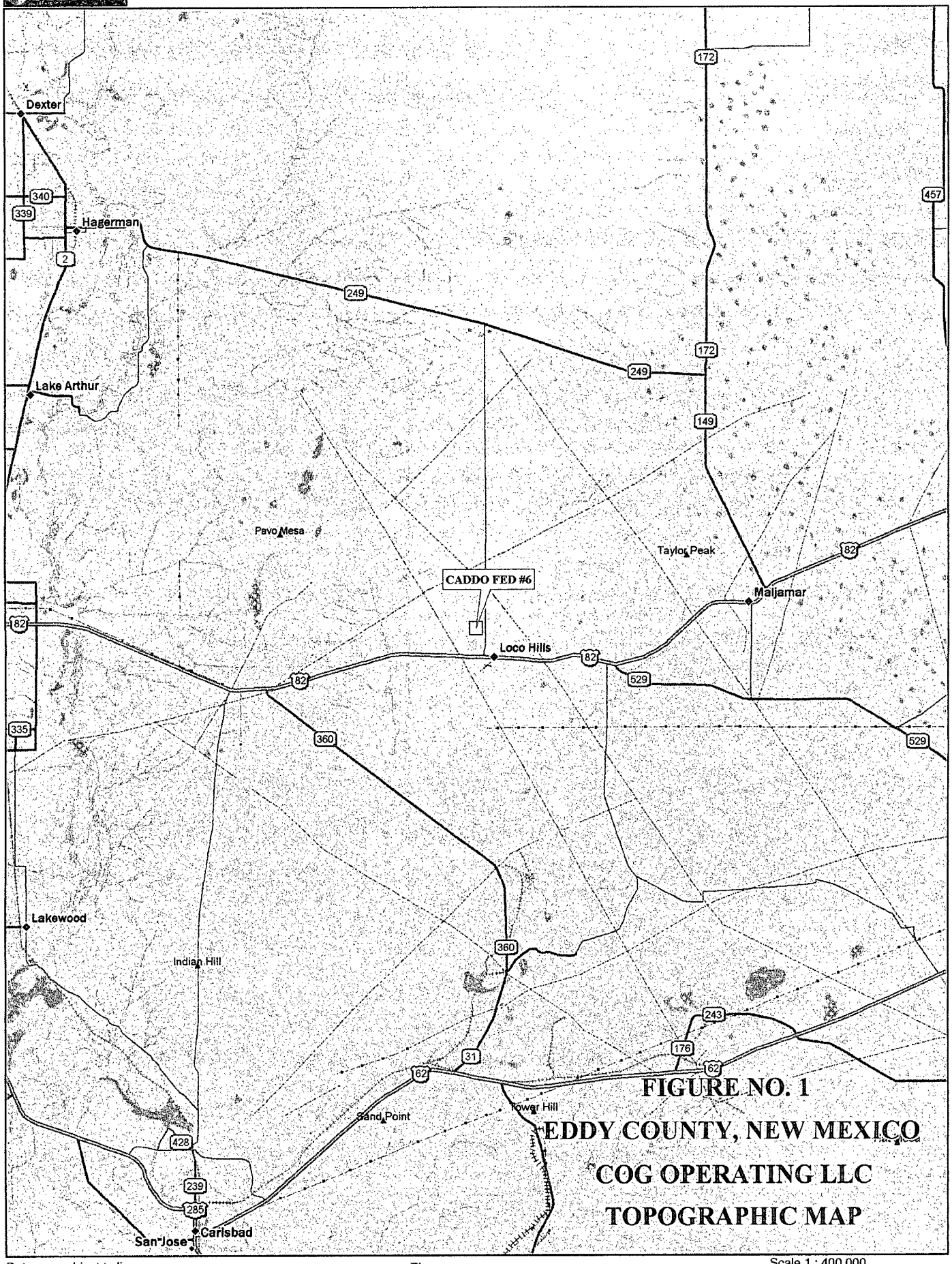


FIGURE NO. 1

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

TN

MN (7.0°E)

