SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	**Burch Kelly Unit # 632 Injection Line**				
Company:	**COG Operating LLC**				
Section, Township and Range	**Unit M**	**Sec 24**	**T17S**	**R29E**	
Lease Number:	**(API#) 30-015-40327**				
County:	**Eddy County**				
GPS:	**32.81479° N**			**104.03448° W**	
Surface Owner:	Federal				
Mineral Owner:					
Directions:	From the intersection of Hwy 260 and Hwy 82, turn right and travel west for approximatly 7.8 miles. Turn right crossing the cattle guard and make an left on the caliche road. Travel 0.29 miles on the caliche road and arrive at the location on the right.				

Release Data:

Date Released:	1/8/2013
Type Release:	Produced Water
Source of Contamination:	Injection Line
Fluid Released:	40 bbls
Fluids Recovered:	35 bbls

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AUG 23 2013
NMOCD ARTESIA

Official Communication:

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

Ranking Criteria

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

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

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

Total Ranking Score:	**0**

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

TETRA TECH

July 8, 2013

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Closure Report for the COG Operating LLC., Burch Kelly Unit # 632 Injection Line, Unit M, Section 24, Township 17 South, Range 29 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 Burch Kelly Unit # 632 Injection Line, located in Unit M, Section 24, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.81479°, W 104.03448°. 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 January 8, 2013, and released approximately forty (40) barrels of produced water from an injection line. Thirty five (35) barrels of produced water were recovered. The leak was caused by an auger truck installing an electrical pole near the fiberglass line. COG has repaired the line. The spill affected an area of approximately 20' x 60' on the pad. The final C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 24. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 150' below surface. The groundwater data is shown in Appendix A.

Regulatory

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

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

(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 February 12, 2013, Tetra Tech personnel inspected and sampled the spill area. Two (2) auger holes (AH-1and AH-2) 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, AH-1 and AH-2 did not show concentrations above the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in the auger holes. Auger hole (AH-1) showed declining chloride concentrations with depth with bottom auger hole sample of 1,970 mg/kg at 1.5-2.0' below surface. The area of AH-1 was not vertically defined. The chloride impact in the area of AH-2 showed a shallow impact of 4,950 mg/kg at 0-1' below surface and declining to 742 mg/kg at 1-1.5' below surface. Deeper samples were not collected due to the dense caliche formation.

Site Remediation and Conclusion

On May 10, 2013, Tetra Tech personnel supervised the excavation of the impacted soils. A trench (T-1) was installed in the area of AH-1 to further delineate the vertical extent of the chloride impact. Referring to Table 1, the confirmation trench samples not show any elevated chloride impacts at 4.0' below surface.

In order to remove the chloride impact, the excavation depths ranged from 2.0' to 3.0' below surface. Bottom hole and sidewall confirmation samples were collected in the excavation and confirmed that the chloride impact was removed. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. Approximately 240 cubic yards^3 of soil were removed and transported to R360 facility for proper disposal. Once approved by the BLM, the site was then backfilled with clean material to surface grade, ripped and seeded.

TETRA TECH

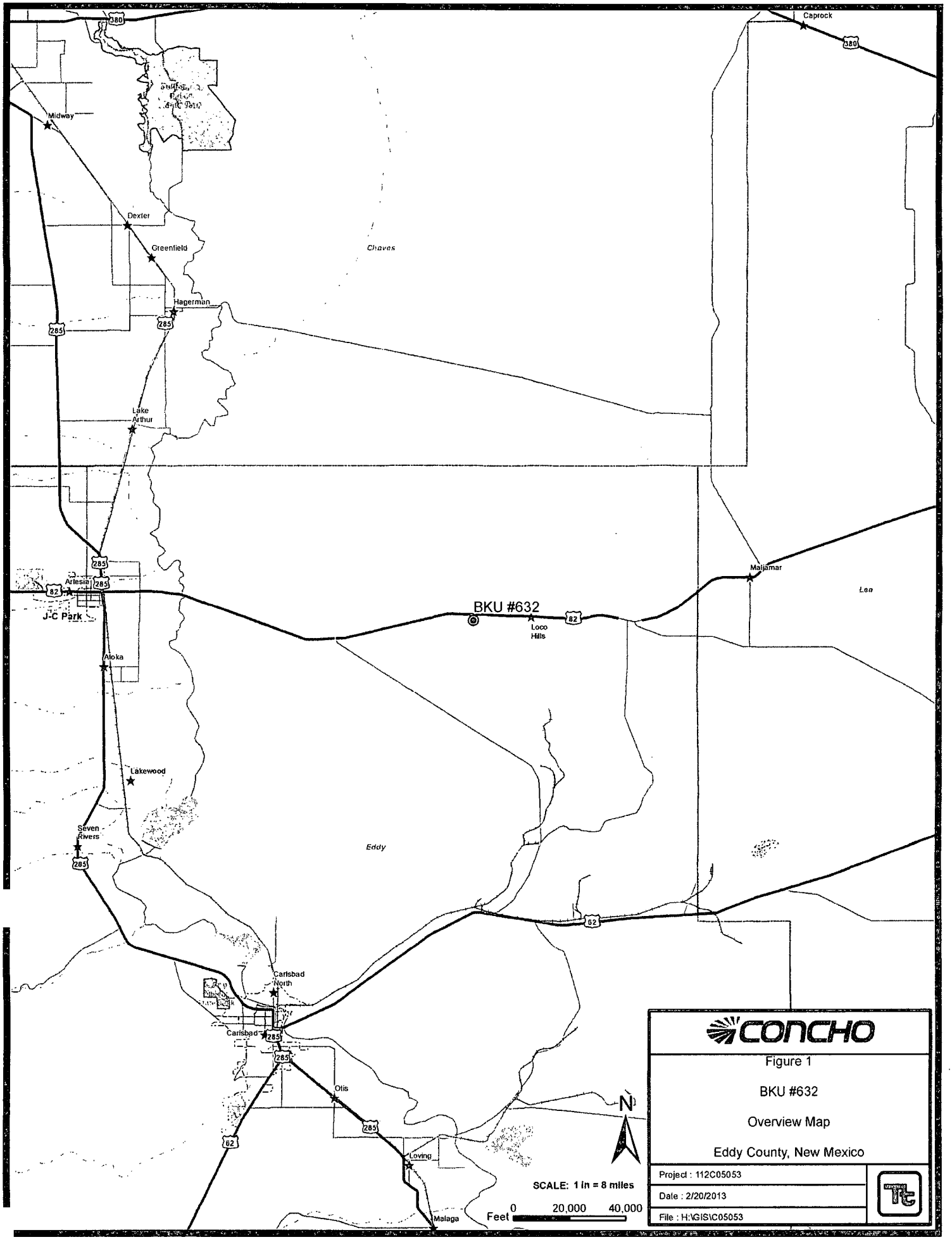
Based on the remediation activities performed at this location, COG requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

