

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Holder CB Federal Paddock TB					
Company:	COG Operating LLC					
Section, Township and Range	Unit E	Sec 17	T17S	R30E		
Lease Number:	API-30-015-20708					
County:	Eddy County					
GPS:	32.83569° N			103.99915° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	In Loco Hills, from the intersection of Haggerman Cutoff (CR 217) and 82, travel north on CR 217 for 0.8 miles, turn left and travel 0.7 miles, turn right and travel 0.2 miles, turn right and travel 200' to site.					

Release Data:

Date Released:	11/13/2011	RECEIVED MAR 30 2012	
Type Release:	Produced Fluid		
Source of Contamination:	Heater Treater		
Fluid Released:	15 bbls		
Fluids Recovered:	11 bbls		

Official Communication:

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

Ranking Criteria

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

Acceptable Soil RRAL (mg/kg)

Benzene	Total BTEX	TPH
10	50	5,000



TETRA TECH

March 9, 2012

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

Re: Closure Report for the COG Operating LLC., Holder CB Federal Paddock Tank Battery, Unit E, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Holder CB Federal Paddock Tank Battery located in Unit E, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83569°, W 103.99915°. 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 November 13, 2011, and released approximately fifteen (15) barrels of produced fluid from the heater treater. To alleviate the problem, COG personnel repaired the heater treater. Eleven (11) barrels of standing fluids were recovered. The majority of the spill was contained within the firewall, with the exception of some overspray that affected the pasture. Micro-blaze has been applied to the overspray vegetation. The area affected measures 10' X 85'. 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 depth to groundwater in this area is approximately 225' below surface. The groundwater data is enclosed in Appendix B.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559

Fax 432.687.3946

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, 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 December 21, 2011, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1, AH-2 and AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the samples exceeded the RRAL for TPH, except for (AH-2). Auger hole (AH-2) showed total BTEX above the RRAL for total BTEX at 0-1' and declined at 1'-1.5'. A shallow chloride impact was encountered at the site. Auger holes (AH-2 and AH-3) showed a shallow chloride impact at 0-1' of 1,570 mg/kg and 4,750 mg/kg, respectively. The deeper samples significantly declined with depth at 1.0' below surface.

The area of AH-1 did show a deeper impact to the soils however the chloride levels declined with depth to 1,360 mg/kg at 2-2.5'. Deeper samples were not collected due to a dense caliche formation.



Remediation and Conclusion

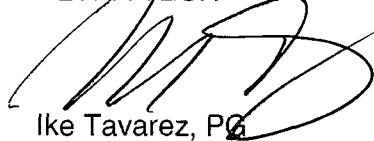
February 2012, Tetra Tech personnel supervised the excavation as outlined in the approved work plan. The excavation depths proposed in work plan were met. The excavated areas and depths are shown on Figure 4. Approximately 40 yards³ of impacted soil were excavated and transported to CRI of Hobbs, NM for proper disposal.

Once the excavated, Tetra Tech collected a total of fifteen (15) confirmation samples (CS-1 through CS-15). The soil samples were collected for TPH, BTEX and chlorides analysis. The sampling results are shown on Table 1.

Referring to Table 1, the majority of the confirmation samples showed chloride concentrations of <200 mg/kg. The overspray area did not show a significant impact to the area. Confirmation sidewall samples (CS-4, CS-5, CS-7, CS-8 and CS-10) showed elevated chloride concentrations ranging from 2,190 mg/kg to 13,800 mg/kg. Based on the results and location, the BLM approved to defer the remaining impact until abandonment. The excavations were backfilled with clean material and brought up to surface grade.

Based on the remediation activities performed at this location, COG request closure for 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