Scale 1 : 400,000

0 2 4 6 8 10 mi

0 3 6 9 12 15 km

1" = 6.31 mi

Data Zoom 9-0

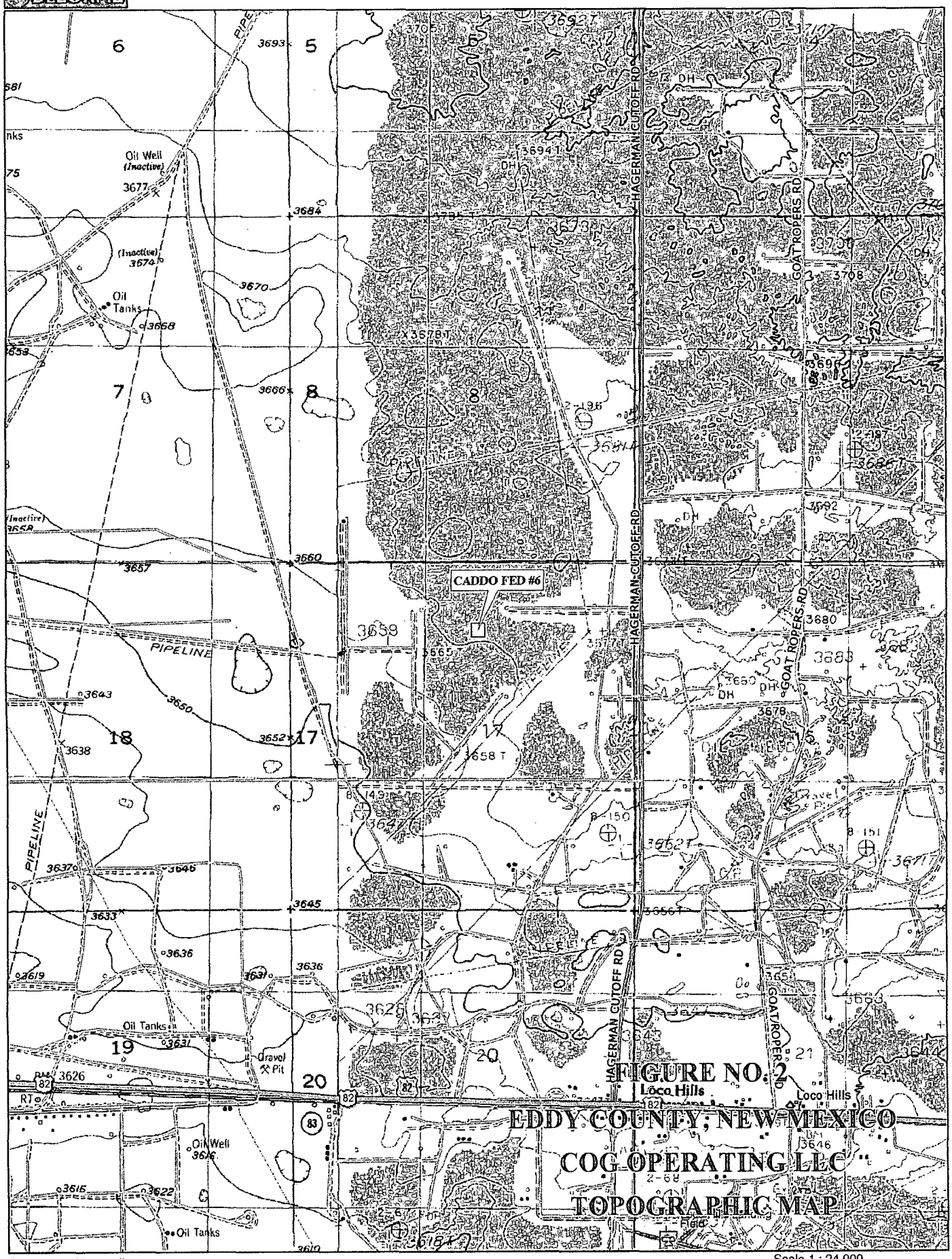


FIGURE NO. 2

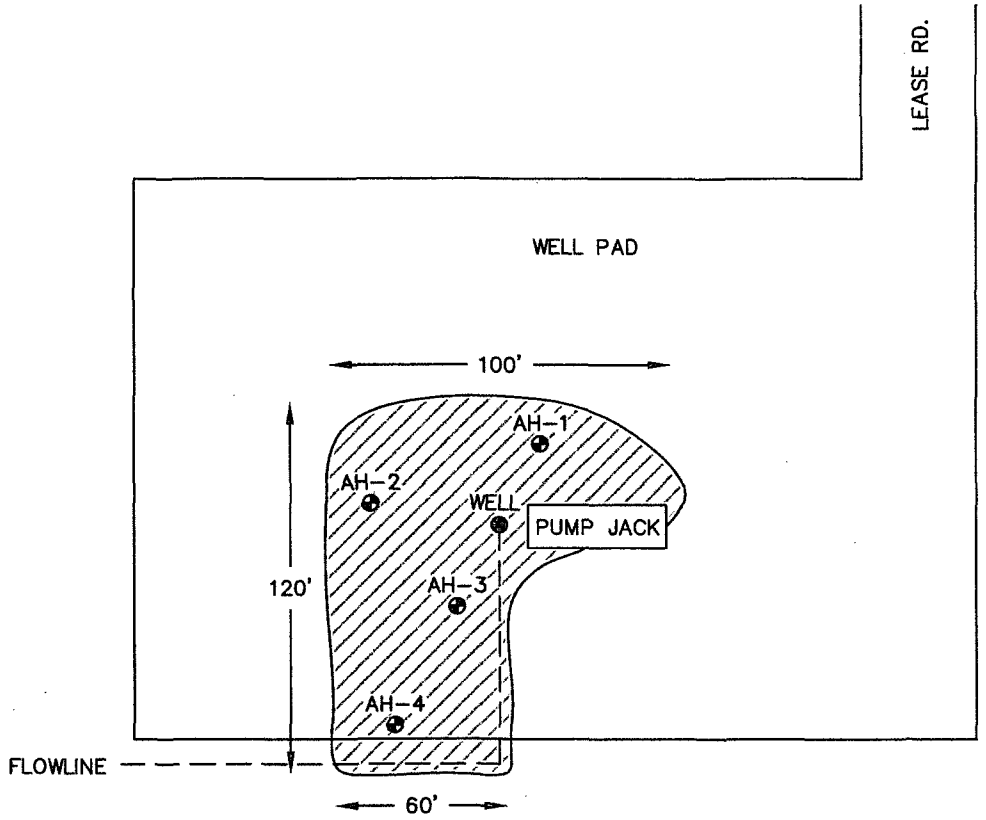
EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

TN
MN (7.9°E)

Scale 1 : 24,000
0 600 1200 1800 2400 3000 ft
0 200 400 600 800 1000 m
1" = 2,000.0 ft Data Zoom 13-0