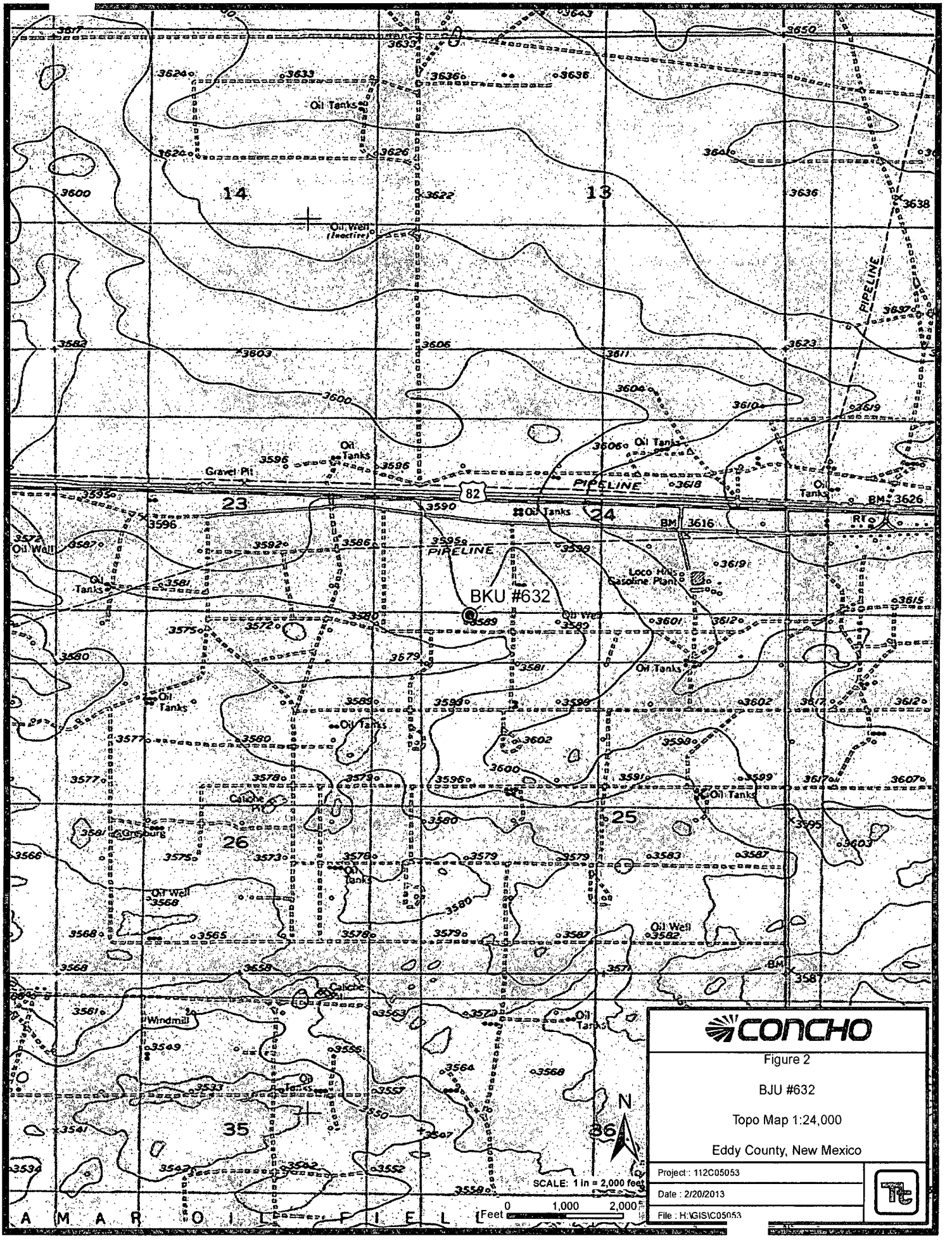
Ike Tavarez, PG
Senior Project Manager

cc: Pat Ellis – COG
Jim Amos - BLM

FIGURES



Drawn By: Isabel Marmolejo



CONCHO

Figure 2

BJU #632

Topo Map 1:24,000

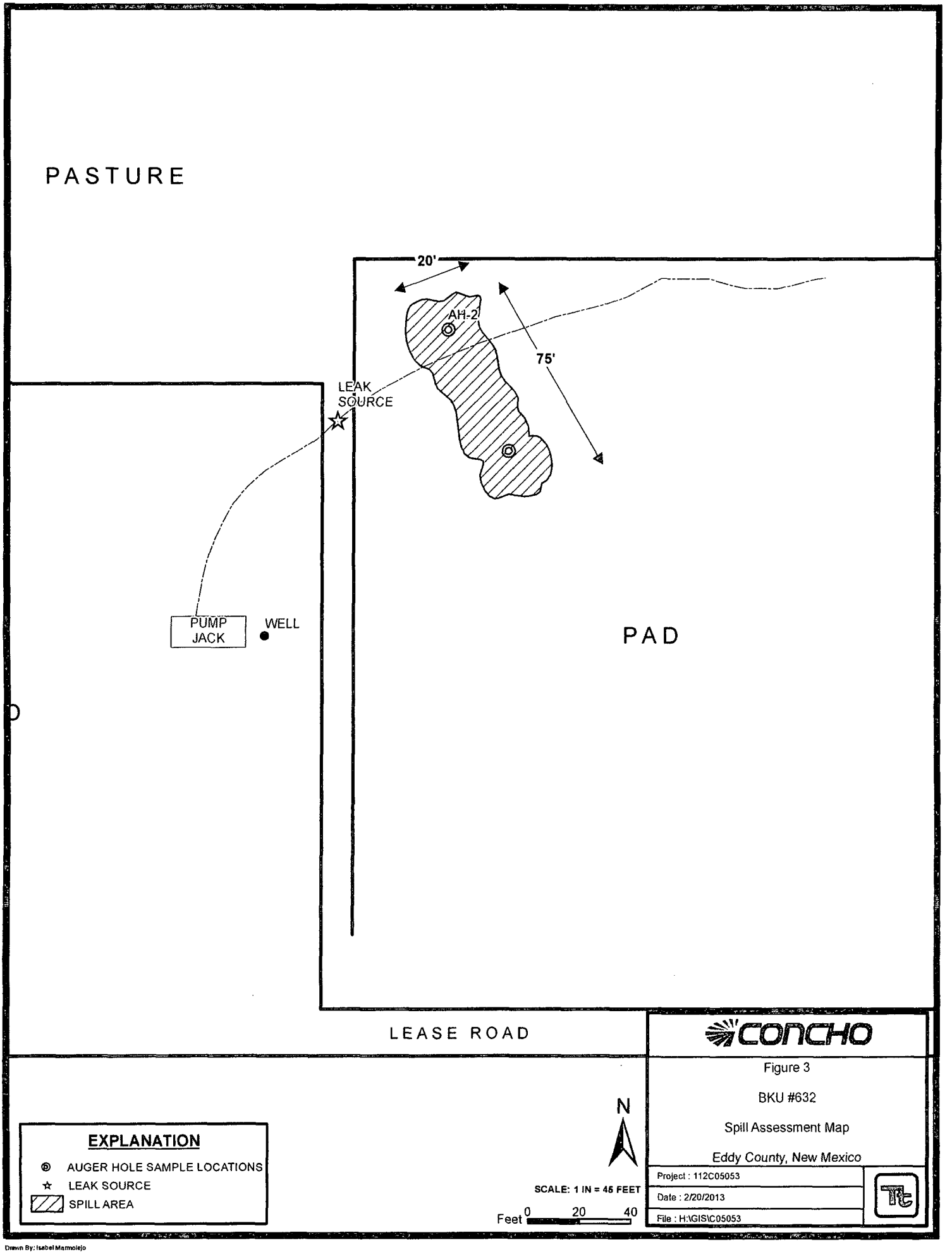