Ike Tavaréz, PG
Senior Project Manager

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

FIGURES

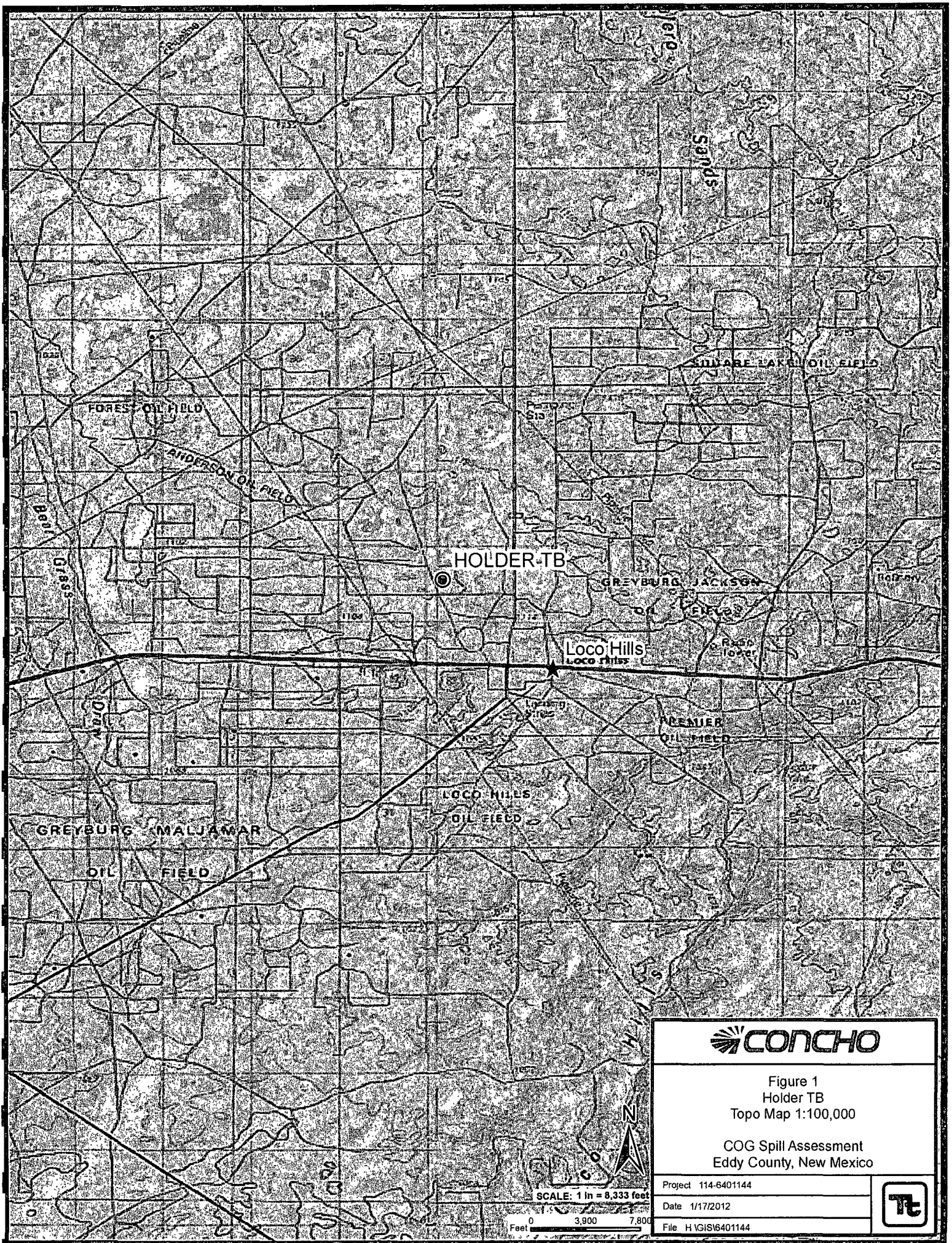


Figure 1
Holder TB
Topo Map 1:100,000

COG Spill Assessment
Eddy County, New Mexico

Project 114-6401144

Date 1/17/2012

File H:\GIS\6401144



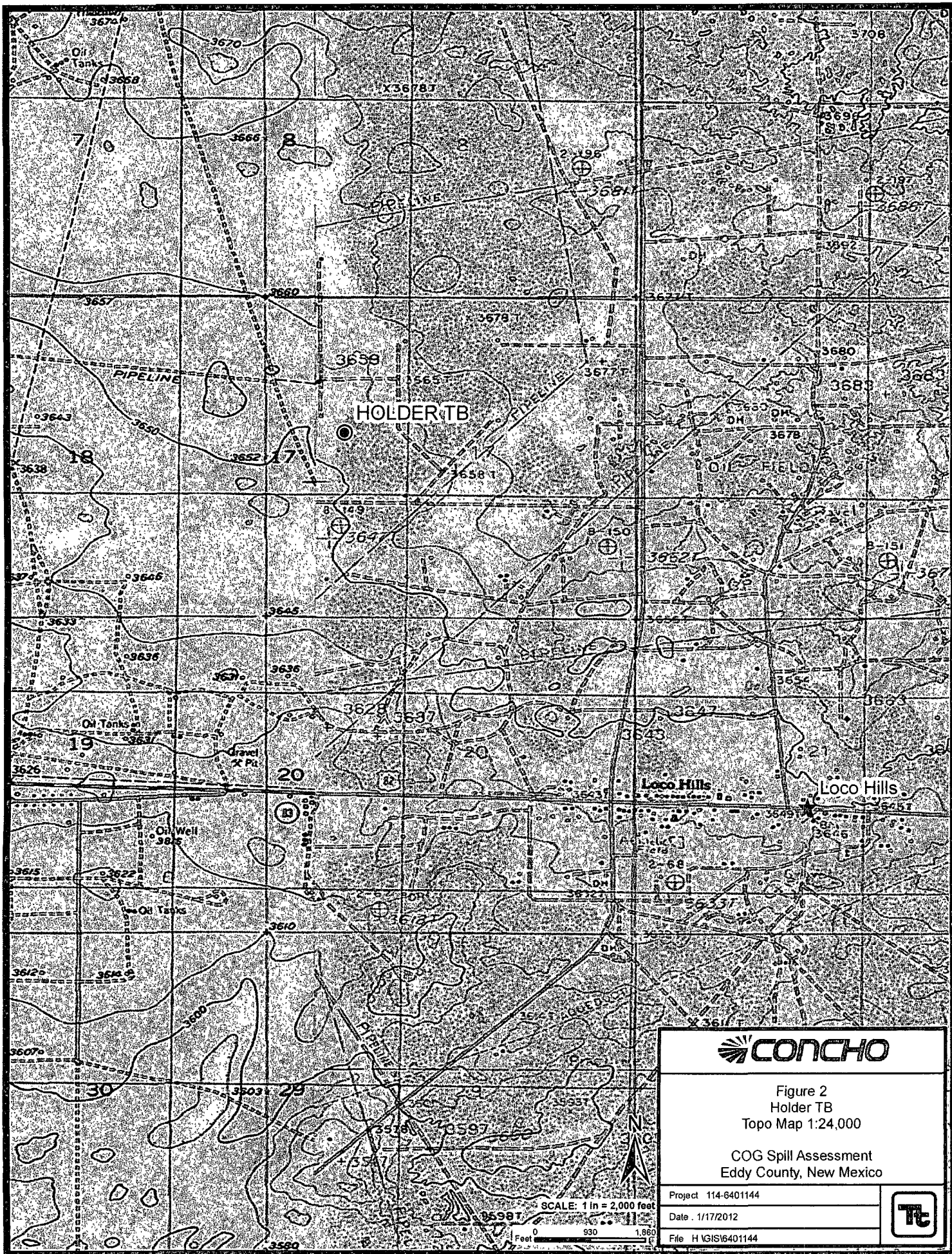


Figure 2
Holder TB
Topo Map 1:24,000

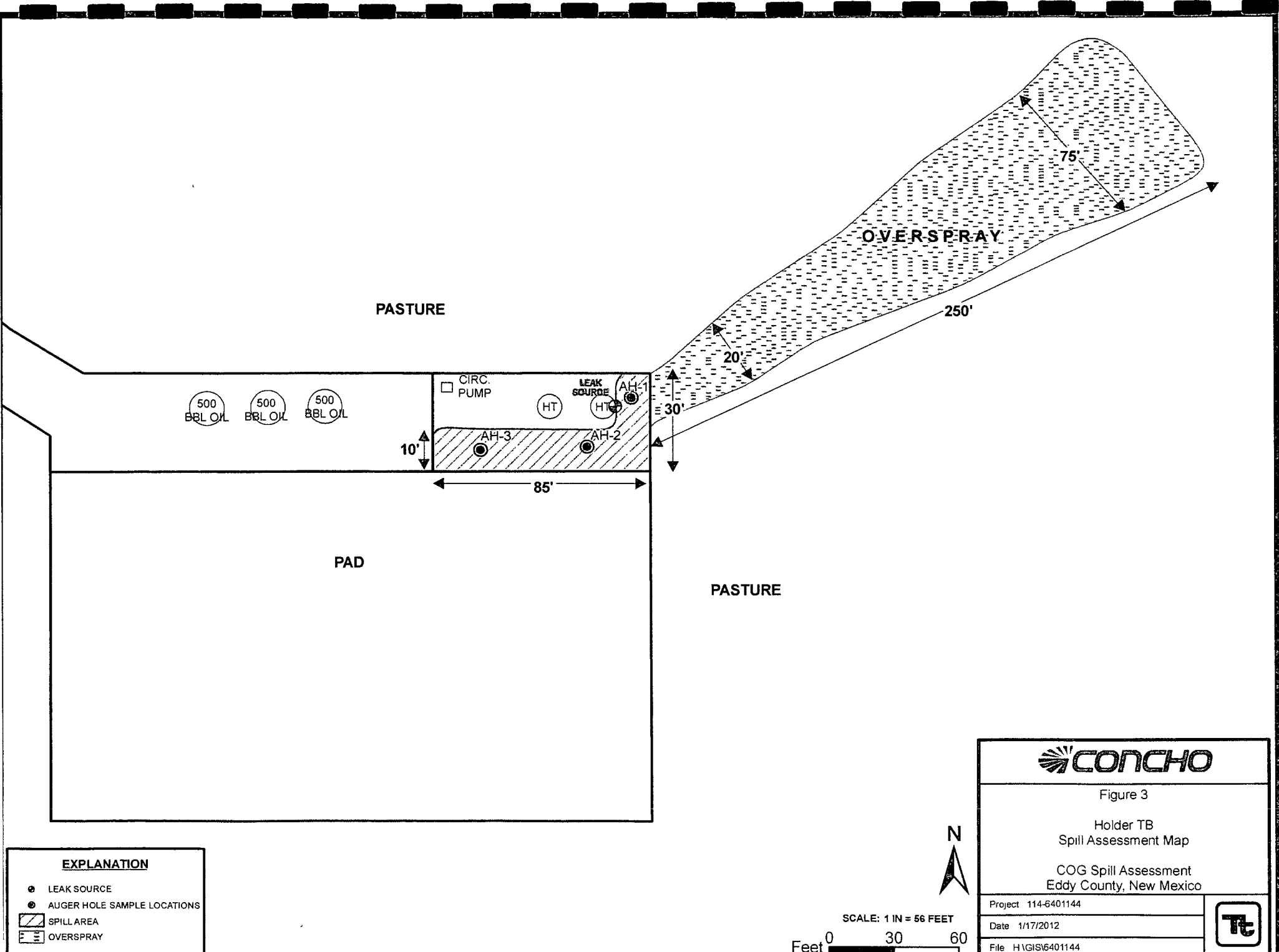
COG Spill Assessment
Eddy County, New Mexico

Project 114-6401144

Date 1/17/2012

File H:\GIS\6401144





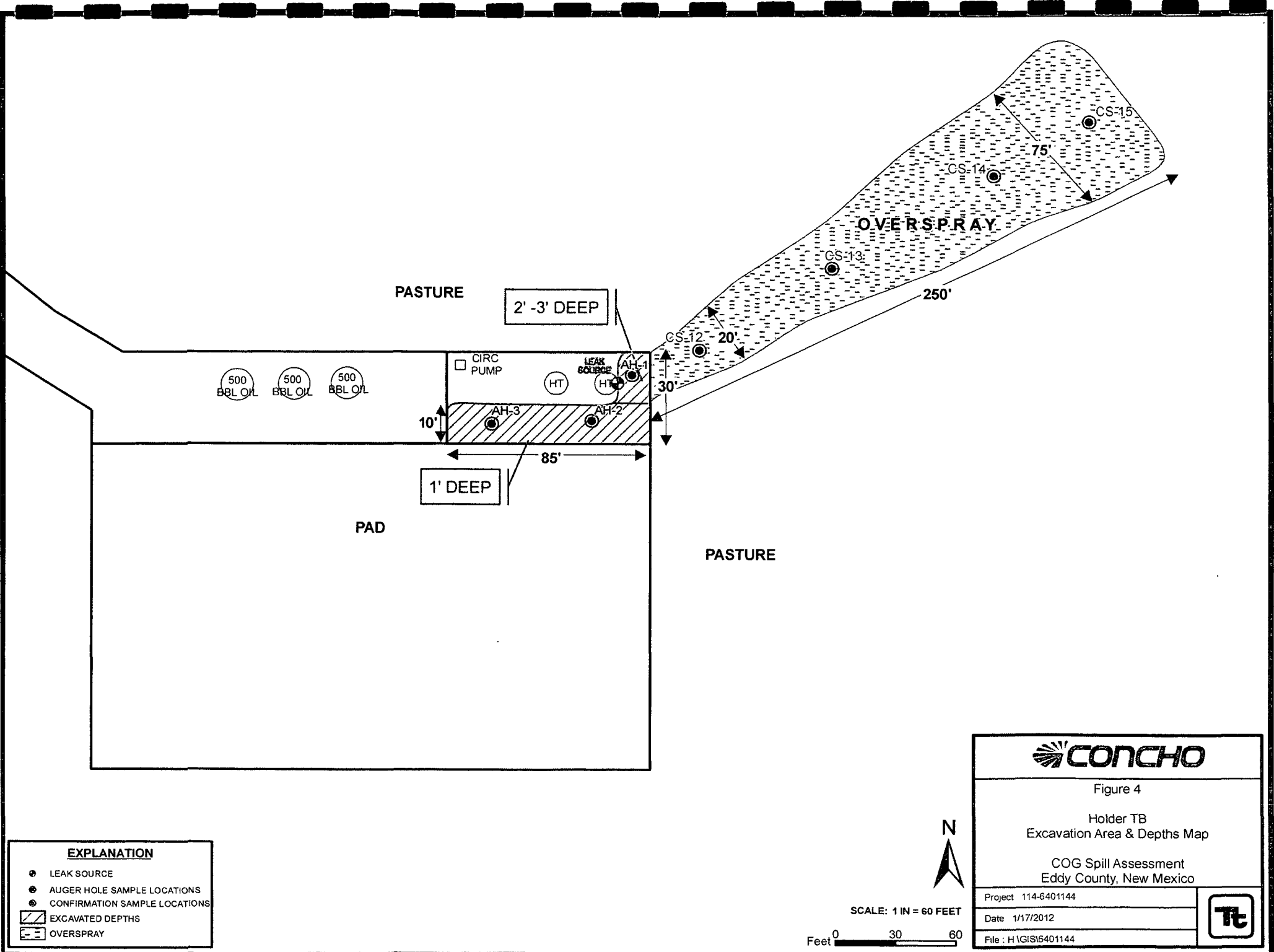




Figure 4

Holder TB

Excavation Area & Depths Map

COG Spill Assessment

Eddy County, New Mexico

Project	114-6401144
Date	1/17/2012
File	H:\GIS\6401144



TABLES

Eddy County, New Mexico

[illegible]

Table 1
COG Operating LLC
Holder CB Federal Paddock Tank Battery
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)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-3	12/21/2011	0-1	0.5		X	<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4,750
	"	1-1.5	0.5	X		-	-	-	-	-	-	-	-	288
	"	2-2.5	0.5	X		-	-	-	-	-	-	-	-	<200
CS-3 Bottom Hole	2/17/2012	2	-	X		-	-	-	-	-	-	-	-	<200
CS-9 Sidewall (north)	2/17/2012	-	-	X		-	-	-	-	-	-	-	-	<200
CS-10 Sidewall (south)	2/17/2012	-	-	X		-	-	-	-	-	-	-	-	3,330
CS-11 Sidewall (west)	2/17/2012	-	-	X		-	-	-	-	-	-	-	-	<200
CS-12 Overspray Area	2/17/2012	0-0.5	-	X		<2.00	118	118	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<200
CS-13 Overspray Area	2/17/2012	0-0.5	-	X		2.22	853	855	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<200
CS-14 Overspray Area	2/17/2012	0-0.5	-	X		<2.00	483	483	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	221
CS-15 Overspray Area	2/17/2012	0-0.5	-	X		<2.00	145	145	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<200