SPILL AREA
AUGER HOLE SAMPLE LOCATIONS

NOT TO SCALE

FIGURE NO. 3

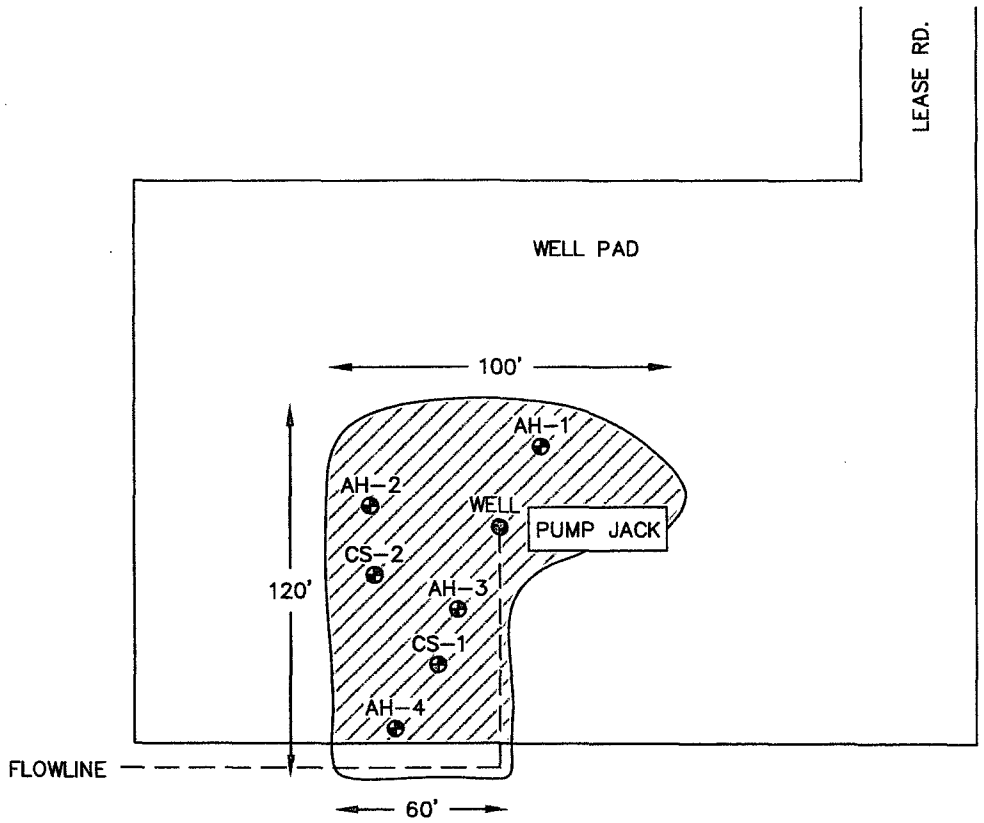
EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

CADDO FED #6

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 9/29/10
DWN. BY: JJ
FILE: H:\COG\640026 CADDO FED #6



SPILL AREA
AUGER HOLE SAMPLE LOCATIONS
CONFIRMATION SAMPLE LOCATIONS

NOT TO SCALE

FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

CADDO FED #6

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 9/29/10
DWN. BY: JJ
FILE: N:\COG\6400286 CADDO FED #6

TABLES

Table 1
COG Operating LLC.
CADDO FEDERAL #6
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	9/15/2010	0-1'			X	<2.00	90.1	90.1	-	-	-	-	863
	"	1-1.5'		X		-	-	-	-	-	-	-	269
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
	"	5-5.5'		X		-	-	-	-	-	-	-	<200
AH-2	9/15/2010	0-1'			X	<100	4,400	4,400	<1.00	<1.00	2.11	4.36	1,800
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	214
AH-3	9/15/2010	0-1'			X	<2.00	270	270	<0.0200	<0.0200	<0.0200	<0.0200	2,000
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
AH-4	9/15/2010	0-1'			X	<2.00	<50.0	<50.0	-	-	-	-	3,760
	"	1-1.5'		X		-	-	-	-	-	-	-	478

BEB Below Excavation Bottom

(--) Not Analyzed

Excavation Depths

Table 2
COG Operating LLC.
CADDO FEDERAL #6
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total	
CS-1	10/19/2010	0-1'	1'	X		-	-	-	<200
CS-2	10/19/2010	0-1'	1'	X		-	-	-	<200

BEB Below Excavation Bottom

(--) Not Analyzed

APPENDIX A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Repor

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Caddo Federal #6	Facility Type	Wellhead

Surface Owner	Mineral Owner	Lease No.
Federal		(API#) 30-015-36673 NMNM2933

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	17	17S	30E	990'	NORTH	2310'	EAST	Eddy

Latitude 32 50.46 **Longitude** 103 59.577

NATURE OF RELEASE

Type of Release Produced fluid	Volume of Release 10bbls	Volume Recovered 5bbls
Source of Release Wellhead	Date and Hour of Occurrence 09/02/2010	Date and Hour of Discovery 09/02/2010 8:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The cause of the problem was due to the tubing backpressure valve being plugged by packing. The tubing backpressure valve was removed and unplugged and the stuffing box was re-packed.

Describe Area Affected and Cleanup Action Taken.*

Initially 10bbls or produced fluid was released from the wellhead and we were able to recover 5bbls with a vacuum truck. The spill dimensions measured 30' x 60' northwest of the unit, 8' x 15' north of the unit, and a 3' x 20' area running off the south end of the location into the pasture. The pad location has been scraped and the contaminated material has been hauled off to the appropriate disposal facility. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM for 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: Josh Russo	Approved by District Supervisor:	
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 09/02/2010 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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1301 W. Grand Avenue, Artesia, NM 88210
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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

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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 Caddo Federal #6	Facility Type **Wellhead**

Surface Owner: Federal	Mineral Owner	Lease No. API 30-015-36673

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	17	17S	30E	990'	NORTH	2310'	EAST	Eddy

Latitude N 32 50.46° **Longitude** W 103 59.577°

NATURE OF RELEASE

Type of Release: Produced Fluids	Volume of Release 10 bbls	Volume Recovered 5 bbls
Source of Release: Wellhead	Date and Hour of Occurrence 9/02/10	Date and Hour of Discovery 9/02/10 8:00a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour 3/15/10 4:59 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