Eddy County, New Mexico

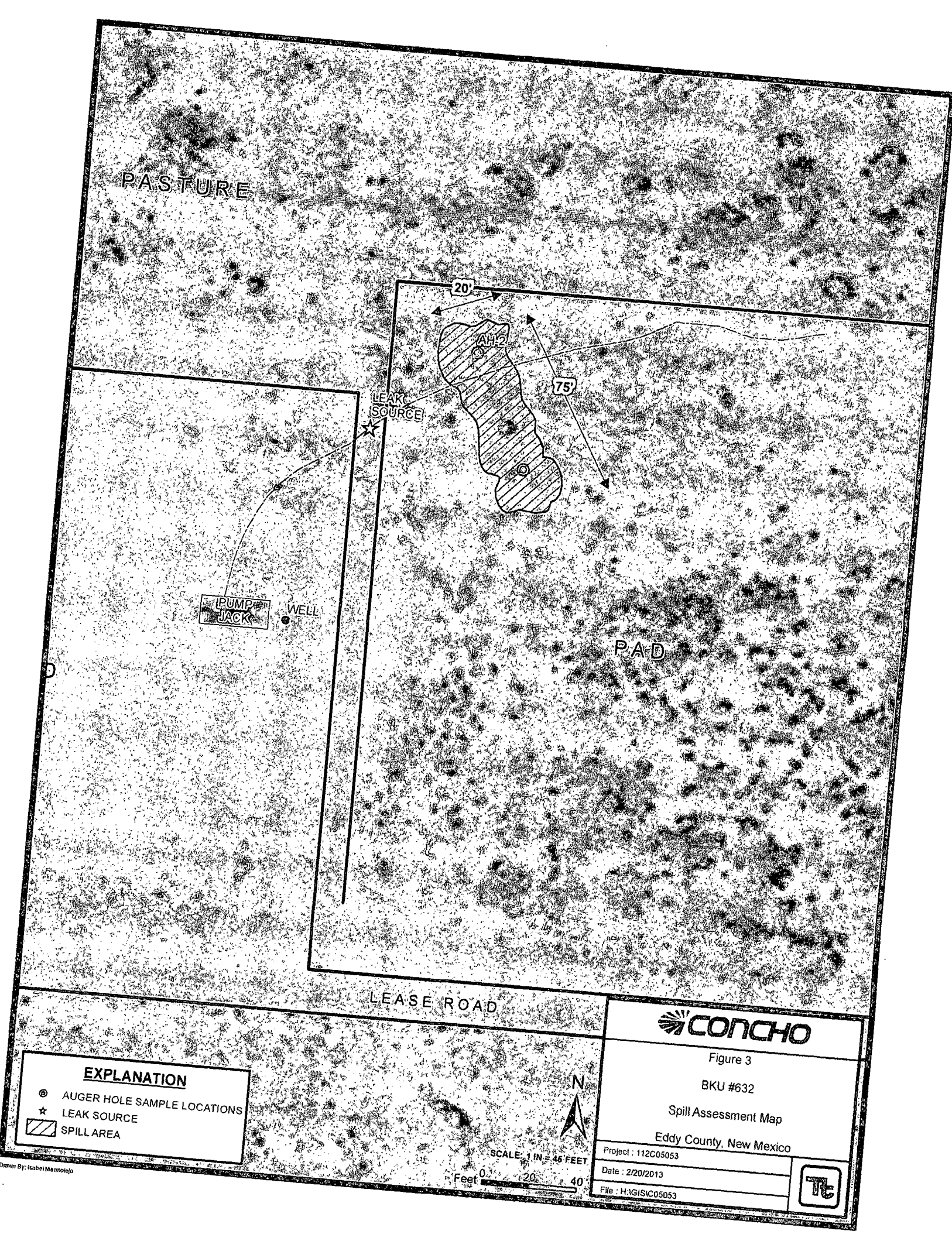
Project : 112C05053

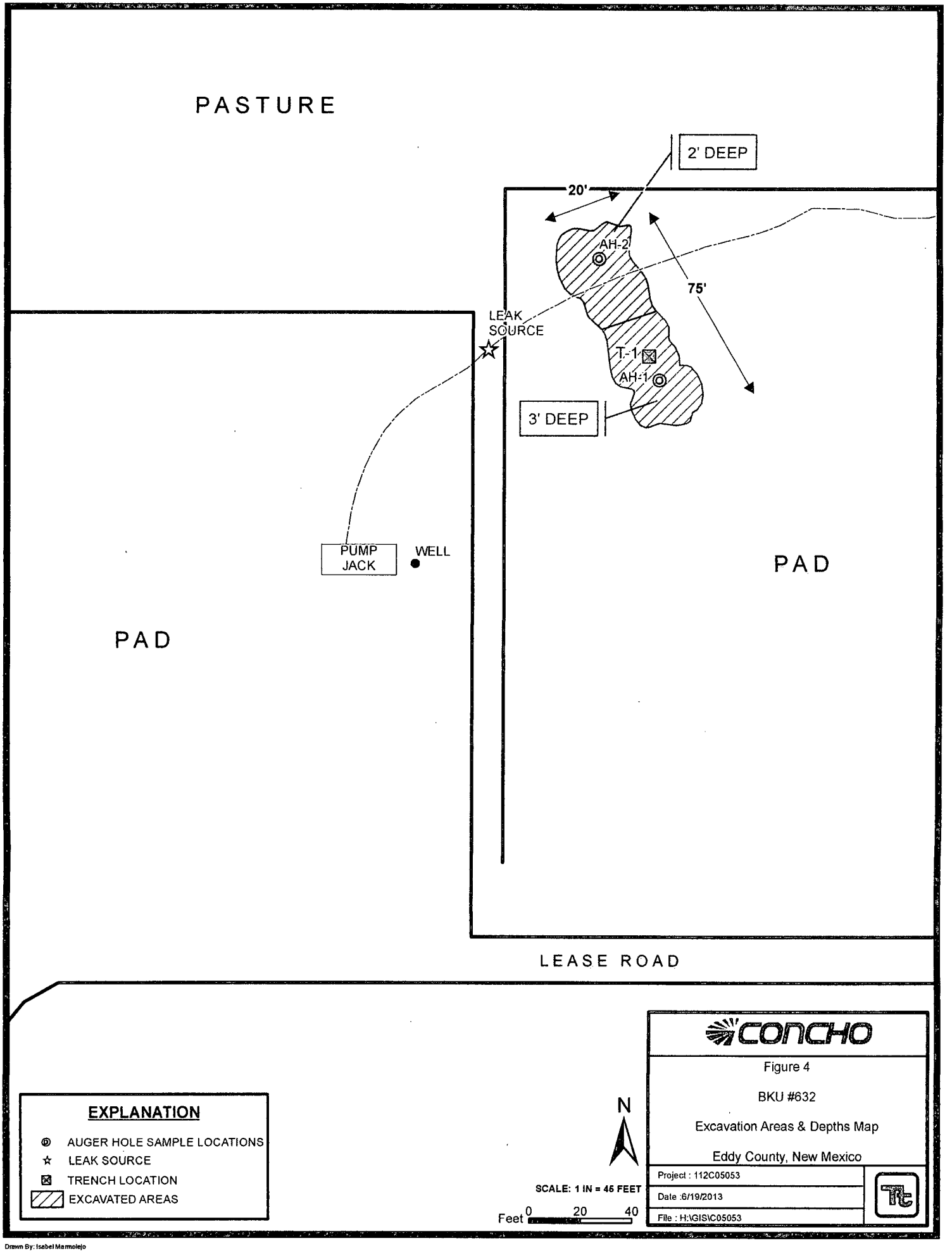
Date : 2/20/2013

File : H:\GIS\C05053

Drawn By: Isabel Marmolejo


PASTURE
20'
AH-2
75'
LEAK SOURCE
PUMP JACK
WELL
PAD
LEASE ROAD
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
SPILL AREA
N
SCALE: 1 IN = 45 FEET
Feet 0 20 40
CONCHO
Figure 3
BKU #632
Spill Assessment Map
Eddy County, New Mexico
Project : 112C05053
Date : 2/20/2013
File : H:\GIS\C05053
Drawn By: Isabel Marmolejo