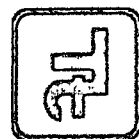
(--) Not Analyzed

 Excavation Depths

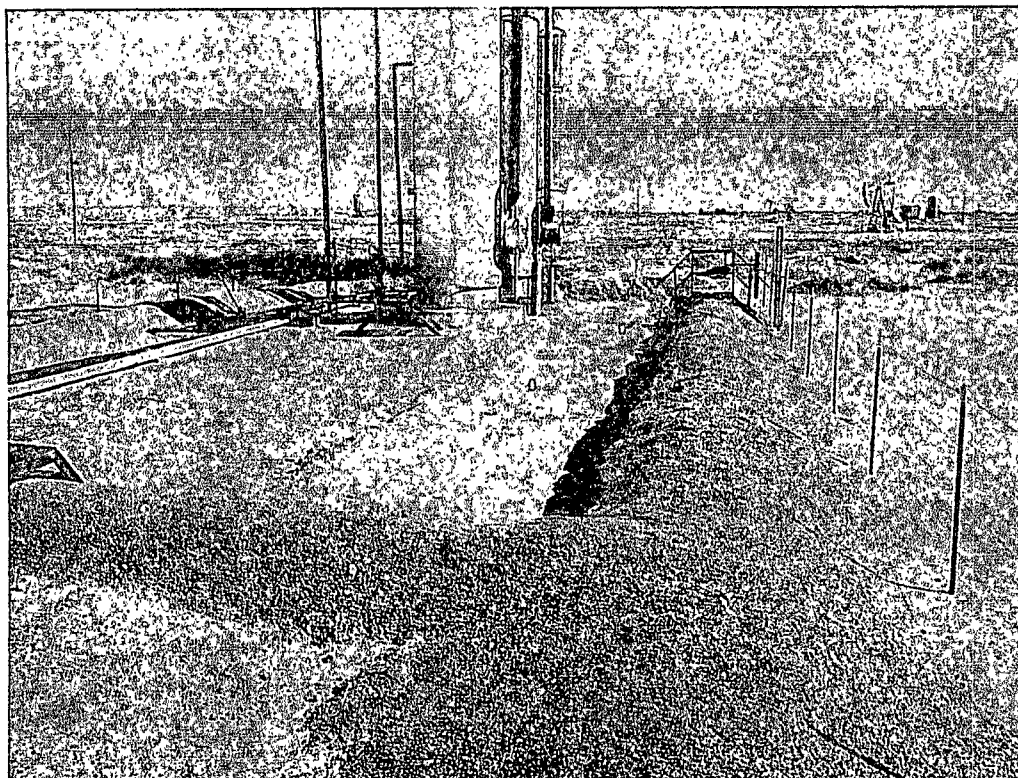
(BEB) Below Excavation Bottom

PHOTOGRAPHS

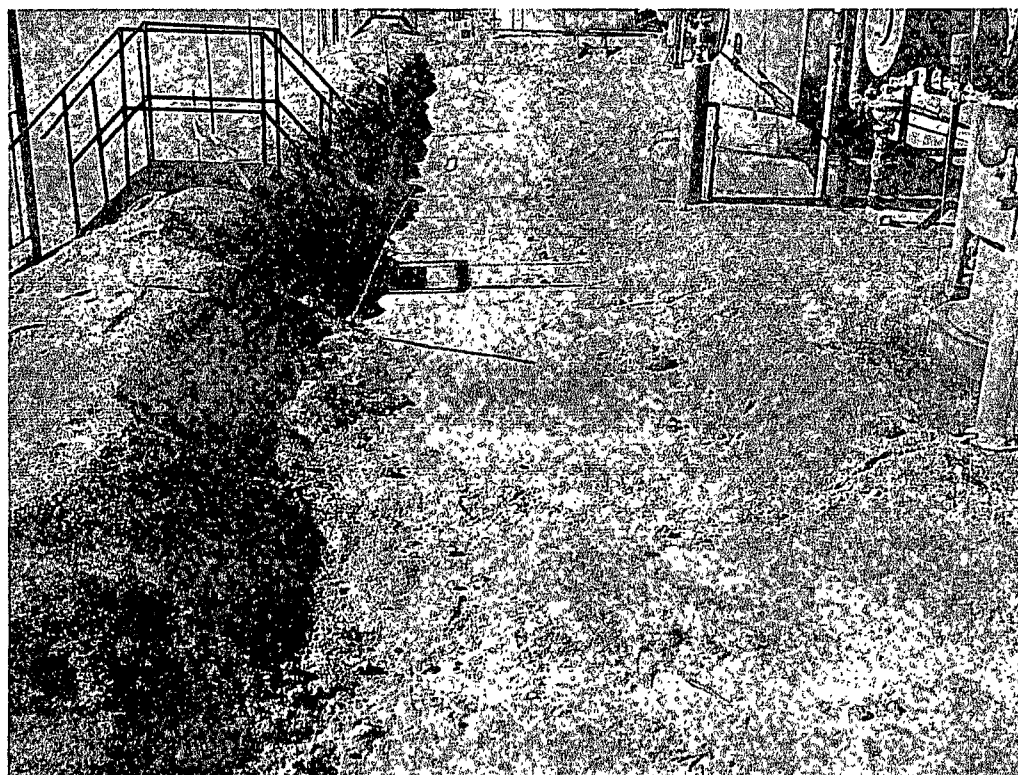
COG Operating LLC
Holder CB Federal
Paddock TB
Eddy County, New Mexico



TETRA TECH



View East – AH-3, AH-2 and AH-1



View West – AH-2 and AH-3

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 Report

Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 1300 Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	Holder CB Federal Paddock Tank Battery	Facility Type	Tank Battery
Surface Owner	Federal	Mineral Owner	
		Lease No.	30-015-20708

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	17	17-S	30-E					Eddy

Latitude N 32 50.138° Longitude W 103 59.951°

NATURE OF RELEASE

Type of Release: Produced fluid	Volume of Release	3 bbls oil 12 bbls produced water	Volume Recovered	1 bbl oil 10 bbls produced water
Source of Release Heater treater fire tube gasket	Date and Hour of Occurrence	11/13/2011	Date and Hour of Discovery	11/13/2011
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?			
By Whom?	Date and Hour			
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A			
If a Watercourse was Impacted, Describe Fully.* N/A				
Describe Cause of Problem and Remedial Action Taken.* Heater treater fire tube gasket was leaking. The heater treater was isolated and the fire tube gasket has been repaired. The heater treater has been returned to service.				
Describe Area Affected and Cleanup Action Taken.* Tetra Tech inspected site and collected samples to define spills extent. Soil with elevated chloride concentrations was removed and hauled away to Controlled Recovery, Inc., Hobbs, 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: Ike Tavaréz (Agent for CUC)		Approved by District Supervisor:		
Title: Project Manager		Approval Date:		Expiration Date:
E-mail Address: ike.tavaréz@tetrattech.com		Conditions of Approval:		Attached ☐
Date: 3-12-12 Phone: (432) 682-4559				

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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State of New Mexico
Energy Minerals and Natural Resources

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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	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Holder CB Federal Paddock TB	Facility Type	Tank Battery

Surface Owner	Federal	Mineral Owner		Lease No. (API#)	30-015-20708
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	17	17S	30E					Eddy

Latitude 32 50.138 Longitude 103 59.951

NATURE OF RELEASE

Type of Release	Produced fluid	Volume of Release	3bbls oil 12bbls produced water	Volume Recovered	1bbl oil 10bbls produced water
Source of Release	Heater treater fire tube gasket	Date and Hour of Occurrence	11/13/2011	Date and Hour of Discovery	11/13/2011
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.*

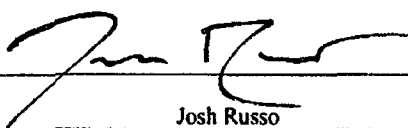
Describe Cause of Problem and Remedial Action Taken.*

Heater treater fire tube gasket was leaking. The heater treater was isolated and the fire tube gasket has been repaired. The heater treater has been returned to service.

Describe Area Affected and Cleanup Action Taken.*

Initially 15bbls of produced fluid was released from the heater treater and we were able to recover 11bbls with a vacuum truck. The spill area was contained inside the dike walls of the facility with the exception of some overspray due to wind gusts. All free fluid has been recovered from inside the facility and micro-blaze has been applied to the over-sprayed vegetation. Tetra Tech will sample the spill site area inside the facility 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: 11/22/2011	Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
COG - Holder CB Federal Paddock TB
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	20	21	22	23	24
110	30	29	28	27	26
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
18	17	16	15	14	288
19	20	21	22	23	113
30	29	28	27	26	25
290	31	32	33	34	35

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	23	24
30	29	210	28	27	26
31	208'	32	33	34	35

17 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

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

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
18	17	16	15	14	400
19	20	21	22	23	317
30	29	28	27	26	25
31	32	33	34	35	261

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data
-  Site Location

APPENDIX C

Summary Report

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

Report Date: January 5, 2012

Work Order: 11122306

Project Location: Eddy Co., NM
Project Name: COG/Holder CB Federal Paddock TB
Project Number: 114-6401144

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
285190	AH-1 1' BEB 0-1'	soil	2011-12-21	00:00	2011-12-22
285191	AH-1 1' BEB 1-1.5'	soil	2011-12-21	00:00	2011-12-22
285192	AH-1 1' BEB 2-2.5'	soil	2011-12-21	00:00	2011-12-22
285193	AH-2 1' BEB 0-1'	soil	2011-12-21	00:00	2011-12-22
285194	AH-2 1' BEB 1-1.5'	soil	2011-12-21	00:00	2011-12-22
285195	AH-2 1' BEB 2-2.5'	soil	2011-12-21	00:00	2011-12-22
285196	AH-2 1' BEB 3-3.5'	soil	2011-12-21	00:00	2011-12-22
285197	AH-2 1' BEB 4-4.5'	soil	2011-12-21	00:00	2011-12-22
285198	AH-2 1' BEB 5-5.5'	soil	2011-12-21	00:00	2011-12-22
285199	AH-3 0.5' BEB 0-1'	soil	2011-12-21	00:00	2011-12-22
285200	AH-3 0.5' BEB 1-1.5'	soil	2011-12-21	00:00	2011-12-22
285201	AH-3 0.5' BEB 2-2.5'	soil	2011-12-21	00:00	2011-12-22

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
285190 - AH-1 1' BEB 0-1'	0.0223	0.254	1.50	2.34	88.4	110 Qs
285193 - AH-2 1' BEB 0-1'	7.03	105	77.6	106	1340	3820 Qs
285194 - AH-2 1' BEB 1-1.5'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	3.96 Qr, Qs
285199 - AH-3 0.5' BEB 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00 Qr, Qs

Sample: 285190 - AH-1 1' BEB 0-1'

Param	Flag	Result	Units	RL
Chloride		8670	mg/Kg	4

Sample: 285191 - AH-1 1' BEB 1-1.5'

Param	Flag	Result	Units	RL
Chloride		8860	mg/Kg	4

Sample: 285192 - AH-1 1' BEB 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1360	mg/Kg	4

Sample: 285193 - AH-2 1' BEB 0-1'

Param	Flag	Result	Units	RL
Chloride		1570	mg/Kg	4

Sample: 285194 - AH-2 1' BEB 1-1.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 285195 - AH-2 1' BEB 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 285196 - AH-2 1' BEB 3-3.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 285197 - AH-2 1' BEB 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 285198 - AH-2 1' BEB 5-5.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 285199 - AH-3 0.5' BEB 0-1'

Param	Flag	Result	Units	RL
Chloride		4750	mg/Kg	4

Sample: 285200 - AH-3 0.5' BEB 1-1.5'

Param	Flag	Result	Units	RL
Chloride		288	mg/Kg	4

Sample: 285201 - AH-3 0.5' BEB 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4



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

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report (Corrected Report)

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

Report Date: January 5, 2012

Work Order: 11122306

Project Location: Eddy Co., NM
Project Name: COG/Holder CB Federal Paddock TB
Project Number: 114-6401144

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
285190	AH-1 1' BEB 0-1'	soil	2011-12-21	00:00	2011-12-22
285191	AH-1 1' BEB 1-1.5'	soil	2011-12-21	00:00	2011-12-22
285192	AH-1 1' BEB 2-2.5'	soil	2011-12-21	00:00	2011-12-22
285193	AH-2 1' BEB 0-1'	soil	2011-12-21	00:00	2011-12-22
285194	AH-2 1' BEB 1-1.5'	soil	2011-12-21	00:00	2011-12-22
285195	AH-2 1' BEB 2-2.5'	soil	2011-12-21	00:00	2011-12-22
285196	AH-2 1' BEB 3-3.5'	soil	2011-12-21	00:00	2011-12-22
285197	AH-2 1' BEB 4-4.5'	soil	2011-12-21	00:00	2011-12-22
285198	AH-2 1' BEB 5-5.5'	soil	2011-12-21	00:00	2011-12-22
285199	AH-3 0.5' BEB 0-1'	soil	2011-12-21	00:00	2011-12-22
285200	AH-3 0.5' BEB 1-1.5'	soil	2011-12-21	00:00	2011-12-22
285201	AH-3 0.5' BEB 2-2.5'	soil	2011-12-21	00:00	2011-12-22

Report Corrections (Work Order 11122306)

- BTEX and 8015 DRO/GRO results removed for sample 285195. 1/5/12

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

A handwritten signature in black ink that reads "Michael Abel". The signature is written in a cursive, flowing style.