The cause of the release was due to the tubing backpressure valve plugged by packing. The tubing backpressure value was removed and unplugged and the stuffing box was re-packed.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: Ike Tavarez (Agent for COG)	Approved by District Supervisor:
Title: Project Manager	Approval Date: / Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval: / Attached ☐
Date: 2/7/11 Phone: (432) 682-4559	

* Attach Additional Sheets If Necessary

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
COG - Caddo Federal #6
Eddy County, New Mexico

16 South 29 East

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

16 South 30 East

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

16 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 **288**
18	17	16	15	14	13 **113**
19	20	21	22	23	24
30	29	28	27	26	25
31 **290**	32	33	34	35	36

17 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **80**	23	24
30	29 **210** **208'**	28	27	26	25
31	32	33	34	35 153	36

17 South 30 East

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

17 South 31 East

6	5	4	3	2	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 **271**	35	36

18 South 29 East

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

18 South 30 East

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

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 **400**
18	17	16	15	14 **317**	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 **261**	36

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

APPENDIX C

Summary Report

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

Report Date: September 27, 2010

Work Order: 10091631

Project Location: Eddy County, NM
Project Name: COG/Caddo Federal #6
Project Number: 114-6400686

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244831	AH-1 0-1	soil	2010-09-15	00:00	2010-09-16
244832	AH-1 1-1.5	soil	2010-09-15	00:00	2010-09-16
244833	AH-1 2-2.5	soil	2010-09-15	00:00	2010-09-16
244834	AH-1 3-3.5	soil	2010-09-15	00:00	2010-09-16
244835	AH-1 4-4.5	soil	2010-09-15	00:00	2010-09-16
244836	AH-1 5-5.5	soil	2010-09-15	00:00	2010-09-16
244837	AH-2 0-1	soil	2010-09-15	00:00	2010-09-16
244838	AH-2 1-1.5	soil	2010-09-15	00:00	2010-09-16
244839	AH-2 2-2.5	soil	2010-09-15	00:00	2010-09-16
244840	AH-3 0-1	soil	2010-09-15	00:00	2010-09-16
244841	AH-3 1-1.5	soil	2010-09-15	00:00	2010-09-16
244842	AH-3 2-2.5	soil	2010-09-15	00:00	2010-09-16
244843	AH-3 3-3.5	soil	2010-09-15	00:00	2010-09-16
244844	AH-3 4-4.5	soil	2010-09-15	00:00	2010-09-16
244845	AH-4 0-1	soil	2010-09-15	00:00	2010-09-16
244846	AH-4 1-1.5	soil	2010-09-15	00:00	2010-09-16

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
244831 - AH-1 0-1					**90.1**	<2.00
244837 - AH-2 0-1	<1.00	<1.00	**2.11**	**4.36**	**4400**	<100
244840 - AH-3 0-1	<0.0200	<0.0200	<0.0200	<0.0200	**270**	<2.00
244845 - AH-4 0-1					<50.0	<2.00

Sample: 244831 - AH-1 0-1

continued ...

sample 244831 continued ...

Param	Flag	Result	Units	RL

Param	Flag	Result	Units	RL
Chloride		**863**	mg/Kg	4.00

Sample: 244832 - AH-1 1-1.5

Param	Flag	Result	Units	RL
Chloride		**269**	mg/Kg	4.00

Sample: 244833 - AH-1 2-2.5

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

Sample: 244834 - AH-1 3-3.5

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

Sample: 244835 - AH-1 4-4.5

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

Sample: 244836 - AH-1 5-5.5

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

Sample: 244837 - AH-2 0-1

Param	Flag	Result	Units	RL
Chloride		**1800**	mg/Kg	4.00

Sample: 244838 - AH-2 1-1.5

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

Sample: 244839 - AH-2 2-2.5

Param	Flag	Result	Units	RL
Chloride		**214**	mg/Kg	4.00

Sample: 244840 - AH-3 0-1

Param	Flag	Result	Units	RL
Chloride		**2000**	mg/Kg	4.00

Sample: 244841 - AH-3 1-1.5

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

Sample: 244842 - AH-3 2-2.5

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

Sample: 244843 - AH-3 3-3.5

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

Sample: 244844 - AH-3 4-4.5

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

Sample: 244845 - AH-4 0-1

Param	Flag	Result	Units	RL
Chloride		**3760**	mg/Kg	4.00

Sample: 244846 - AH-4 1-1.5

Param	Flag	Result	Units	RL
Chloride		**478**	mg/Kg	4.00

TRACEANALYSIS, INC.

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

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

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

Analytical and Quality Control Report

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Report Date: September 27, 2010

Work Order: 10091631

Project Location: Eddy County, NM
Project Name: COG/Caddo Federal #6
Project Number: 114-6400686

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
244831	AH-1 0-1	soil	2010-09-15	00:00	2010-09-16
244832	AH-1 1-1.5	soil	2010-09-15	00:00	2010-09-16
244833	AH-1 2-2.5	soil	2010-09-15	00:00	2010-09-16
244834	AH-1 3-3.5	soil	2010-09-15	00:00	2010-09-16
244835	AH-1 4-4.5	soil	2010-09-15	00:00	2010-09-16
244836	AH-1 5-5.5	soil	2010-09-15	00:00	2010-09-16
244837	AH-2 0-1	soil	2010-09-15	00:00	2010-09-16
244838	AH-2 1-1.5	soil	2010-09-15	00:00	2010-09-16
244839	AH-2 2-2.5	soil	2010-09-15	00:00	2010-09-16
244840	AH-3 0-1	soil	2010-09-15	00:00	2010-09-16

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244841	AH-3 1-1.5	soil	2010-09-15	00:00	2010-09-16
244842	AH-3 2-2.5	soil	2010-09-15	00:00	2010-09-16
244843	AH-3 3-3.5	soil	2010-09-15	00:00	2010-09-16
244844	AH-3 4-4.5	soil	2010-09-15	00:00	2010-09-16
244845	AH-4 0-1	soil	2010-09-15	00:00	2010-09-16
244846	AH-4 1-1.5	soil	2010-09-15	00:00	2010-09-16