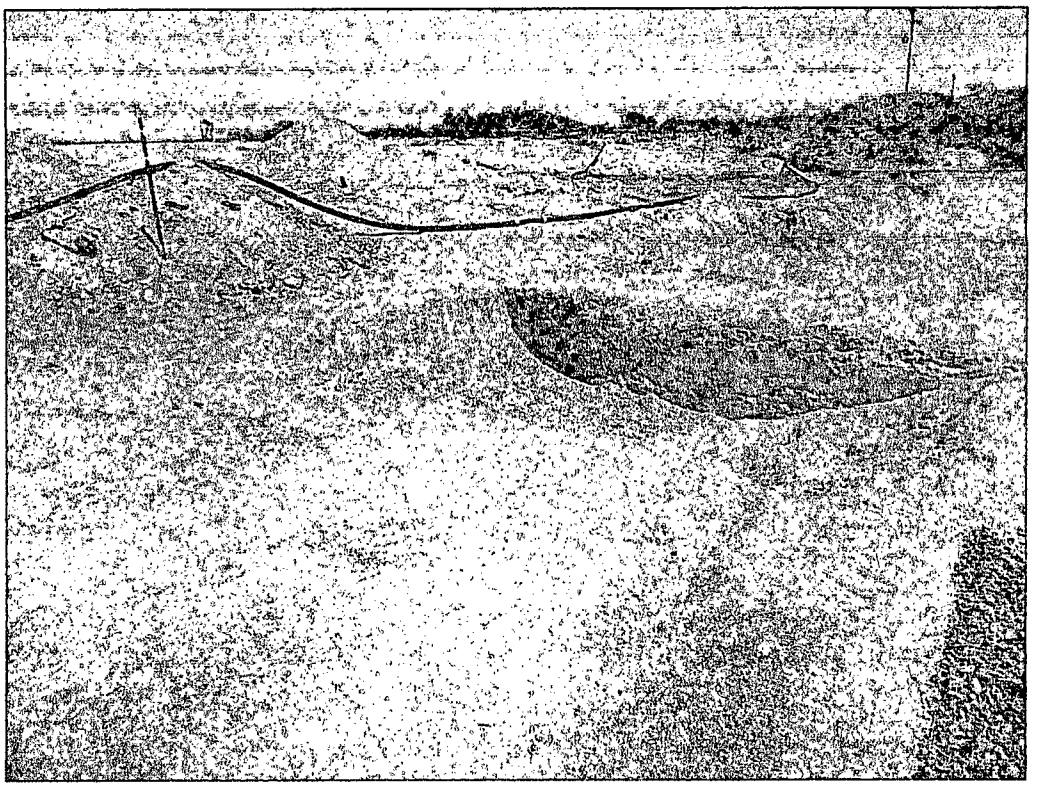

PASTURE
20'
AH-2
75'
LEAK SOURCE
PUMP JACK
WELL
PAD
LEASE ROAD
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
SPILL AREA
N
SCALE: 1 IN = 40 FEET
Feet 0 20 40
CONCHO
Figure 3
BKU #632
Spill Assessment Map
Eddy County, New Mexico
Project : 112C05053
Date : 2/20/2013
File : H:\GIS\C05053
Drawn By: Isabel Marmolejo


PASTURE
2' DEEP
20'
AH-2
75'
LEAK
SOURCE
T-1
AH-1
3' DEEP
PUMP
JACK
WELL
PAD
PAD
LEASE ROAD
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
TRENCH LOCATION
EXCAVATED AREAS
N
SCALE: 1 IN = 45 FEET
Feet 0 20 40
CONCHO
Figure 4
BKU #632
Excavation Areas & Depths Map
Eddy County, New Mexico
Project : 112C05053
Date :6/19/2013
File : H:\GIS\C05053
Drawn By: Isabel Marmolejo

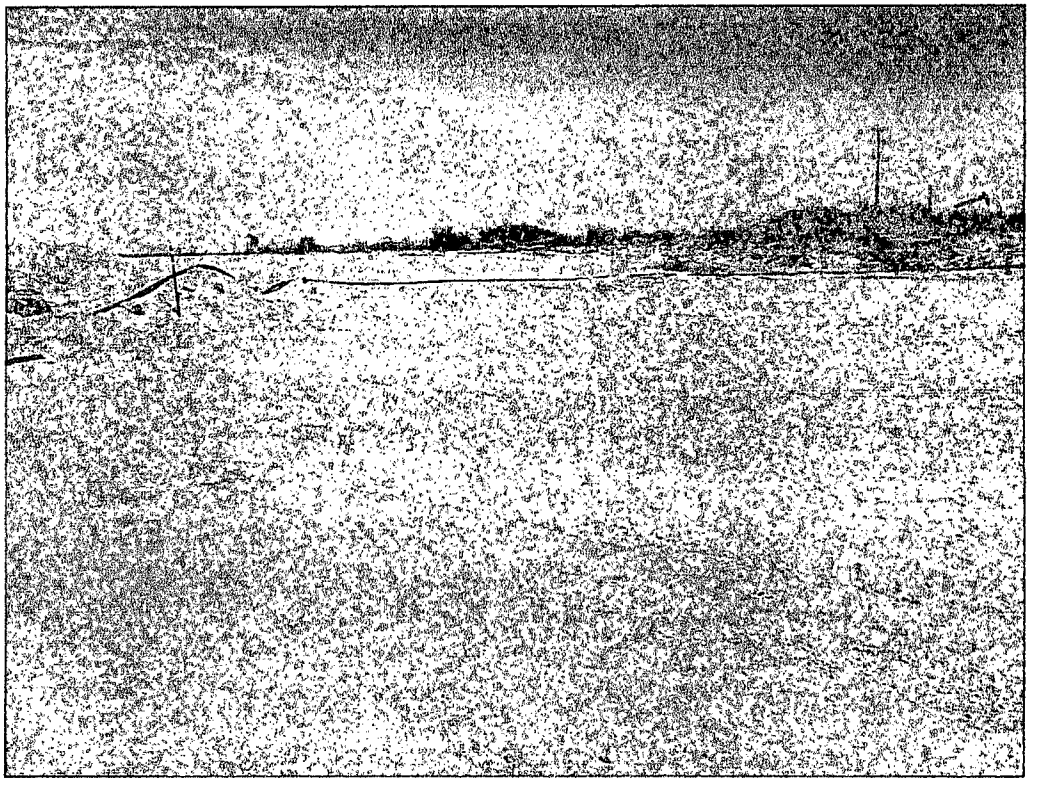
PHOTOGRAPHS

COG Operating LLC
Burch Keely Unit #632
Eddy County, New Mexico

TETRA TECH



View Northwest– Excavated areas of AH-1 and AH-2.