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

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Case Narrative

Samples for project COG/Holder CB Federal Paddock TB were received by TraceAnalysis, Inc. on 2011-12-22 and assigned to work order 11122306. Samples for work order 11122306 were received intact at a temperature of 7.7 C. Samples were received on ice.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	74262	2011-12-28 at 07:25	87453	2011-12-28 at 07:25
BTEX	S 8021B	74348	2012-01-02 at 14:50	87557	2012-01-02 at 18:27
Chloride (Titration)	SM 4500-Cl B	74295	2011-12-29 at 15:30	87497	2011-12-30 at 09:53
Chloride (Titration)	SM 4500-Cl B	74295	2011-12-29 at 15:30	87498	2011-12-30 at 09:54
TPH DRO - NEW	S 8015 D	74279	2011-12-28 at 14:36	87474	2011-12-28 at 14:36
TPH DRO - NEW	S 8015 D	74345	2012-01-02 at 10:00	87554	2012-01-02 at 12:00
TPH GRO	S 8015 D	74262	2011-12-28 at 07:25	87454	2011-12-28 at 07:25
TPH GRO	S 8015 D	74291	2011-12-29 at 13:50	87486	2011-12-29 at 13:50
TPH GRO	S 8015 D	74348	2012-01-02 at 14:50	87558	2012-01-02 at 17:09

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 11122306 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: 285190 - AH-1 1' BEB 0-1'

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 87453
Prep Batch: 74262

Analytical Method: S 8021B
Date Analyzed: 2011-12-28
Sample Preparation: 2011-12-28

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	0.0223	mg/Kg	1	0.0200
Toluene		1	0.254	mg/Kg	1	0.0200
Ethylbenzene		1	1.50	mg/Kg	1	0.0200
Xylene		1	2.34	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	2.88	mg/Kg	1	2.00	144	70 - 130

Sample: 285190 - AH-1 1' BEB 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 87497
Prep Batch: 74295

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-12-30
Sample Preparation: 2011-12-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			8670	mg/Kg	100	4.00

Sample: 285190 - AH-1 1' BEB 0-1'

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 87474
Prep Batch: 74279

Analytical Method: S 8015 D
Date Analyzed: 2011-12-28
Sample Preparation: 2011-12-28

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		2	88.4	mg/Kg	1	50.0

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			96.2	mg/Kg	1	100	96	53.5 - 147.1

Sample: 285190 - AH-1 1' BEB 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	87486	Date Analyzed:	2011-12-29	Analyzed By:	MT
Prep Batch:	74291	Sample Preparation:	2011-12-29	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	110	mg/Kg	2	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.55	mg/Kg	2	2.00	78	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.42	mg/Kg	2	2.00	171	70 - 130

Sample: 285191 - AH-1 1' BEB 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	87497	Date Analyzed:	2011-12-30	Analyzed By:	AR
Prep Batch:	74295	Sample Preparation:	2011-12-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			8860	mg/Kg	100	4.00

Sample: 285192 - AH-1 1' BEB 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	87497	Date Analyzed:	2011-12-30	Analyzed By:	AR
Prep Batch:	74295	Sample Preparation:	2011-12-29	Prepared By:	AR

continued ...

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sample 285192 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1360	mg/Kg	100	4.00

Sample: 285193 - AH-2 1' BEB 0-1'

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 87453
Prep Batch: 74262

Analytical Method: S 8021B
Date Analyzed: 2011-12-28
Sample Preparation: 2011-12-28

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	7.03	mg/Kg	20	0.0200
Toluene		1	105	mg/Kg	20	0.0200
Ethylbenzene		1	77.6	mg/Kg	20	0.0200
Xylene		1	106	mg/Kg	20	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _{SR}	Q _{SI}	1.04	mg/Kg	20	2.00	52	70 - 130
4-Bromofluorobenzene (4-BFB)	Q _{SR}	Q _{SI}	29.1	mg/Kg	20	2.00	1455	70 - 130

Sample: 285193 - AH-2 1' BEB 0-1'

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 87497
Prep Batch: 74295

Analytical Method: SM 4500-Cl B
Date Analyzed: 2011-12-30
Sample Preparation: 2011-12-29

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

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1570	mg/Kg	100	4.00

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Sample: 285193 - AH-2 1' BEB 0-1'

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2011-12-28	Analyzed By:	kg
QC Batch:	87474	Sample Preparation:	2011-12-28	Prepared By:	kg
Prep Batch:	74279				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		2	1340	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			138	mg/Kg	1	100	138	53.5 - 147.1

Sample: 285193 - AH-2 1' BEB 0-1'

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2011-12-29	Analyzed By:	MT
QC Batch:	87486	Sample Preparation:	2011-12-29	Prepared By:	MT
Prep Batch:	74291				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q ⁿ	1	3820	mg/Kg	100	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q ^{sr}	Q ^{sr}	0.592	mg/Kg	100	2.00	30	70 - 130
4-Bromofluorobenzene (4-BFB)	Q ^{sr}	Q ^{sr}	59.7	mg/Kg	100	2.00	2985	70 - 130

Sample: 285194 - AH-2 1' BEB 1-1.5'

Laboratory:	Midland	Analytical Method:	S 8021B	Prep Method:	S 5035
Analysis:	BTEX	Date Analyzed:	2012-01-02	Analyzed By:	AG
QC Batch:	87557	Sample Preparation:	2012-01-02	Prepared By:	AG
Prep Batch:	74348				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	2	<0.0200	mg/Kg	1	0.0200
Toluene	u	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	2	<0.0200	mg/Kg	1	0.0200
Xylene	u	2	<0.0200	mg/Kg	1	0.0200

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.76	mg/Kg	1	2.00	138	82.8 - 143.1
4-Bromofluorobenzene (4-BFB)			2.68	mg/Kg	1	2.00	134	70.6 - 179

Sample: 285194 - AH-2 1' BEB 1-1.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 87497 Date Analyzed: 2011-12-30 Analyzed By: AR
Prep Batch: 74295 Sample Preparation: 2011-12-29 Prepared By: AR

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

Sample: 285194 - AH-2 1' BEB 1-1.5'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 87554 Date Analyzed: 2012-01-02 Analyzed By: kg
Prep Batch: 74345 Sample Preparation: 2012-01-02 Prepared By: kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			96.2	mg/Kg	1	100	96	53.5 - 147.1

Sample: 285194 - AH-2 1' BEB 1-1.5'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 87558 Date Analyzed: 2012-01-02 Analyzed By: AG
Prep Batch: 74348 Sample Preparation: 2012-01-02 Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	2	3.96	mg/Kg	1	2.00

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q _{st}	Q _{sr}	2.79	mg/Kg	1	2.00	140	30 - 134.6
4-Bromofluorobenzene (4-BFB)			2.56	mg/Kg	1	2.00	128	22.4 - 149

Sample: 285195 - AH-2 1' BEB 2-2.5'

Laboratory:	Midland			
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method: N/A
QC Batch:	87497	Date Analyzed:	2011-12-30	Analyzed By: AR
Prep Batch:	74295	Sample Preparation:	2011-12-29	Prepared By: AR

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

Sample: 285196 - AH-2 1' BEB 3-3.5'

Laboratory:	Midland			
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method: N/A
QC Batch:	87497	Date Analyzed:	2011-12-30	Analyzed By: AR
Prep Batch:	74295	Sample Preparation:	2011-12-29	Prepared By: AR

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

Sample: 285197 - AH-2 1' BEB 4-4.5'

Laboratory:	Midland			
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method: N/A
QC Batch:	87497	Date Analyzed:	2011-12-30	Analyzed By: AR
Prep Batch:	74295	Sample Preparation:	2011-12-29	Prepared By: AR

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

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Sample: 285198 - AH-2 1' BEB 5-5.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 87497 Date Analyzed: 2011-12-30 Analyzed By: AR
Prep Batch: 74295 Sample Preparation: 2011-12-29 Prepared By: AR

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

Sample: 285199 - AH-3 0.5' BEB 0-1'

Laboratory: Lubbock
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 87453 Date Analyzed: 2011-12-28 Analyzed By: MT
Prep Batch: 74262 Sample Preparation: 2011-12-28 Prepared By: MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.71	mg/Kg	1	2.00	86	70 - 130

Sample: 285199 - AH-3 0.5' BEB 0-1'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 87497 Date Analyzed: 2011-12-30 Analyzed By: AR
Prep Batch: 74295 Sample Preparation: 2011-12-29 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			4750	mg/Kg	100	4.00

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Sample: 285199 - AH-3 0.5' BEB 0-1'

Laboratory:	Midland		
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D
QC Batch:	87474	Date Analyzed:	2011-12-28
Prep Batch:	74279	Sample Preparation:	2011-12-28
		Prep Method:	N/A
		Analyzed By:	kg
		Prepared By:	kg

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			89.6	mg/Kg	1	100	90	53.5 - 147.1

Sample: 285199 - AH-3 0.5' BEB 0-1'

Laboratory:	Lubbock		
Analysis:	TPH GRO	Analytical Method:	S 8015 D
QC Batch:	87454	Date Analyzed:	2011-12-28
Prep Batch:	74262	Sample Preparation:	2011-12-28
		Prep Method:	S 5035
		Analyzed By:	MT
		Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr, Qs	1	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	70 - 130
4-Bromofluorobenzene (4-BFB)			2.11	mg/Kg	1	2.00	106	70 - 130

Sample: 285200 - AH-3 0.5' BEB 1-1.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	87498	Date Analyzed:	2011-12-30
Prep Batch:	74295	Sample Preparation:	2011-12-29
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

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Sample: 285201 - AH-3 0.5' BEB 2-2.5'

Laboratory:	Midland		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B
QC Batch:	87498	Date Analyzed:	2011-12-30
Prep Batch:	74295	Sample Preparation:	2011-12-29
		Prep Method:	N/A
		Analyzed By:	AR
		Prepared By:	AR

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

Method Blanks

Method Blank (1) QC Batch: 87453

QC Batch: 87453 Date Analyzed: 2011-12-28 Analyzed By: MT
Prep Batch: 74262 QC Preparation: 2011-12-28 Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00335	mg/Kg	0.02
Toluene		1	<0.00471	mg/Kg	0.02
Ethylbenzene		1	<0.00440	mg/Kg	0.02
Xylene		1	<0.00557	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			1.70	mg/Kg	1	2.00	85	70 - 130

Method Blank (1) QC Batch: 87454

QC Batch: 87454 Date Analyzed: 2011-12-28 Analyzed By: MT
Prep Batch: 74262 QC Preparation: 2011-12-28 Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.446	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.20	mg/Kg	1	2.00	110	70 - 130
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	70 - 130

Method Blank (1) QC Batch: 87474

QC Batch: 87474 Date Analyzed: 2011-12-28 Analyzed By: kg
Prep Batch: 74279 QC Preparation: 2011-12-28 Prepared By: kg

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Parameter	Flag	Cert	MDL Result	Units	RL
DRO		2	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			97.4	mg/Kg	1	100	97	52.7 - 133.8

Method Blank (1) QC Batch: 87486

QC Batch: 87486 Date Analyzed: 2011-12-29 Analyzed By: MT
Prep Batch: 74291 QC Preparation: 2011-12-29 Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.446	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.08	mg/Kg	1	2.00	104	70 - 130
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	70 - 130

Method Blank (1) QC Batch: 87497

QC Batch: 87497 Date Analyzed: 2011-12-30 Analyzed By: AR
Prep Batch: 74295 QC Preparation: 2011-12-29 Prepared By: AR

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

Method Blank (1) QC Batch: 87498

QC Batch: 87498 Date Analyzed: 2011-12-30 Analyzed By: AR
Prep Batch: 74295 QC Preparation: 2011-12-29 Prepared By: AR

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

Method Blank (1) QC Batch: 87554

QC Batch: 87554 Date Analyzed: 2012-01-02 Analyzed By: kg
Prep Batch: 74345 QC Preparation: 2012-01-02 Prepared By: kg

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		2	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			83.5	mg/Kg	1	100	84	52.7 - 133.8

Method Blank (1) QC Batch: 87557

QC Batch: 87557 Date Analyzed: 2012-01-02 Analyzed By: AG
Prep Batch: 74348 QC Preparation: 2012-01-02 Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.0118	mg/Kg	0.02
Toluene		2	<0.00600	mg/Kg	0.02
Ethylbenzene		2	<0.00850	mg/Kg	0.02
Xylene		2	<0.00613	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.03	mg/Kg	1	2.00	102	65.9 - 111.8
4-Bromofluorobenzene (4-BFB)			1.66	mg/Kg	1	2.00	83	48.4 - 123.1

Method Blank (1) QC Batch: 87558

QC Batch: 87558 Date Analyzed: 2012-01-02 Analyzed By: AG
Prep Batch: 74348 QC Preparation: 2012-01-02 Prepared By: AG