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

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

Standard Flags

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

Case Narrative

Samples for project COG/Caddo Federal #6 were received by TraceAnalysis, Inc. on 2010-09-16 and assigned to work order 10091631. Samples for work order 10091631 were received intact at a temperature of 3.8 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	63249	2010-09-21 at 16:00	73738	2010-09-21 at 22:53
Chloride (Titration)	SM 4500-Cl B	63252	2010-09-22 at 08:46	73783	2010-09-23 at 09:53
Chloride (Titration)	SM 4500-Cl B	63253	2010-09-22 at 09:46	73784	2010-09-23 at 09:56
Chloride (Titration)	SM 4500-Cl B	63254	2010-09-22 at 09:47	73785	2010-09-23 at 09:58
TPH DRO - NEW	S 8015 D	63137	2010-09-16 at 15:21	73586	2010-09-16 at 15:21
TPH GRO	S 8015 D	63249	2010-09-21 at 16:00	73737	2010-09-21 at 23:20

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 10091631 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 244831 - AH-1 0-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73783	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63252	Sample Preparation:	2010-09-22	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**863**		mg/Kg	50	4.00

Sample: 244831 - AH-1 0-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	73586	Date Analyzed:	2010-09-16	Analyzed By:	kg
Prep Batch:	63137	Sample Preparation:	2010-09-16	Prepared By:	kg

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		**90.1**		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		104	mg/Kg	1	100	104	70 - 130

Sample: 244831 - AH-1 0-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	73737	Date Analyzed:	2010-09-21	Analyzed By:	AG
Prep Batch:	63249	Sample Preparation:	2010-09-21	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.96	mg/Kg	1	2.00	98	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.71	mg/Kg	1	2.00	86	42 - 159

Sample: 244832 - AH-1 1-1.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73783	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63252	Sample Preparation:	2010-09-22	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**269**	mg/Kg	50	4.00

Sample: 244833 - AH-1 2-2.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73783	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63252	Sample Preparation:	2010-09-22	Prepared By:	AR

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

Sample: 244834 - AH-1 3-3.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73783	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63252	Sample Preparation:	2010-09-22	Prepared By:	AR

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

Sample: 244835 - AH-1 4-4.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	Sample Preparation:	2010-09-22	Prepared By:	AR

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

Sample: 244836 - AH-1 5-5.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	Sample Preparation:	2010-09-22	Prepared By:	AR

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

Sample: 244837 - AH-2 0-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	73738	Date Analyzed:	2010-09-21	Analyzed By:	AG
Prep Batch:	63249	Sample Preparation:	2010-09-21	Prepared By:	AG

Parameter	Flag	Result	RL Units	Dilution	RL
Benzene		<1.00	mg/Kg	50	0.0200
Toluene		<1.00	mg/Kg	50	0.0200
Ethylbenzene		**2.11**	mg/Kg	50	0.0200
Xylene		**4.36**	mg/Kg	50	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		5.15	mg/Kg	50	5.00	103	52.8 - 137
4-Bromofluorobenzene (4-BFB)	[1]	8.10	mg/Kg	50	5.00	162	38.4 - 157

Sample: 244837 - AH-2 0-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	Sample Preparation:	2010-09-22	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1800**	mg/Kg	100	4.00

[1] High surrogate recovery due to peak interference.

Sample: 244837 - AH-2 0-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	73586	Date Analyzed:	2010-09-16	Analyzed By:	kg
Prep Batch:	63137	Sample Preparation:	2010-09-16	Prepared By:	kg

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		**4400**		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	[2]	228	mg/Kg	1	100	228	70 - 130

Sample: 244837 - AH-2 0-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	73737	Date Analyzed:	2010-09-21	Analyzed By:	AG
Prep Batch:	63249	Sample Preparation:	2010-09-21	Prepared By:	AG

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<100		mg/Kg	50	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		4.60	mg/Kg	50	5.00	92	48.5 - 152
4-Bromofluorobenzene (4-BFB)		6.39	mg/Kg	50	5.00	128	42 - 159

Sample: 244838 - AH-2 1-1.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	Sample Preparation:	2010-09-22	Prepared By:	AR

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

[2]High surrogate recovery due to peak interference.

Sample: 244839 - AH-2 2-2.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	Sample Preparation:	2010-09-22	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**214**	mg/Kg	50	4.00

Sample: 244840 - AH-3 0-1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	73738	Date Analyzed:	2010-09-21	Analyzed By:	AG
Prep Batch:	63249	Sample Preparation:	2010-09-21	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0200	mg/Kg	1	0.0200
Toluene		<0.0200	mg/Kg	1	0.0200
Ethylbenzene		<0.0200	mg/Kg	1	0.0200
Xylene		<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.35	mg/Kg	1	2.00	118	52.8 - 137
4-Bromofluorobenzene (4-BFB)		2.24	mg/Kg	1	2.00	112	38.4 - 157

Sample: 244840 - AH-3 0-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	Sample Preparation:	2010-09-22	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2000**	mg/Kg	100	4.00

Sample: 244840 - AH-3 0-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	73586	Date Analyzed:	2010-09-16	Analyzed By:	kg
Prep Batch:	63137	Sample Preparation:	2010-09-16	Prepared By:	kg

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		**270**		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		117	mg/Kg	1	100	117	70 - 130

Sample: 244840 - AH-3 0-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	73737	Date Analyzed:	2010-09-21	Analyzed By:	AG
Prep Batch:	63249	Sample Preparation:	2010-09-21	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.07	mg/Kg	1	2.00	104	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.48	mg/Kg	1	2.00	124	42 - 159