View Northwest – Backfill

TABLES

Table 1
COG Operating LLC.
Birch Keely Unit #632
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	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-1	2/12/2013	0-1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,290
	"	1-1.5		X	-	-	-	-	-	-	-	-	2,030
	"	1.5-2		X	-	-	-	-	-	-	-	-	1,970
CS-1 South Wall	5/13/2013	-	X		-	-	-	-	-	-	-	-	192
CS-1 East Wall	"	-	X		-	-	-	-	-	-	-	-	622
CS-1 West Wall	"	-	X		-	-	-	-	-	-	-	-	1,410
CS-1 Bottom Hole	"	-	X		-	-	-	-	-	-	-	-	243
T-1	5/9/2013	0		X	-	-	-	-	-	-	-	-	1,670
	"	2		X	-	-	-	-	-	-	-	-	1,040
	"	4	X		-	-	-	-	-	-	-	-	759
	"	6	X		-	-	-	-	-	-	-	-	646
	"	8	X		-	-	-	-	-	-	-	-	220
	"	10	X		-	-	-	-	-	-	-	-	<20.0
	"	12	X		-	-	-	-	-	-	-	-	25.3
AH-2	2/12/2013	0-1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	4,950
	"	1-1.5		X	-	-	-	-	-	-	-	-	742
CS-2 North Wall	5/9/2013	-	X		-	-	-	-	-	-	-	-	111
CS-2 East Wall	"	-	X		-	-	-	-	-	-	-	-	607
CS-2 West Wall	"	-	X		-	-	-	-	-	-	-	-	223
CS-2 Bottom Hole	"	-	X		-	-	-	-	-	-	-	-	132

(-) Not Analyzed

Excavated Depths

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

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AUG 23 2013
NMOCD ARTESIA

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	**600 W. Illinois Ave. Midland, Texas 79701**	Telephone No.	**(432) 230-0077**
Facility Name	**Burch Keely Unit # 632**	Facility Type	**Well Pad**

Surface Owner: Federal	Mineral Owner	Lease No. (API#) 30-015-40327

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	24	17S	29E					Eddy

Latitude N 32 48.855° **Longitude** W 104 02.066°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 40 bbls	Volume Recovered 35 bbls
Source of Release: BKU #112 Injection Line	Date and Hour of Occurrence 01/08/2013	Date and Hour of Discovery 01/08/2012 10:00 AM
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour 12/31/2012 9:30 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Dean's Electric was drilling a hole to set an electrical pole and hit a fiberglass injection line. The line has been replaced.

Describe Area Affected and Cleanup Action Taken.*

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

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 7-8-13 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

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	600 West Illinois Avenue, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Burch Keely Unit #632	Facility Type	Well pad

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-015-40327

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	24	17S	29E					Eddy

Latitude 32 48.855 **Longitude** 104 02.066

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 40bbls	Volume Recovered 35bbls
Source of Release BKU #112 injection line	Date and Hour of Occurrence 01/08/2013	Date and Hour of Discovery 01/08/2013 10:00 a.m.
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Dean's Electric was drilling hole to set an electrical pole and hit a fiberglass injection line. The line has been replaced.

Describe Area Affected and Cleanup Action Taken.*

Initially 40bbls of produced water were released from the injection line and we were able to recover 35bbls with a vacuum truck. All free fluid has been recovered. The spill was contained on the well pad adjacent to where the injection line was hit in an area of 20' x 60'. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a 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: Senior Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@concho.com	Conditions of Approval:	Attached ☐
Date: 01/22/2013 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
COG - Burch Keely Unit # 632
Eddy County, New Mexico

16 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 **61**	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 220 dry	13
19 **110**	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 30 East

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

17 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **79**	23	24
30	29	28	27	26	25
31	32	33	34	35 **258**	36

17 South 29 East

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

17 South 30 East

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

18 South 28 East

6	5	4 **108**	3	2	1
7 **49**	8 **69**	9	10	11	12
18	17	16	15	14	13
19	20	21 **226**	22	23	24
49	29	28	27	26	25
31	32	33	34	35 **65**	36

18 South 29 East

6	5	4	3	2	1
7	8	9	10 **95**	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

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

APPENDIX C

Summary Report

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

Report Date: February 25, 2013

Work Order: 13021532

Project Location: Eddy Co., NM
Project Name: COG/Birch Kelly Unit #632
Project Number: 112C05053

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
321287	AH-1 (0-1')	soil	2013-02-12	00:00	2013-02-15
321288	AH-1 (1-1.5')	soil	2013-02-12	00:00	2013-02-15
321289	AH-1 (1.5-2')	soil	2013-02-12	00:00	2013-02-15
321290	AH-2 (0-1')	soil	2013-02-12	00:00	2013-02-15
321291	AH-2 (1-1.5')	soil	2013-02-12	00:00	2013-02-15

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
321287 - AH-1 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Qs
321290 - AH-2 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Qs

Sample: 321287 - AH-1 (0-1')

Param	Flag	Result	Units	RL
Chloride		**2290**	mg/Kg	4

Sample: 321288 - AH-1 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**2030**	mg/Kg	4

Sample: 321289 - AH-1 (1.5-2')

Param	Flag	Result	Units	RL
Chloride		**1970**	mg/Kg	4

Sample: 321290 - AH-2 (0-1')

Param	Flag	Result	Units	RL
Chloride		**4950**	mg/Kg	4

Sample: 321291 - AH-2 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		**742**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.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 25, 2013

Work Order: 13021532

Project Location: Eddy Co., NM
Project Name: COG/Birch Kelly Unit #632
Project Number: 112C05053

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
321287	AH-1 (0-1')	soil	2013-02-12	00:00	2013-02-15
321288	AH-1 (1-1.5')	soil	2013-02-12	00:00	2013-02-15
321289	AH-1 (1.5-2')	soil	2013-02-12	00:00	2013-02-15
321290	AH-2 (0-1')	soil	2013-02-12	00:00	2013-02-15
321291	AH-2 (1-1.5')	soil	2013-02-12	00:00	2013-02-15

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

Blair Leftwich

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

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Case Narrative

Samples for project COG/Birch Kelly Unit #632 were received by TraceAnalysis, Inc. on 2013-02-15 and assigned to work order 13021532. Samples for work order 13021532 were received intact at a temperature of 2.2 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	83915	2013-02-18 at 10:00	99045	2013-02-18 at 10:00
Chloride (Titration)	SM 4500-Cl B	84061	2013-02-21 at 12:58	99229	2013-02-25 at 15:59
Chloride (Titration)	SM 4500-Cl B	84061	2013-02-21 at 12:58	99230	2013-02-25 at 16:00
TPH DRO - NEW	S 8015 D	83905	2013-02-18 at 08:00	99035	2013-02-19 at 08:53
TPH GRO	S 8015 D	83915	2013-02-18 at 10:00	99047	2013-02-18 at 10:00