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Parameter	Flag	Cert	MDL Result	Units	RL
GRO		2	1.04	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.05	mg/Kg	1	2.00	102	67.6 - 150
4-Bromofluorobenzene (4-BFB)			1.59	mg/Kg	1	2.00	80	52.4 - 130

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 87453
Prep Batch: 74262

Date Analyzed: 2011-12-28
QC Preparation: 2011-12-28

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.79	mg/Kg	1	2.00	<0.00335	89	70 - 130
Toluene		1	1.80	mg/Kg	1	2.00	<0.00471	90	70 - 130
Ethylbenzene		1	1.84	mg/Kg	1	2.00	<0.00440	92	70 - 130
Xylene		1	5.48	mg/Kg	1	6.00	<0.00557	91	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.79	mg/Kg	1	2.00	<0.00335	90	70 - 130	0	20
Toluene		1	1.80	mg/Kg	1	2.00	<0.00471	90	70 - 130	0	20
Ethylbenzene		1	1.86	mg/Kg	1	2.00	<0.00440	93	70 - 130	1	20
Xylene		1	5.55	mg/Kg	1	6.00	<0.00557	92	70 - 130	1	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)	1.80	1.81	mg/Kg	1	2.00	90	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.77	1.80	mg/Kg	1	2.00	89	90	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 87454
Prep Batch: 74262

Date Analyzed: 2011-12-28
QC Preparation: 2011-12-28

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.8	mg/Kg	1	20.0	<0.446	94	70 - 130

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

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.8	mg/Kg	1	20.0	<0.446	99	70 - 130	5	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.00	2.05	mg/Kg	1	2.00	100	103	70 - 130
4-Bromofluorobenzene (4-BFB)	2.13	2.16	mg/Kg	1	2.00	106	108	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 87474
Prep Batch: 74279

Date Analyzed: 2011-12-28
QC Preparation: 2011-12-28

Analyzed By: kg
Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	205	mg/Kg	1	250	<14.5	82	64.5 - 146.9

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	210	mg/Kg	1	250	<14.5	84	64.5 - 146.9	2	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
n-Tricosane	104	105	mg/Kg	1	100	104	105	65.3 - 135.8

Laboratory Control Spike (LCS-1)

QC Batch: 87486
Prep Batch: 74291

Date Analyzed: 2011-12-29
QC Preparation: 2011-12-29

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.0	mg/Kg	1	20.0	<0.446	90	70 - 130

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

Param	F	C	LCSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			Result	Units							
GRO			18.2	mg/Kg	1	20.0	<0.446	91	70 - 130	1	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	1.87	mg/Kg	1	2.00	97	94	70 - 130
4-Bromofluorobenzene (4-BFB)	2.14	2.17	mg/Kg	1	2.00	107	108	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 87497
Prep Batch: 74295

Date Analyzed: 2011-12-30
QC Preparation: 2011-12-29

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
			Result	Units					
Chloride			96.2	mg/Kg	1	100	<3.85	96	85 - 115

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

Param	F	C	LCSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			Result	Units							
Chloride			104	mg/Kg	1	100	<3.85	104	85 - 115	8	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 87498
Prep Batch: 74295

Date Analyzed: 2011-12-30
QC Preparation: 2011-12-29

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
			Result	Units					
Chloride			96.2	mg/Kg	1	100	<3.85	96	85 - 115

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

Param	F	C	LCSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
			Result	Units							
Chloride			105	mg/Kg	1	100	<3.85	105	85 - 115	9	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: 87554
Prep Batch: 74345

Date Analyzed: 2012-01-02
QC Preparation: 2012-01-02

Analyzed By: kg
Prepared By: kg

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	201	mg/Kg	1	250	<14.5	80	64.5 - 146.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	219	mg/Kg	1	250	<14.5	88	64.5 - 146.9	9	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	99.5	107	mg/Kg	1	100	100	107	65.3 - 135.8

Laboratory Control Spike (LCS-1)

QC Batch: 87557
Prep Batch: 74348

Date Analyzed: 2012-01-02
QC Preparation: 2012-01-02

Analyzed By: AG
Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	2.08	mg/Kg	1	2.00	<0.0118	104	77.4 - 121.7
Toluene		2	2.02	mg/Kg	1	2.00	<0.00600	101	88.6 - 121.6
Ethylbenzene		2	1.92	mg/Kg	1	2.00	<0.00850	96	74.3 - 117.9
Xylene		2	5.75	mg/Kg	1	6.00	<0.00613	96	73.4 - 118.8

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	2.20	mg/Kg	1	2.00	<0.0118	110	77.4 - 121.7	6	20
Toluene		2	2.12	mg/Kg	1	2.00	<0.00600	106	88.6 - 121.6	5	20
Ethylbenzene		2	2.03	mg/Kg	1	2.00	<0.00850	102	74.3 - 117.9	6	20
Xylene		2	6.08	mg/Kg	1	6.00	<0.00613	101	73.4 - 118.8	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)	2.02	2.06	mg/Kg	1	2.00	101	103	65.5 - 116.7

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	1.93	2.02	mg/Kg	1	2.00	96	101	56.2 - 132.1

Laboratory Control Spike (LCS-1)

QC Batch: 87558
Prep Batch: 74348

Date Analyzed: 2012-01-02
QC Preparation: 2012-01-02

Analyzed By: AG
Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	17.5	mg/Kg	1	20.0	<0.753	88	60.9 - 105.4

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		2	18.0	mg/Kg	1	20.0	<0.753	90	60.9 - 105.4	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.06	2.14	mg/Kg	1	2.00	103	107	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.75	1.84	mg/Kg	1	2.00	88	92	56.2 - 132

Matrix Spike (MS-1) Spiked Sample: 285158

QC Batch: 87453
Prep Batch: 74262

Date Analyzed: 2011-12-28
QC Preparation: 2011-12-28

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.58	mg/Kg	1	2.00	<0.00335	79	70 - 130
Toluene		1	1.70	mg/Kg	1	2.00	<0.00471	85	70 - 130
Ethylbenzene		1	1.85	mg/Kg	1	2.00	<0.00440	92	70 - 130
Xylene		1	5.49	mg/Kg	1	6.00	<0.00557	92	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.61	mg/Kg	1	2.00	<0.00335	80	70 - 130	2	20

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Toluene		1	1.73	mg/Kg	1	2.00	<0.00471	86	70 - 130	2	20
Ethylbenzene		1	1.90	mg/Kg	1	2.00	<0.00440	95	70 - 130	3	20
Xylene		1	5.63	mg/Kg	1	6.00	<0.00557	94	70 - 130	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.78	1.82	mg/Kg	1	2	89	91	70 - 130
4-Bromofluorobenzene (4-BFB)	1.69	1.77	mg/Kg	1	2	84	88	70 - 130

Matrix Spike (MS-1) Spiked Sample: 285158

QC Batch: 87454
Prep Batch: 74262

Date Analyzed: 2011-12-28
QC Preparation: 2011-12-28

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	1	11.2	mg/Kg	1	20.0	<0.446	56 70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qr	Qr	1	17.1	mg/Kg	1	20.0	<0.446	86	70 - 130	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)	Qsr	Qsr	1.28	2.00	mg/Kg	1	2	64 100 70 - 130
4-Bromofluorobenzene (4-BFB)			1.50	2.12	mg/Kg	1	2	75 106 70 - 130

Matrix Spike (MS-1) Spiked Sample: 285309

QC Batch: 87474
Prep Batch: 74279

Date Analyzed: 2011-12-28
QC Preparation: 2011-12-28

Analyzed By: kg
Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	186	mg/Kg	1	250	<14.5	74	38.8 - 153.3

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	195	mg/Kg	1	250	<14.5	78	38.8 - 153.3	5	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	85.3	93.5	mg/Kg	1	100	85	94	54.6 - 149.8

Matrix Spike (MS-1) Spiked Sample: 285289

QC Batch: 87486
Prep Batch: 74291

Date Analyzed: 2011-12-29
QC Preparation: 2011-12-29

Analyzed By: MT
Prepared By: MT

Param				MS	Units	Dil.	Spike	Matrix	Rec.	Rec. Limit
		F	C	Result			Amount	Result		
GRO	Qs	Qs	1	2020	mg/Kg	50	20.0	1920	500	70 - 130

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

Param				MSD	Units	Dil.	Spike	Matrix	Rec.		RPD	
	F	C	Result	Amount			Result	Rec.	Limit	RPD	Limit	
GRO	Qs	Qs	1	2420	mg/Kg	50	20.0	1920	2500	70 - 130	18	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)	Q _{sr}	Q _{sr}	11.0	19.8	mg/Kg	50	2	550	990	70 - 130
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	29.0	42.6	mg/Kg	50	2	1450	2130	70 - 130

Matrix Spike (MS-1) Spiked Sample: 285199

QC Batch: 87497
Prep Batch: 74295

Date Analyzed: 2011-12-30
QC Preparation: 2011-12-29

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			15000	mg/Kg	100	10000	4750	102	79.4 - 120.6

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			15300	mg/Kg	100	10000	4750	106	79.4 - 120.6	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: 285487

QC Batch: 87498
Prep Batch: 74295

Date Analyzed: 2011-12-30
QC Preparation: 2011-12-29

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			9930	mg/Kg	100	10000	<385	99	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			10200	mg/Kg	100	10000	<385	102	79.4 - 120.6	3	20

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

Matrix Spike (MS-1) Spiked Sample: 285234

QC Batch: 87554
Prep Batch: 74345

Date Analyzed: 2012-01-02
QC Preparation: 2012-01-02

Analyzed By: kg
Prepared By: kg

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	205	mg/Kg	1	250	<14.5	82	38.8 - 153.3

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	214	mg/Kg	1	250	<14.5	86	38.8 - 153.3	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	97.0	94.5	mg/Kg	1	100	97	94	54.6 - 149.8

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Matrix Spike (MS-1) Spiked Sample: 285290

QC Batch: 87557
Prep Batch: 74348

Date Analyzed: 2012-01-02
QC Preparation: 2012-01-02

Analyzed By: AG
Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	2.24	mg/Kg	1	2.00	<0.0118	112	69.4 - 123.6
Toluene		2	2.21	mg/Kg	1	2.00	<0.00600	110	75.4 - 134.3
Ethylbenzene		2	2.16	mg/Kg	1	2.00	<0.00850	108	58.8 - 133.7
Xylene		2	6.50	mg/Kg	1	6.00	<0.00613	108	57 - 134.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	1.99	mg/Kg	1	2.00	<0.0118	100	69.4 - 123.6	12	20
Toluene		2	1.96	mg/Kg	1	2.00	<0.00600	98	75.4 - 134.3	12	20
Ethylbenzene		2	1.96	mg/Kg	1	2.00	<0.00850	98	58.8 - 133.7	10	20
Xylene		2	5.87	mg/Kg	1	6.00	<0.00613	98	57 - 134.2	10	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)	2.12	2.49	mg/Kg	1	2	106	124	79.4 - 141.1
4-Bromofluorobenzene (4-BFB)	2.07	2.47	mg/Kg	1	2	104	124	71 - 167

Matrix Spike (MS-1) Spiked Sample: 285125

QC Batch: 87558
Prep Batch: 74348

Date Analyzed: 2012-01-02
QC Preparation: 2012-01-02

Analyzed By: AG
Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	20.7	mg/Kg	1	20.0	3.7	85	61.8 - 114

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

Param	F	C	MSD		Dil.	Spike	Matrix	Rec.		RPD		
			Result	Units		Amount	Result	Rec.	Limit			
GRO	¹ _{Q_r,Q_s}	_{Q_r,Q_s}	2	3.47	mg/Kg	1	20.0	3.7	0	61.8 - 114	143	20

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

continued ...