Sample: 244841 - AH-3 1-1.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	Sample Preparation:	2010-09-22	Prepared By:	AR

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

Sample: 244842 - AH-3 2-2.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	Sample Preparation:	2010-09-22	Prepared By:	AR

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

Sample: 244843 - AH-3 3-3.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	Sample Preparation:	2010-09-22	Prepared By:	AR

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

Sample: 244844 - AH-3 4-4.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	Sample Preparation:	2010-09-22	Prepared By:	AR

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

Sample: 244845 - AH-4 0-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73785	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63254	Sample Preparation:	2010-09-22	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**3760**	mg/Kg	100	4.00

Sample: 244845 - AH-4 0-1

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	73586	Date Analyzed:	2010-09-16	Analyzed By:	kg
Prep Batch:	63137	Sample Preparation:	2010-09-16	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		102	mg/Kg	1	100	102	70 - 130

Sample: 244845 - AH-4 0-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	73737	Date Analyzed:	2010-09-21	Analyzed By:	AG
Prep Batch:	63249	Sample Preparation:	2010-09-21	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.02	mg/Kg	1	2.00	101	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	42 - 159

Sample: 244846 - AH-4 1-1.5

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73785	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63254	Sample Preparation:	2010-09-22	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		478		mg/Kg	50	4.00

Method Blank (1) QC Batch: 73586

QC Batch:	73586	Date Analyzed:	2010-09-16	Analyzed By:	kg
Prep Batch:	63137	QC Preparation:	2010-09-16	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		95.5	mg/Kg	1	100	96	70 - 130

Method Blank (1) QC Batch: 73737

QC Batch:	73737	Date Analyzed:	2010-09-21	Analyzed By:	AG
Prep Batch:	63249	QC Preparation:	2010-09-21	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.80	mg/Kg	1	2.00	90	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.07	mg/Kg	1	2.00	54	52.4 - 130

Method Blank (1) QC Batch: 73738

QC Batch:	73738	Date Analyzed:	2010-09-21	Analyzed By:	AG
Prep Batch:	63249	QC Preparation:	2010-09-21	Prepared By:	AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0150	mg/Kg	0.02
Toluene		<0.00950	mg/Kg	0.02
Ethylbenzene		<0.0106	mg/Kg	0.02
Xylene		<0.00930	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1.53	mg/Kg	1	2.00	76	55.4 - 132

Method Blank (1) QC Batch: 73783

QC Batch:	73783	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63252	QC Preparation:	2010-09-22	Prepared By:	AR

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

Method Blank (1) QC Batch: 73784

QC Batch:	73784	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63253	QC Preparation:	2010-09-22	Prepared By:	AR

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

Method Blank (1) QC Batch: 73785

QC Batch:	73785	Date Analyzed:	2010-09-23	Analyzed By:	AR
Prep Batch:	63254	QC Preparation:	2010-09-22	Prepared By:	AR

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

Laboratory Control Spike (LCS-1)

QC Batch:	73586	Date Analyzed:	2010-09-16	Analyzed By:	kg
Prep Batch:	63137	QC Preparation:	2010-09-16	Prepared By:	kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	240	mg/Kg	1	250	<14.5	96	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	256	mg/Kg	1	250	<14.5	102	57.4 - 133.4	6	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	106	110	mg/Kg	1	100	106	110	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 73737 | Date Analyzed: 2010-09-21 | Analyzed By: AG
Prep Batch: 63249 | QC Preparation: 2010-09-21 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	15.4	mg/Kg	1	20.0	<1.65	77	69.9 - 95.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	14.7	mg/Kg	1	20.0	<1.65	74	69.9 - 95.4	5	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.94	1.85	mg/Kg	1	2.00	97	92	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.70	1.64	mg/Kg	1	2.00	85	82	65.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 73738 | Date Analyzed: 2010-09-21 | Analyzed By: AG
Prep Batch: 63249 | QC Preparation: 2010-09-21 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.05	mg/Kg	1	2.00	<0.0150	102	81.9 - 108
Toluene	2.04	mg/Kg	1	2.00	<0.00950	102	81.9 - 107
Ethylbenzene	2.07	mg/Kg	1	2.00	<0.0106	104	78.4 - 107
Xylene	6.21	mg/Kg	1	6.00	<0.00930	104	79.1 - 107

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.07	mg/Kg	1	2.00	<0.0150	104	81.9 - 108	1	20
Toluene	2.06	mg/Kg	1	2.00	<0.00950	103	81.9 - 107	1	20
Ethylbenzene	2.09	mg/Kg	1	2.00	<0.0106	104	78.4 - 107	1	20
Xylene	6.32	mg/Kg	1	6.00	<0.00930	105	79.1 - 107	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.99	2.09	mg/Kg	1	2.00	100	104	70.2 - 114
4-Bromofluorobenzene (4-BFB)	2.30	2.35	mg/Kg	1	2.00	115	118	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 73783 | Date Analyzed: 2010-09-23 | Analyzed By: AR
Prep Batch: 63252 | QC Preparation: 2010-09-22 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.3	mg/Kg	1	100	<2.18	97	85 - 115

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

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

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

Laboratory Control Spike (LCS-1)

QC Batch: 73784 | Date Analyzed: 2010-09-23 | Analyzed By: AR
Prep Batch: 63253 | QC Preparation: 2010-09-22 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.3	mg/Kg	1	100	<2.18	97	85 - 115

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

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

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

Laboratory Control Spike (LCS-1)

QC Batch: 73785 | Date Analyzed: 2010-09-23 | Analyzed By: AR
Prep Batch: 63254 | QC Preparation: 2010-09-22 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	96.8	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	103	mg/Kg	1	100	<2.18	103	85 - 115	6	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: 244915