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13021532 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 321287 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

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)	QSR	QSR	2.20	mg/Kg	1	2.00	110	79.5 - 108
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	71.4 - 108

Sample: 321287 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2290**	mg/Kg	10	4.00

Sample: 321287 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			70.8	mg/Kg	1	100	71	70 - 130

Sample: 321287 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs,U		<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Sample: 321288 - AH-1 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99230	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2030**	mg/Kg	10	4.00

Sample: 321289 - AH-1 (1.5-2')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99230	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

continued ...

sample 321289 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1970**	mg/Kg	10	4.00

Sample: 321290 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

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)	Qsr	Qsr		2.18	mg/Kg	1	2.00	109	79.5 - 108
4-Bromofluorobenzene (4-BFB)				2.02	mg/Kg	1	2.00	101	71.4 - 108

Sample: 321290 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99230	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4950**	mg/Kg	10	4.00

Sample: 321290 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

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

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

Sample: 321290 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs,U	1	<4.00	mg/Kg	1	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		3.01	mg/Kg	1	2.00	150	70 - 130
4-Bromofluorobenzene (4-BFB)				1.99	mg/Kg	1	2.00	100	70 - 130

Sample: 321291 - AH-2 (1-1.5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99230	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**742**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 99035

QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	QC Preparation:	2013-02-18	Prepared By:	CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	8.53	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Method Blank (1) QC Batch: 99045

QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	QC Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00810	mg/Kg	0.02
Toluene		1	<0.00750	mg/Kg	0.02
Ethylbenzene		1	<0.00730	mg/Kg	0.02
Xylene		1	<0.00700	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	2.21	mg/Kg	1	2.00	110	79.5 - 108
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	71.4 - 108

Method Blank (1) QC Batch: 99047

QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	QC Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO			<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.66	mg/Kg	1	2.00	83	70 - 130
4-Bromofluorobenzene (4-BFB)			2.05	mg/Kg	1	2.00	102	70 - 130

Method Blank (1) QC Batch: 99229

QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	QC Preparation:	2013-02-21	Prepared By:	AR

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

Method Blank (1) QC Batch: 99230

QC Batch:	99230	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	QC Preparation:	2013-02-21	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW
Prep Batch: 83905 | QC Preparation: 2013-02-18 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	298	mg/Kg	1	250	8.53	116	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
DRO		1	268	mg/Kg	1	250	8.53	104	70 - 130	11	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	127	120	mg/Kg	1	100	127	120	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG
Prep Batch: 83915 | QC Preparation: 2013-02-18 | Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.87	mg/Kg	1	2.00	<0.00810	94	72.4 - 120
Toluene		1	1.96	mg/Kg	1	2.00	<0.00750	98	77 - 120
Ethylbenzene		1	2.12	mg/Kg	1	2.00	<0.00730	106	71.8 - 120
Xylene		1	6.60	mg/Kg	1	6.00	<0.00700	110	78.3 - 120

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	1.87	mg/Kg	1	2.00	<0.00810	94	72.4 - 120	0	20
Toluene		1	1.95	mg/Kg	1	2.00	<0.00750	98	77 - 120	0	20
Ethylbenzene		1	2.11	mg/Kg	1	2.00	<0.00730	106	71.8 - 120	0	20
Xylene		1	6.60	mg/Kg	1	6.00	<0.00700	110	78.3 - 120	0	20

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

Surrogate			LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	2.20	2.22	mg/Kg	1	2.00	110	111	79.5 - 108
4-Bromofluorobenzene (4-BFB)			2.10	2.07	mg/Kg	1	2.00	105	104	71.4 - 108

Laboratory Control Spike (LCS-1)

QC Batch: 99047 | Date Analyzed: 2013-02-18 | Analyzed By: YG
Prep Batch: 83915 | QC Preparation: 2013-02-18 | Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	23.8	mg/Kg	1	20.0	9.01	119	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
GRO		1	24.4	mg/Kg	1	20.0	9.01	122	70 - 130	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)	2.02	2.01	mg/Kg	1	2.00	101	100	70 - 130
4-Bromofluorobenzene (4-BFB)	2.08	2.11	mg/Kg	1	2.00	104	106	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 99229 | Date Analyzed: 2013-02-25 | Analyzed By: AR
Prep Batch: 84061 | QC Preparation: 2013-02-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2750	mg/Kg	1	2500	<3.85	110	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			2630	mg/Kg	1	2500	<3.85	105	85 - 115	4	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: 99230 | Date Analyzed: 2013-02-25 | Analyzed By: AR
Prep Batch: 84061 | QC Preparation: 2013-02-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2520	mg/Kg	1	2500	<3.85	101	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			2710	mg/Kg	1	2500	<3.85	108	85 - 115	7	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: 321278

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW
Prep Batch: 83905 | QC Preparation: 2013-02-18 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	653	mg/Kg	1	250	459	78	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
DRO		1	768	mg/Kg	1	250	459	124	70 - 130	16	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	102	134	mg/Kg	1	100	102	134	70 - 130

Matrix Spike (MS-1) Spiked Sample: 321062

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG
Prep Batch: 83915 | QC Preparation: 2013-02-18 | Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.29	mg/Kg	1	2.00	<0.00810	114	66.3 - 138
Toluene		1	2.41	mg/Kg	1	2.00	<0.00750	120	64.8 - 142
Ethylbenzene		1	2.63	mg/Kg	1	2.00	<0.00730	132	72 - 132
Xylene		1	8.17	mg/Kg	1	6.00	<0.00700	136	60.8 - 148