Report Date: January 5, 2012
114-6401144

Work Order: 11122306
COG/Holder CB Federal Paddock TB

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Eddy Co., NM

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.70	1.72	mg/Kg	1	2	135	86	29.4 - 161.7
4-Bromofluorobenzene (4-BFB)	2.64	1.54	mg/Kg	1	2	132	77	37.3 - 162

Calibration Standards

Standard (CCV-1)

QC Batch: 87453

Date Analyzed: 2011-12-28

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0913	91	80 - 120	2011-12-28
Toluene		1	mg/Kg	0.100	0.0920	92	80 - 120	2011-12-28
Ethylbenzene		1	mg/Kg	0.100	0.0950	95	80 - 120	2011-12-28
Xylene		1	mg/Kg	0.300	0.283	94	80 - 120	2011-12-28

Standard (CCV-2)

QC Batch: 87453

Date Analyzed: 2011-12-28

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0876	88	80 - 120	2011-12-28
Toluene		1	mg/Kg	0.100	0.0901	90	80 - 120	2011-12-28
Ethylbenzene		1	mg/Kg	0.100	0.0919	92	80 - 120	2011-12-28
Xylene		1	mg/Kg	0.300	0.278	92	80 - 120	2011-12-28

Standard (CCV-3)

QC Batch: 87453

Date Analyzed: 2011-12-28

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/Kg	0.100	0.0889	89	80 - 120	2011-12-28
Toluene		1	mg/Kg	0.100	0.0873	87	80 - 120	2011-12-28
Ethylbenzene		1	mg/Kg	0.100	0.0892	89	80 - 120	2011-12-28
Xylene		1	mg/Kg	0.300	0.268	89	80 - 120	2011-12-28

Report Date: January 5, 2012
114-6401144

Work Order: 11122306
COG/Holder CB Federal Paddock TB

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Eddy Co., NM

Standard (CCV-1)

QC Batch: 87454

Date Analyzed: 2011-12-28

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.948	95	80 - 120	2011-12-28

Standard (CCV-2)

QC Batch: 87454

Date Analyzed: 2011-12-28

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.10	110	80 - 120	2011-12-28

Standard (CCV-1)

QC Batch: 87474

Date Analyzed: 2011-12-28

Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	228	91	80 - 120	2011-12-28

Standard (CCV-2)

QC Batch: 87474

Date Analyzed: 2011-12-28

Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	223	89	80 - 120	2011-12-28

Standard (CCV-3)

QC Batch: 87474

Date Analyzed: 2011-12-28

Analyzed By: kg

Report Date: January 5, 2012
114-6401144

Work Order: 11122306
COG/Holder CB Federal Paddock TB

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Eddy Co., NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	208	83	80 - 120	2011-12-28

Standard (CCV-2)

QC Batch: 87486

Date Analyzed: 2011-12-29

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.979	98	80 - 120	2011-12-29

Standard (CCV-3)

QC Batch: 87486

Date Analyzed: 2011-12-29

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.911	91	80 - 120	2011-12-29

Standard (ICV-1)

QC Batch: 87497

Date Analyzed: 2011-12-30

Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.9	99	85 - 115	2011-12-30

Standard (CCV-1)

QC Batch: 87497

Date Analyzed: 2011-12-30

Analyzed By: AR

Report Date: January 5, 2012
114-6401144

Work Order: 11122306
COG/Holder CB Federal Paddock TB

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Eddy Co., NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2011-12-30

Standard (ICV-1)

QC Batch: 87498

Date Analyzed: 2011-12-30

Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2011-12-30

Standard (CCV-1)

QC Batch: 87498

Date Analyzed: 2011-12-30

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2011-12-30

Standard (CCV-2)

QC Batch: 87554

Date Analyzed: 2012-01-02

Analyzed By: kg

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	205	82	80 - 120	2012-01-02

Standard (CCV-3)

QC Batch: 87554

Date Analyzed: 2012-01-02

Analyzed By: kg

Report Date: January 5, 2012
114-6401144

Work Order: 11122306
COG/Holder CB Federal Paddock TB

Page Number: 33 of 36
Eddy Co., NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	202	81	80 - 120	2012-01-02

Standard (CCV-2)

QC Batch: 87557

Date Analyzed: 2012-01-02

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/Kg	0.100	0.111	111	80 - 120	2012-01-02
Toluene		2	mg/Kg	0.100	0.106	106	80 - 120	2012-01-02
Ethylbenzene		2	mg/Kg	0.100	0.102	102	80 - 120	2012-01-02
Xylene		2	mg/Kg	0.300	0.303	101	80 - 120	2012-01-02

Standard (CCV-3)

QC Batch: 87557

Date Analyzed: 2012-01-02

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/Kg	0.100	0.108	108	80 - 120	2012-01-02
Toluene		2	mg/Kg	0.100	0.102	102	80 - 120	2012-01-02
Ethylbenzene		2	mg/Kg	0.100	0.0975	98	80 - 120	2012-01-02
Xylene		2	mg/Kg	0.300	0.292	97	80 - 120	2012-01-02

Standard (CCV-2)

QC Batch: 87558

Date Analyzed: 2012-01-02

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.11	111	80 - 120	2012-01-02

Report Date: January 5, 2012
114-6401144

Work Order: 11122306
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Eddy Co., NM

Standard (CCV-3)

QC Batch: 87558

Date Analyzed: 2012-01-02

Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.17	117	80 - 120	2012-01-02

Appendix

Report Definitions

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

Laboratory Certifications

	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-11-5	Lubbock
2	NELAP	T104704392-11-3	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 special comment - Prep error. Sample was not spiked.

Attachments

Report Date: January 5, 2012
114-6401144

Work Order: 11122306
COG/Holder CB Federal Paddock TB

Page Number: 36 of 36
Eddy Co., NM

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

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 Tavaraz

PROJECT NO.:

114-6401144

PROJECT NAME:

Holder CB Federal Paddock TB

LAB I.D.
NUMBER

DATE

TIME

MATRIX

COMP.

GRAB

Eddy Co NM
SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

PRESERVATIVE
METHOD

HCL

HNO3

ICE

NONE

EXT. TO C35

8015 MOD. TX1005

PAH 8270

RCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8240/8260/624

GC/MS Semi. Vol. 8270/625

PCB's 8080/608

Pest. 808/608

Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

Major Anions/Cations, pH, TDS

285199

12/21

S

X

AH-3

0.5' BEB

0-1'

1

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X

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X

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200

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1-1.5'

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↓

↓

↓

NO

201

↓

↓

↓

2-2.5'

↓

↓

↓

↓

RELINQUISHED BY: (Signature)

Date: 12-22-11

RECEIVED BY: (Signature)

Date: 12/22/11

SAMPLED BY: (Print & Initial)

Date: 12-22-11

RELINQUISHED BY: (Signature)

Date: 12/23/11

RECEIVED BY: (Signature)

Date: 12/23/11

SAMPLE SHIPPED BY: (Circle)

AIRBILL #: _____

RELINQUISHED BY: (Signature)

Date: 12-20

RECEIVED BY: (Signature)

Date: _____

HAND DELIVERED

OTHER: _____

RECEIVING LABORATORY: Trace

RECEIVED BY: (Signature)

TETRA TECH CONTACT PERSON:

Results by:

ADDRESS: _____

CITY: Midland STATE: TX ZIP: _____

CONTACT: _____ PHONE: _____ DATE: _____ TIME: _____

SAMPLE CONDITION WHEN RECEIVED

REMARKS:

Ike Tavaraz

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.

Summary Report

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

Report Date: February 29, 2012

Work Order: 12022315

Project Location: Eddy Co., NM
Project Name: COG/Holder CB Federal Paddock TB
Project Number: 114-6401144

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
289730	CS-1 Bottom Hole 3' (AH-1)	soil	2012-02-16	00:00	2012-02-23
289731	CS-2 Bottom Hole 1' (AH-2)	soil	2012-02-16	00:00	2012-02-23
289732	CS-3 Bottom Hole 2' (AH-3)	soil	2012-02-17	00:00	2012-02-23
289733	CS-4 Sidewall (AH-1)	soil	2012-02-16	00:00	2012-02-23
289734	CS-5 Sidewall (AH-1)	soil	2012-02-16	00:00	2012-02-23
289735	CS-6 Sidewall (AH-1)	soil	2012-02-16	00:00	2012-02-23
289736	CS-7 Sidewall (AH-2)	soil	2012-02-16	00:00	2012-02-23
289737	CS-8 Sidewall (AH-2)	soil	2012-02-16	00:00	2012-02-23
289738	CS-9 Sidewall (AH-3)	soil	2012-02-17	00:00	2012-02-23
289739	CS-10 Sidewall (AH-3)	soil	2012-02-17	00:00	2012-02-23
289740	CS-11 Sidewall (AH-3)	soil	2012-02-17	00:00	2012-02-23
289741	CS-12 Overspray area 0-.5'	soil	2012-02-17	00:00	2012-02-23
289742	CS-13 Overspray area 0-.5'	soil	2012-02-17	00:00	2012-02-23
289743	CS-14 Overspray area 0-.5'	soil	2012-02-17	00:00	2012-02-23
289744	CS-15 Overspray area 0-.5'	soil	2012-02-17	00:00	2012-02-23

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
289741 - CS-12 Overspray area 0-.5'	<0.0200	<0.0200	<0.0200	<0.0200	118 Qr	<2.00
289742 - CS-13 Overspray area 0-.5'	<0.0200	<0.0200	<0.0200	<0.0200	853 Qr	2.22
289743 - CS-14 Overspray area 0-.5'	<0.0200	<0.0200	<0.0200	<0.0200	483 Qr	<2.00
289744 - CS-15 Overspray area 0-.5'	<0.0200	<0.0200	<0.0200	<0.0200	145 Qi	<2.00

Sample: 289730 - CS-1 Bottom Hole 3' (AH-1)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 289731 - CS-2 Bottom Hole 1' (AH-2)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 289732 - CS-3 Bottom Hole 2' (AH-3)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 289733 - CS-4 Sidewall (AH-1)

Param	Flag	Result	Units	RL
Chloride		12700	mg/Kg	4

Sample: 289734 - CS-5 Sidewall (AH-1)

Param	Flag	Result	Units	RL
Chloride		7980	mg/Kg	4

Sample: 289735 - CS-6 Sidewall (AH-1)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 289736 - CS-7 Sidewall (AH-2)

Param	Flag	Result	Units	RL
Chloride		2190	mg/Kg	4

Sample: 289737 - CS-8 Sidewall (AH-2)

Param	Flag	Result	Units	RL
Chloride		13800	mg/Kg	4

Sample: 289738 - CS-9 Sidewall (AH-3)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 289739 - CS-10 Sidewall (AH-3)

Param	Flag	Result	Units	RL
Chloride		3330	mg/Kg	4

Sample: 289740 - CS-11 Sidewall (AH-3)

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 289741 - CS-12 Overspray area 0-.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 289742 - CS-13 Overspray area 0-.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 289743 - CS-14 Overspray area 0-.5'

Param	Flag	Result	Units	RL
Chloride		221	mg/Kg	4

Sample: 289744 - CS-15 Overspray area 0-.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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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

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: February 29, 2012

Work Order: 12022315

Project Location: Eddy Co., NM
Project Name: COG/Holder CB Federal Paddock TB
Project Number: 114-6401144

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
289730	CS-1 Bottom Hole 3' (AH-1)	soil	2012-02-16	00:00	2012-02-23
289731	CS-2 Bottom Hole 1' (AH-2)	soil	2012-02-16	00:00	2012-02-23
289732	CS-3 Bottom Hole 2' (AH-3)	soil	2012-02-17	00:00	2012-02-23
289733	CS-4 Sidewall (AH-1)	soil	2012-02-16	00:00	2012-02-23
289734	CS-5 Sidewall (AH-1)	soil	2012-02-16	00:00	2012-02-23
289735	CS-6 Sidewall (AH-1)	soil	2012-02-16	00:00	2012-02-23
289736	CS-7 Sidewall (AH-2)	soil	2012-02-16	00:00	2012-02-23
289737	CS-8 Sidewall (AH-2)	soil	2012-02-16	00:00	2012-02-23
289738	CS-9 Sidewall (AH-3)	soil	2012-02-17	00:00	2012-02-23
289739	CS-10 Sidewall (AH-3)	soil	2012-02-17	00:00	2012-02-23
289740	CS-11 Sidewall (AH-3)	soil	2012-02-17	00:00	2012-02-23
289741	CS-12 Overspray area 0-.5'	soil	2012-02-17	00:00	2012-02-23
289742	CS-13 Overspray area 0-.5'	soil	2012-02-17	00:00	2012-02-23
289743	CS-14 Overspray area 0-.5'	soil	2012-02-17	00:00	2012-02-23
289744	CS-15 Overspray area 0-.5'	soil	2012-02-17	00:00	2012-02-23

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

This report consists of a total of 25 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

A handwritten signature in black ink that reads "Michael Abel". The signature is written in a cursive, flowing style.