QC Batch: 73586 | Date Analyzed: 2010-09-16 | Analyzed By: kg
Prep Batch: 63137 | QC Preparation: 2010-09-16 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	202	mg/Kg	1	250	<14.5	81	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	209	mg/Kg	1	250	<14.5	84	35.2 - 167.1	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	95.1	95.2	mg/Kg	1	100	95	95	70 - 130

Matrix Spike (MS-1) Spiked Sample: 244875

QC Batch: 73737 | Date Analyzed: 2010-09-21 | Analyzed By: AG
Prep Batch: 63249 | QC Preparation: 2010-09-21 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.3	mg/Kg	1	20.0	<1.65	82	61.8 - 114

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	16.8	mg/Kg	1	20.0	<1.65	84	61.8 - 114	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.09	1.96	mg/Kg	1	2	104	98	50 - 162

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	2.03	1.87	mg/Kg	1	2	102	94	50 - 162

Matrix Spike (MS-1) Spiked Sample: 244827

QC Batch: 73738 | Date Analyzed: 2010-09-21 | Analyzed By: AG
Prep Batch: 63249 | QC Preparation: 2010-09-21 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.05	mg/Kg	1	2.00	<0.0150	102	80.5 - 112
Toluene	2.09	mg/Kg	1	2.00	<0.00950	104	82.4 - 113
Ethylbenzene	2.22	mg/Kg	1	2.00	<0.0106	111	83.9 - 114
Xylene	6.60	mg/Kg	1	6.00	<0.00930	110	84 - 114

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	[3]	2.28	mg/Kg	1	2.00	<0.0150	114	80.5 - 112	11	20
Toluene	[4]	2.32	mg/Kg	1	2.00	<0.00950	116	82.4 - 113	10	20
Ethylbenzene	[5]	2.49	mg/Kg	1	2.00	<0.0106	124	83.9 - 114	12	20
Xylene	[6]	7.39	mg/Kg	1	6.00	<0.00930	123	84 - 114	11	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)	[7]	2.04	2.44	mg/Kg	1	2	102	122	41.3 - 117
4-Bromofluorobenzene (4-BFB)	[8]	2.43	2.80	mg/Kg	1	2	122	140	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 244834

QC Batch: 73783 | Date Analyzed: 2010-09-23 | Analyzed By: AR
Prep Batch: 63252 | QC Preparation: 2010-09-22 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10100	mg/Kg	100	10000	<218	101	85 - 115

[3]MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[4]MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[5]MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[6]MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[7]High surrogate recovery due to peak interference.
[8]High surrogate recovery due to peak interference.

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	10300	mg/Kg	100	10000	<218	103	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 244844

QC Batch: 73784 | Date Analyzed: 2010-09-23 | Analyzed By: AR
Prep Batch: 63253 | QC Preparation: 2010-09-22 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9650	mg/Kg	100	10000	<218	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	10000	mg/Kg	100	10000	<218	100	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 244854

QC Batch: 73785 | Date Analyzed: 2010-09-23 | Analyzed By: AR
Prep Batch: 63254 | QC Preparation: 2010-09-22 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10500	mg/Kg	100	10000	433	101	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	11100	mg/Kg	100	10000	433	107	85 - 115	6	20

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

Standard (CCV-1)

QC Batch: 73586 | Date Analyzed: 2010-09-16 | Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	214	86	80 - 120	2010-09-16

Standard (CCV-2)

QC Batch: 73586 Date Analyzed: 2010-09-16 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	253	101	80 - 120	2010-09-16

Standard (CCV-3)

QC Batch: 73586 Date Analyzed: 2010-09-16 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	245	98	80 - 120	2010-09-16

Standard (CCV-4)

QC Batch: 73586 Date Analyzed: 2010-09-16 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	240	96	80 - 120	2010-09-16

Standard (CCV-1)

QC Batch: 73737 Date Analyzed: 2010-09-21 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.968	97	80 - 120	2010-09-21

Standard (CCV-2)

QC Batch: 73737 Date Analyzed: 2010-09-21 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.887	89	80 - 120	2010-09-21

Standard (CCV-3)

QC Batch: 73737 Date Analyzed: 2010-09-21 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.882	88	80 - 120	2010-09-21

Standard (CCV-2)

QC Batch: 73738 Date Analyzed: 2010-09-21 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-21
Toluene		mg/Kg	0.100	0.108	108	80 - 120	2010-09-21
Ethylbenzene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-21
Xylene		mg/Kg	0.300	0.327	109	80 - 120	2010-09-21

Standard (CCV-3)

QC Batch: 73738 Date Analyzed: 2010-09-21 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.105	105	80 - 120	2010-09-21
Toluene		mg/Kg	0.100	0.104	104	80 - 120	2010-09-21
Ethylbenzene		mg/Kg	0.100	0.104	104	80 - 120	2010-09-21
Xylene		mg/Kg	0.300	0.314	105	80 - 120	2010-09-21

Standard (ICV-1)

QC Batch: 73783 Date Analyzed: 2010-09-23 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.6	99	85 - 115	2010-09-23

Standard (CCV-1)

QC Batch: 73783 Date Analyzed: 2010-09-23 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-09-23

Standard (ICV-1)

QC Batch: 73784 Date Analyzed: 2010-09-23 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.7	100	85 - 115	2010-09-23

Standard (CCV-1)

QC Batch: 73784 Date Analyzed: 2010-09-23 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-09-23

Standard (ICV-1)

QC Batch: 73785 Date Analyzed: 2010-09-23 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	2010-09-23

Standard (CCV-1)

QC Batch: 73785 Date Analyzed: 2010-09-23 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.7	99	85 - 115	2010-09-23

Work Order #: 10091631

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: CDG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400684