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

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Sample 289735 (CS-6 Sidewall (AH-1))	7
Sample 289736 (CS-7 Sidewall (AH-2))	7
Sample 289737 (CS-8 Sidewall (AH-2))	8
Sample 289738 (CS-9 Sidewall (AH-3))	8
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Case Narrative

Samples for project COG/Holder CB Federal Paddock TB were received by TraceAnalysis, Inc. on 2012-02-23 and assigned to work order 12022315. Samples for work order 12022315 were received intact at a temperature of 8.4 C. Samples were received on ice.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	75509	2012-02-28 at 11:05	88948	2012-02-28 at 23:50
Chloride (Titration)	SM 4500-Cl B	75455	2012-02-25 at 05:56	88877	2012-02-26 at 09:57
Chloride (Titration)	SM 4500-Cl B	75455	2012-02-25 at 05:56	88879	2012-02-26 at 09:58
TPH DRO - NEW	S 8015 D	75500	2012-02-28 at 16:04	88939	2012-02-28 at 16:04
TPH GRO	S 8015 D	75509	2012-02-28 at 11:05	88950	2012-02-29 at 00:16

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12022315 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: 289730 - CS-1 Bottom Hole 3' (AH-1)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-02-26	Analyzed By:	AR
QC Batch:	88877	Sample Preparation:	2012-02-25	Prepared By:	AR
Prep Batch:	75455				

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

Sample: 289731 - CS-2 Bottom Hole 1' (AH-2)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-02-26	Analyzed By:	AR
QC Batch:	88877	Sample Preparation:	2012-02-25	Prepared By:	AR
Prep Batch:	75455				

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

Sample: 289732 - CS-3 Bottom Hole 2' (AH-3)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-02-26	Analyzed By:	AR
QC Batch:	88877	Sample Preparation:	2012-02-25	Prepared By:	AR
Prep Batch:	75455				

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

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Sample: 289733 - CS-4 Sidewall (AH-1)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-02-26	Analyzed By:	AR
QC Batch:	88877	Sample Preparation:	2012-02-25	Prepared By:	AR
Prep Batch:	75455				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			12700	mg/Kg	100	4.00

Sample: 289734 - CS-5 Sidewall (AH-1)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-02-26	Analyzed By:	AR
QC Batch:	88877	Sample Preparation:	2012-02-25	Prepared By:	AR
Prep Batch:	75455				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			7980	mg/Kg	100	4.00

Sample: 289735 - CS-6 Sidewall (AH-1)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-02-26	Analyzed By:	AR
QC Batch:	88877	Sample Preparation:	2012-02-25	Prepared By:	AR
Prep Batch:	75455				

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

Sample: 289736 - CS-7 Sidewall (AH-2)

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-02-26	Analyzed By:	AR
QC Batch:	88877	Sample Preparation:	2012-02-25	Prepared By:	AR
Prep Batch:	75455				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2190	mg/Kg	100	4.00

Sample: 289737 - CS-8 Sidewall (AH-2)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 88877 Date Analyzed: 2012-02-26 Analyzed By: AR
Prep Batch: 75455 Sample Preparation: 2012-02-25 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			13800	mg/Kg	100	4.00

Sample: 289738 - CS-9 Sidewall (AH-3)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 88877 Date Analyzed: 2012-02-26 Analyzed By: AR
Prep Batch: 75455 Sample Preparation: 2012-02-25 Prepared By: AR

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

Sample: 289739 - CS-10 Sidewall (AH-3)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 88877 Date Analyzed: 2012-02-26 Analyzed By: AR
Prep Batch: 75455 Sample Preparation: 2012-02-25 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			3330	mg/Kg	100	4.00

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Sample: 289740 - CS-11 Sidewall (AH-3)

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 88879 Date Analyzed: 2012-02-26 Analyzed By: AR
Prep Batch: 75455 Sample Preparation: 2012-02-25 Prepared By: AR

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

Sample: 289741 - CS-12 Overspray area 0-.5'

Laboratory: Midland
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 88948 Date Analyzed: 2012-02-28 Analyzed By: tc
Prep Batch: 75509 Sample Preparation: 2012-02-28 Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.20	mg/Kg	1	2.00	110	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	1	2.00	114	63.6 - 158.9

Sample: 289741 - CS-12 Overspray area 0-.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 88879 Date Analyzed: 2012-02-26 Analyzed By: AR
Prep Batch: 75455 Sample Preparation: 2012-02-25 Prepared By: AR

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

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Sample: 289741 - CS-12 Overspray area 0-.5'

Laboratory:	Midland		
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D
QC Batch:	88939	Date Analyzed:	2012-02-28
Prep Batch:	75500	Sample Preparation:	2012-02-28
		Prep Method:	N/A
		Analyzed By:	DA
		Prepared By:	DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	u	i	118	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	49.3 - 157.5

Sample: 289741 - CS-12 Overspray area 0-.5'

Laboratory:	Midland		
Analysis:	TPH GRO	Analytical Method:	S 8015 D
QC Batch:	88950	Date Analyzed:	2012-02-29
Prep Batch:	75509	Sample Preparation:	2012-02-28
		Prep Method:	S 5035
		Analyzed By:	tc
		Prepared By:	tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	45.1 - 162.2

Sample: 289742 - CS-13 Overspray area 0-.5'

Laboratory:	Midland		
Analysis:	BTEX	Analytical Method:	S 8021B
QC Batch:	88948	Date Analyzed:	2012-02-28
Prep Batch:	75509	Sample Preparation:	2012-02-28
		Prep Method:	S 5035
		Analyzed By:	tc
		Prepared By:	tc

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

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.09	mg/Kg	1	2.00	104	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.21	mg/Kg	1	2.00	110	63.6 - 158.9

Sample: 289742 - CS-13 Overspray area 0-.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 88879 Date Analyzed: 2012-02-26 Analyzed By: AR
Prep Batch: 75455 Sample Preparation: 2012-02-25 Prepared By: AR

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

Sample: 289742 - CS-13 Overspray area 0-.5'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 88939 Date Analyzed: 2012-02-28 Analyzed By: DA
Prep Batch: 75500 Sample Preparation: 2012-02-28 Prepared By: DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr	1	853	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qnr	Qnr	199	mg/Kg	1	100	199	49.3 - 157.5

Sample: 289742 - CS-13 Overspray area 0-.5'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 88950 Date Analyzed: 2012-02-29 Analyzed By: tc
Prep Batch: 75509 Sample Preparation: 2012-02-28 Prepared By: tc

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	2.22	mg/Kg	1	2.00

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.01	mg/Kg	1	2.00	100	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.87	mg/Kg	1	2.00	94	45.1 - 162.2

Sample: 289743 - CS-14 Overspray area 0-.5'

Laboratory: Midland

Analysis: BTEX

QC Batch: 88948

Prep Batch: 75509

Analytical Method: S 8021B

Date Analyzed: 2012-02-28

Sample Preparation: 2012-02-28

Prep Method: S 5035

Analyzed By: tc

Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	63.6 - 158.9

Sample: 289743 - CS-14 Overspray area 0-.5'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 88879

Prep Batch: 75455

Analytical Method: SM 4500-Cl B

Date Analyzed: 2012-02-26

Sample Preparation: 2012-02-25

Prep Method: N/A

Analyzed By: AR

Prepared By: AR

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

Sample: 289743 - CS-14 Overspray area 0-.5'

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 88939

Prep Batch: 75500

Analytical Method: S 8015 D

Date Analyzed: 2012-02-28

Sample Preparation: 2012-02-28

Prep Method: N/A

Analyzed By: DA

Prepared By: DA

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Q _r	1	483	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q _{nr}	Q _{nr}	176	mg/Kg	1	100	176	49.3 - 157.5

Sample: 289743 - CS-14 Overspray area 0-.5'

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 88950
Prep Batch: 75509

Analytical Method: S 8015 D
Date Analyzed: 2012-02-29
Sample Preparation: 2012-02-28

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	45.1 - 162.2

Sample: 289744 - CS-15 Overspray area 0-.5'

Laboratory: Midland
Analysis: BTEX
QC Batch: 88948
Prep Batch: 75509

Analytical Method: S 8021B
Date Analyzed: 2012-02-28
Sample Preparation: 2012-02-28

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

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.62	mg/Kg	1	2.00	131	75 - 135.4
4-Bromofluorobenzene (4-BFB)			2.69	mg/Kg	1	2.00	134	63.6 - 158.9

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Sample: 289744 - CS-15 Overspray area 0-.5'

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 88879 Date Analyzed: 2012-02-26 Analyzed By: AR
Prep Batch: 75455 Sample Preparation: 2012-02-25 Prepared By: AR

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

Sample: 289744 - CS-15 Overspray area 0-.5'

Laboratory: Midland
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 88939 Date Analyzed: 2012-02-28 Analyzed By: DA
Prep Batch: 75500 Sample Preparation: 2012-02-28 Prepared By: DA

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	qr	i	145	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			111	mg/Kg	1	100	111	49.3 - 157.5

Sample: 289744 - CS-15 Overspray area 0-.5'

Laboratory: Midland
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 88950 Date Analyzed: 2012-02-29 Analyzed By: tc
Prep Batch: 75509 Sample Preparation: 2012-02-28 Prepared By: tc

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.26	mg/Kg	1	2.00	113	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			2.12	mg/Kg	1	2.00	106	45.1 - 162.2

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Method Blanks

Method Blank (1) QC Batch: 88877

QC Batch: 88877 Date Analyzed: 2012-02-26 Analyzed By: AR
Prep Batch: 75455 QC Preparation: 2012-02-25 Prepared By: AR

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

Method Blank (1) QC Batch: 88879

QC Batch: 88879 Date Analyzed: 2012-02-26 Analyzed By: AR
Prep Batch: 75455 QC Preparation: 2012-02-25 Prepared By: AR

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

Method Blank (1) QC Batch: 88939

QC Batch: 88939 Date Analyzed: 2012-02-28 Analyzed By: DA
Prep Batch: 75500 QC Preparation: 2012-02-28 Prepared By: DA

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			96.6	mg/Kg	1	100	97	52 - 140.8

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Method Blank (1) QC Batch: 88948

QC Batch: 88948
Prep Batch: 75509

Date Analyzed: 2012-02-28
QC Preparation: 2012-02-28

Analyzed By: tc
Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00470	mg/Kg	0.02
Toluene		1	<0.00980	mg/Kg	0.02
Ethylbenzene		1	<0.00500	mg/Kg	0.02
Xylene		1	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.17	mg/Kg	1	2.00	108	78 - 123.6
4-Bromofluorobenzene (4-BFB)			2.13	mg/Kg	1	2.00	106	55.9 - 112.4

Method Blank (1) QC Batch: 88950

QC Batch: 88950
Prep Batch: 75509

Date Analyzed: 2012-02-29
QC Preparation: 2012-02-28

Analyzed By: tc
Prepared By: tc

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.08	mg/Kg	1	2.00	104	78.6 - 109
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	58 - 100