PROJECT NAME: Caddo Federal #4
Eddy Co NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
24831	9/15		S		X	AH-1 0-1	1				X			X											X				
832						AH-1 1-1.5																							
833						AH-1 2-2.5																							
834						AH-1 3-3.5																							
835						AH-1 4-4.5																							
836						AH-1 5-5.5																							
837						AH-2 0-1								X															
838						AH-2 1-1.5																							
839						AH-2 2-2.5																							
840						AH-3 0-1								X															

RELINQUISHED BY: (Signature)	Date: 9-16-10 Time: 1039	RECEIVED BY: (Signature)	Date: 9/16/10 Time: 10:38
SAMPLED BY: (Print & Initial) TF KO	Date: 9-15-10 Time:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS	AIRBILL #: OTHER:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez	Results by:		
RECEIVING LABORATORY: Trace ADDRESS: CITY: Midland STATE: TX ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: 3.8°C intact	REMARKS: If TPH exceeds 5000 mg/kg run deeper sample & All tests Midland		

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

Run BTEX on two highest TPH

WO #: 100911631

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

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

ANALYSIS REQUEST (Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400484

PROJECT NAME: Caddo Federal #6

Eddy Co NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Past. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
244841	9/15		S		X	AH-3 1-1.5	1				X													X				
842	↓		↓		↓	AH-3 2-2.5	↓				↓													↓				
843						AH-3 3-3.5																							
844						AH-3 4-4.5																							
845						AH-4 0-1								X															
846	↓		↓		↓	AH-4 1-1.5	↓				↓													↓				

RELINQUISHED BY: (Signature)	Date: 9-16-10 Time: 1040	RECEIVED BY: (Signature)	Date: 9/16/10 Time: 0140
SAMPLED BY: (Print & Initial) TF LD	Date: 9-15-10 Time:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY (Signature)	Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS	AIRBILL #: OTHER:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez	Results by:		
RECEIVING LABORATORY: Trace ADDRESS: CITY: Midland STATE: Tx ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		
RUSH Charges Authorized: Yes No			
SAMPLE CONDITION WHEN RECEIVED: 38°C intact	REMARKS: If TPH exceeds 5000 mg/kg run deeper samples		

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

Run BTEX on two highest TPH

Summary Report

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

Report Date: October 27, 2010

Work Order: 10102212

Project Location: Eddy County, NM
Project Name: COG/Caddo Federal #6
Project Number: 114-6400686

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
248292	CS-1 0-1' 1' BEB	soil	2010-10-19	00:00	2010-10-22
248293	CS-2 0-1' 1' BEB	soil	2010-10-19	00:00	2010-10-22

Sample: 248292 - CS-1 0-1' 1' BEB

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

Sample: 248293 - CS-2 0-1' 1' BEB

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

TRACEANALYSIS, INC.

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

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

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

Analytical and Quality Control Report

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

Report Date: October 27, 2010

Work Order: 10102212

Project Location: Eddy County, NM
Project Name: COG/Caddo Federal #6
Project Number: 114-6400686

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
248292	CS-1 0-1' 1' BEB	soil	2010-10-19	00:00	2010-10-22
248293	CS-2 0-1' 1' BEB	soil	2010-10-19	00:00	2010-10-22

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.

Michael Abel

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

Standard Flags

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

Case Narrative

Samples for project COG/Caddo Federal #6 were received by TraceAnalysis, Inc. on 2010-10-22 and assigned to work order 10102212. Samples for work order 10102212 were received intact at a temperature of 3.8 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	64082	2010-10-25 at 08:34	74751	2010-10-26 at 16:10

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 10102212 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 248292 - CS-1 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74751	Date Analyzed:	2010-10-26	Analyzed By:	AR
Prep Batch:	64082	Sample Preparation:	2010-10-25	Prepared By:	AR

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

Sample: 248293 - CS-2 0-1' 1' BEB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	74751	Date Analyzed:	2010-10-26	Analyzed By:	AR
Prep Batch:	64082	Sample Preparation:	2010-10-25	Prepared By:	AR

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

Method Blank (1) QC Batch: 74751

QC Batch:	74751	Date Analyzed:	2010-10-26	Analyzed By:	AR
Prep Batch:	64082	QC Preparation:	2010-10-25	Prepared By:	AR

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

Laboratory Control Spike (LCS-1)

QC Batch:	74751	Date Analyzed:	2010-10-26	Analyzed By:	AR
Prep Batch:	64082	QC Preparation:	2010-10-25	Prepared By:	AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.1	mg/Kg	1	100	<2.18	98	85 - 115

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

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

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

Matrix Spike (MS-1) Spiked Sample: 248302

QC Batch: 74751 | Date Analyzed: 2010-10-26 | Analyzed By: AR
Prep Batch: 64082 | QC Preparation: 2010-10-25 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11000	mg/Kg	100	10000	864	101	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	11200	mg/Kg	100	10000	864	103	85 - 115	2	20

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

Standard (ICV-1)

QC Batch: 74751 | Date Analyzed: 2010-10-26 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.9	100	85 - 115	2010-10-26

Standard (CCV-1)

QC Batch: 74751 | Date Analyzed: 2010-10-26 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-10-26

WO# 10102212

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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:	SITE MANAGER:
COG	Ike Tavarez
PROJECT NO.:	**PROJECT NAME:**
114-6400C8L	COG / Caddo Fed #6 Eddy Co, NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
248292	1/19		3		X	CS-1 0-1' 1' BEB	1				X													X				
293	1/19		S		X	CS-2 0-1' 1' BEB	1				X													X				

RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature)	Date: / Time:	SAMPLED BY: (Print & Initial) JT	Date: 10/22/10 Time:
RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature)	Date: / Time:	SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS	AIRBILL #: OTHER:
RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature)	Date: / Time:	TETRA TECH CONTACT PERSON: Ike Tavarez	Results by:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: 10.22.10 TIME: 9:55

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.8°C on ice

REMARKS: All tests - Midland

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