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 88877
Prep Batch: 75455

Date Analyzed: 2012-02-26
QC Preparation: 2012-02-25

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			93.9	mg/Kg	1	100	<3.85	94	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			102	mg/Kg	1	100	<3.85	102	85 - 115	8	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: 88879
Prep Batch: 75455

Date Analyzed: 2012-02-26
QC Preparation: 2012-02-25

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			96.2	mg/Kg	1	100	<3.85	96	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			107	mg/Kg	1	100	<3.85	107	85 - 115	11	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: 88939
Prep Batch: 75500

Date Analyzed: 2012-02-28
QC Preparation: 2012-02-28

Analyzed By: DA
Prepared By: DA

Report Date: February 29, 2012
114-6401144

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	189	mg/Kg	1	250	<14.5	76	62 - 128.3

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	192	mg/Kg	1	250	<14.5	77	62 - 128.3	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-Tricosane	85.2	87.7	mg/Kg	1	100	85	88	58.6 - 149.6

Laboratory Control Spike (LCS-1)

QC Batch: 88948
Prep Batch: 75509

Date Analyzed: 2012-02-28
QC Preparation: 2012-02-28

Analyzed By: tc
Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.14	mg/Kg	1	2.00	<0.00470	107	86.5 - 124.9
Toluene		1	1.98	mg/Kg	1	2.00	<0.00980	99	84.7 - 122.5
Ethylbenzene		1	1.91	mg/Kg	1	2.00	<0.00500	96	79.4 - 118.9
Xylene		1	5.76	mg/Kg	1	6.00	<0.0170	96	79.5 - 118.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.20	mg/Kg	1	2.00	<0.00470	110	86.5 - 124.9	3	20
Toluene		1	2.01	mg/Kg	1	2.00	<0.00980	100	84.7 - 122.5	2	20
Ethylbenzene		1	1.97	mg/Kg	1	2.00	<0.00500	98	79.4 - 118.9	3	20
Xylene		1	5.86	mg/Kg	1	6.00	<0.0170	98	79.5 - 118.9	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)	1.97	2.13	mg/Kg	1	2.00	98	106	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.15	2.30	mg/Kg	1	2.00	108	115	70.4 - 119

Report Date: February 29, 2012
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Laboratory Control Spike (LCS-1)

QC Batch: 88950
Prep Batch: 75509

Date Analyzed: 2012-02-29
QC Preparation: 2012-02-28

Analyzed By: tc
Prepared By: tc

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.2	mg/Kg	1	20.0	<1.22	86	68.3 - 105.7

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.1	mg/Kg	1	20.0	<1.22	90	68.3 - 105.7	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)	2.13	2.18	mg/Kg	1	2.00	106	109	80 - 111.2
4-Bromofluorobenzene (4-BFB)	2.05	2.04	mg/Kg	1	2.00	102	102	66.4 - 106.6

Matrix Spike (MS-1) Spiked Sample: 289739

QC Batch: 88877
Prep Batch: 75455

Date Analyzed: 2012-02-26
QC Preparation: 2012-02-25

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			12700	mg/Kg	100	10000	3330	94	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			13500	mg/Kg	100	10000	3330	102	79.4 - 120.6	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: 289749

QC Batch: 88879
Prep Batch: 75455

Date Analyzed: 2012-02-26
QC Preparation: 2012-02-25

Analyzed By: AR
Prepared By: AR

Report Date: February 29, 2012
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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			12600	mg/Kg	100	10000	3400	92	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			13800	mg/Kg	100	10000	3400	104	79.4 - 120.6	9	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: 289744

QC Batch: 88939
Prep Batch: 75500

Date Analyzed: 2012-02-28
QC Preparation: 2012-02-28

Analyzed By: DA
Prepared By: DA

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO			342	mg/Kg	1	250	145	79	45.5 - 127

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qr	Qr	263	mg/Kg	1	250	145	47	45.5 - 127	26	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	108	106	mg/Kg	1	100	108	106	45.4 - 145.8

Matrix Spike (MS-1) Spiked Sample: 289743

QC Batch: 88948
Prep Batch: 75509

Date Analyzed: 2012-02-28
QC Preparation: 2012-02-28

Analyzed By: tc
Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene			2.15	mg/Kg	1	2.00	<0.00470	108	69.3 - 159.2
Toluene			2.07	mg/Kg	1	2.00	<0.00980	104	68.7 - 157
Ethylbenzene			2.14	mg/Kg	1	2.00	<0.00500	107	71.6 - 158.2
Xylene			6.41	mg/Kg	1	6.00	<0.0170	107	70.8 - 159.8

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

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.45	mg/Kg	1	2.00	<0.00470	122	69.3 - 159.2	13	20
Toluene		1	2.34	mg/Kg	1	2.00	<0.00980	117	68.7 - 157	12	20
Ethylbenzene		1	2.36	mg/Kg	1	2.00	<0.00500	118	71.6 - 158.2	10	20
Xylene		1	7.11	mg/Kg	1	6.00	<0.0170	118	70.8 - 159.8	10	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)	2.33	1.82	mg/Kg	1	2	116	91	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	2.50	1.99	mg/Kg	1	2	125	100	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 289744

QC Batch: 88950
Prep Batch: 75509

Date Analyzed: 2012-02-29
QC Preparation: 2012-02-28

Analyzed By: tc
Prepared By: tc

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	13.3	mg/Kg	1	20.0	1.3935	60	28.2 - 157.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.3	mg/Kg	1	20.0	1.3935	64	28.2 - 157.2	7	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)	2.14	2.17	mg/Kg	1	2	107	108	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	2.18	2.25	mg/Kg	1	2	109	112	77.9 - 122.4

Calibration Standards

Standard (ICV-1)

QC Batch: 88877 Date Analyzed: 2012-02-26 Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-02-26

Standard (CCV-1)

QC Batch: 88877 Date Analyzed: 2012-02-26 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-02-26

Standard (ICV-1)

QC Batch: 88879 Date Analyzed: 2012-02-26 Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-02-26

Standard (CCV-1)

QC Batch: 88879 Date Analyzed: 2012-02-26 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-02-26

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Standard (CCV-1)

QC Batch: 88939

Date Analyzed: 2012-02-28

Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	264	106	80 - 120	2012-02-28

Standard (CCV-2)

QC Batch: 88939

Date Analyzed: 2012-02-28

Analyzed By: DA

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	229	92	80 - 120	2012-02-28

Standard (CCV-1)

QC Batch: 88948

Date Analyzed: 2012-02-28

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.116	116	80 - 120	2012-02-28
Toluene		1	mg/kg	0.100	0.105	105	80 - 120	2012-02-28
Ethylbenzene		1	mg/kg	0.100	0.101	101	80 - 120	2012-02-28
Xylene		1	mg/kg	0.300	0.304	101	80 - 120	2012-02-28

Standard (CCV-2)

QC Batch: 88948

Date Analyzed: 2012-02-28

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.118	118	80 - 120	2012-02-28
Toluene		1	mg/kg	0.100	0.107	107	80 - 120	2012-02-28
Ethylbenzene		1	mg/kg	0.100	0.103	103	80 - 120	2012-02-28
Xylene		1	mg/kg	0.300	0.311	104	80 - 120	2012-02-28

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114-6401144

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Standard (CCV-3)

QC Batch: 88948

Date Analyzed: 2012-02-28

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.118	118	80 - 120	2012-02-28
Toluene		1	mg/kg	0.100	0.111	111	80 - 120	2012-02-28
Ethylbenzene		1	mg/kg	0.100	0.107	107	80 - 120	2012-02-28
Xylene		1	mg/kg	0.300	0.320	107	80 - 120	2012-02-28

Standard (CCV-1)

QC Batch: 88950

Date Analyzed: 2012-02-29

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.03	103	80 - 120	2012-02-29

Standard (CCV-2)

QC Batch: 88950

Date Analyzed: 2012-02-29

Analyzed By: tc

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.07	107	80 - 120	2012-02-29

Appendix

Report Definitions

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

Laboratory Certifications

	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-11-3	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and SQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

Analysis Request of Chain of Custody Record



TETRA TECH

1910 N. Big Spring St.

Midland, Texas 79705

(432) 682-4559 • Fax (432) 682-3946

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ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavaraz

PROJECT NO.:
114-6401144

PROJECT NAME:
Holder CB Federal Paddock TB
Eddy county

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD				BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/508	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
									HCL	HNO3	ICE	NONE																	
289730	2/16/12		S	X		CS-1 Bottom Hole 3' (AH-1)	1				X														X				
731	2/16/12		S	X		CS-2 Bottom Hole 1' (AH-2)	1				X														X				
732	2/17/12		S	X		CS-3 Bottom Hole 2' (AH-3)	1				X														X				
733	2/16/12		S	X		CS-4 sidewall (AH-1)	1				X														X				
734	2/16/12		S	X		CS-5 sidewall (AH-1)	1				X														X				
735	2/16/12		S	X		CS-6 sidewall (AH-1)	1				X														X				
736	2/16/12		S	X		CS-7 sidewall (AH-2)	1				X														X				
737	2/16/12		S	X		CS-8 sidewall (AH-2)	1				X														X				
738	2/17/12		S	X		CS-9 sidewall (AH-3)	1				X														X				
739	2/16/12		S	X		CS-10 sidewall (AH-3)	1				X														X				

RELINQUISHED BY: (Signature) Brian Schuyler Date: 2/19/12 Time: 1300

RECEIVED BY: (Signature) Ike Tavaraz Date: 2/23/12 Time: 12:00pm

SAMPLED BY: (Print & Initial) Brian Schuyler Date: 2/17/12 Time: 1200

RELINQUISHED BY: (Signature) Brian Schuyler Date: 2/23/12 Time: 12:00pm

RECEIVED BY: (Signature) Ike Tavaraz Date: 2/23/12 Time: 12:00pm

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS OTHER: None

RELINQUISHED BY: (Signature) Brian Schuyler Date: 2/23/12 Time: 12:00pm

RECEIVED BY: (Signature) Ike Tavaraz Date: 2/23/12 Time: 12:00pm

TETRA TECH CONTACT PERSON: Ike Tavaraz Results by: None

RECEIVING LABORATORY: ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE: DATE: TIME:

REMARKS: del test - Midland

SAMPLE CONDITION WHEN RECEIVED: 84 intact

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: CCG

SITE MANAGER:
Ike Taveraz

PROJECT NO.:
114-6401144

PROJECT NAME: Holder CB Federal Paddock TB

[illegible]

RELINQUISHED BY: (Signature)	Date: 2/19/12
<i>Eric Blum</i>	Time: 1350
RELINQUISHED BY: (Signature)	Date:
	Time:
RELINQUISHED BY: (Signature)	Date: 2/23/12
<i>[Signature]</i>	Time: 13:21

RECEIVED BY: (Signature)	Date: _____
	Time: _____
RECEIVED BY: (Signature)	Date: <u>5/23/12</u>
	Time: <u>12:26</u>
RECEIVED BY: (Signature)	Date: <u>5/23/12</u>
	Time: _____

SAMPLED BY: (Print & Initial) <i>Bo. H. W. Schaefer</i>		Date: <i>2/12/78</i>
SAMPLE SHIPPED BY: (Circle) FEDEX BUS		Time: <i>1700</i>
HAND DELIVERED UPS		AIRBILL #: _____
TETRA TECH CONTACT PERSON: _____		OTHER: _____
_____		Results by: _____

RECEIVING LABORATORY: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____
CONTACT: _____ PHONE: _____

RECEIVED BY: (Signature) _____

DATE: _____ TIME: _____

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

SAMPLE CONDITION WHEN RECEIVED:
8.40 intact

REMARKS: All tests Midland

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