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	2.24	mg/Kg	1	2.00	<0.00810	112	66.3 - 138	2	20
Toluene		1	2.35	mg/Kg	1	2.00	<0.00750	118	64.8 - 142	2	20
Ethylbenzene		1	2.54	mg/Kg	1	2.00	<0.00730	127	72 - 132	4	20
Xylene		1	7.88	mg/Kg	1	6.00	<0.00700	131	60.8 - 148	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
Trifluorotoluene (TFT)	Qsr	Qsr	2.19	2.20	mg/Kg	1	2	110	110	79.5 - 108
4-Bromofluorobenzene (4-BFB)			2.09	2.06	mg/Kg	1	2	104	103	71.4 - 108

Matrix Spike (MS-1) Spiked Sample: 321062

QC Batch: 99047 | Date Analyzed: 2013-02-18 | Analyzed By: YG
Prep Batch: 83915 | QC Preparation: 2013-02-18 | Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	22.3	mg/Kg	1	20.0	<2.32	112	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	Qs	Qs 1	27.0	mg/Kg	1	20.0	<2.32	135	70 - 130	19	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)	1.61	1.64	mg/Kg	1	2	80	82	70 - 130
4-Bromofluorobenzene (4-BFB)	2.14	2.14	mg/Kg	1	2	107	107	70 - 130

Matrix Spike (MS-1) Spiked Sample: 321287

QC Batch: 99229 | Date Analyzed: 2013-02-25 | Analyzed By: AR
Prep Batch: 84061 | QC Preparation: 2013-02-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4910	mg/Kg	10	2500	2290	105	78.9 - 121

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			4630	mg/Kg	10	2500	2290	94	78.9 - 121	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: 321505

QC Batch: 99230 | Date Analyzed: 2013-02-25 | Analyzed By: AR
Prep Batch: 84061 | QC Preparation: 2013-02-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			14600	mg/Kg	10	2500	12600	80	78.9 - 121

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			15000	mg/Kg	10	2500	12600	96	78.9 - 121	3	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	260	104	80 - 120	2013-02-19

Standard (CCV-2)

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	259	104	80 - 120	2013-02-19

Standard (CCV-3)

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	288	115	80 - 120	2013-02-19

Standard (CCV-4)

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	285	114	80 - 120	2013-02-19

Standard (CCV-1)

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0934	93	80 - 120	2013-02-18
Toluene		1	mg/kg	0.100	0.0948	95	80 - 120	2013-02-18
Ethylbenzene		1	mg/kg	0.100	0.0988	99	80 - 120	2013-02-18
Xylene		1	mg/kg	0.300	0.306	102	80 - 120	2013-02-18

Standard (CCV-2)

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.102	102	80 - 120	2013-02-18
Toluene		1	mg/kg	0.100	0.104	104	80 - 120	2013-02-18
Ethylbenzene		1	mg/kg	0.100	0.108	108	80 - 120	2013-02-18
Xylene		1	mg/kg	0.300	0.334	111	80 - 120	2013-02-18

Standard (CCV-3)

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.101	101	80 - 120	2013-02-18
Toluene		1	mg/kg	0.100	0.102	102	80 - 120	2013-02-18
Ethylbenzene		1	mg/kg	0.100	0.106	106	80 - 120	2013-02-18
Xylene		1	mg/kg	0.300	0.330	110	80 - 120	2013-02-18

Standard (CCV-1)

QC Batch: 99047 | Date Analyzed: 2013-02-18 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.879	88	80 - 120	2013-02-18

Standard (CCV-2)

QC Batch: 99047 Date Analyzed: 2013-02-18 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.932	93	80 - 120	2013-02-18

Standard (CCV-3)

QC Batch: 99047 Date Analyzed: 2013-02-18 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.01	101	80 - 120	2013-02-18

Standard (CCV-1)

QC Batch: 99229 Date Analyzed: 2013-02-25 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	98.7	99	85 - 115	2013-02-25

Standard (CCV-2)

QC Batch: 99229 Date Analyzed: 2013-02-25 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	2013-02-25

Standard (CCV-1)

QC Batch: 99230 Date Analyzed: 2013-02-25 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	99.3	99	85 - 115	2013-02-25

Standard (CCV-2)

QC Batch: 99230 Date Analyzed: 2013-02-25 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	2013-02-25

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	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.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
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.

13021532

Analysis Request of Chain of Custody Record

PAGE: 2 OF 1

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.:

PROJECT NAME: COG / Birch Kelly Unit #632 Eddy Co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
321287	2/12		S		X	AH-1 (0-1')	1				X		X	X											X				
288	"		"		"	AH-1 (1-1.5')	1				X														X				
289	"		"		"	AH1 (1.5-2')	1				X														X				
290	"		"		"	AH2 (0-1')	1				X		X	X											X				
291	"		"		"	AH2 (1-1.5')	1				X														X				

RELINQUISHED BY: (Signature) Date: 2/15/13 Time: 1120
RECEIVED BY: (Signature) Date: 2/15/13 Time: 11:20
SAMPLED BY: (Print & Initial) BC / JT Date: 2/12/13 Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:

RECEIVING LABORATORY: Traca
ADDRESS:
CITY: Midland STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 20°

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

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

Midland, TX

Summary Report

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

Report Date: May 22, 2013

Work Order: 13051707

Project Location: Eddy Co., NM
Project Name: COG/Birch Kelly Unit #632
Project Number: 112C05053

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
329470	CS-1 (AH-1) South Wall	soil	2013-05-13	00:00	2013-05-17
329471	CS-1 (AH-1) East Wall	soil	2013-05-13	00:00	2013-05-17
329472	CS-1 (AH-1) West Wall	soil	2013-05-13	00:00	2013-05-17
329473	CS-1 (AH-1) Bottom Hole	soil	2013-05-13	00:00	2013-05-17

Sample: 329470 - CS-1 (AH-1) South Wall

Param	Flag	Result	Units	RL
Chloride		**192**	mg/Kg	4

Sample: 329471 - CS-1 (AH-1) East Wall

Param	Flag	Result	Units	RL
Chloride		**622**	mg/Kg	4

Sample: 329472 - CS-1 (AH-1) West Wall

Param	Flag	Result	Units	RL
Chloride		**1410**	mg/Kg	4

Sample: 329473 - CS-1 (AH-1) Bottom Hole

Param	Flag	Result	Units	RL
Chloride		**243**	mg/Kg	4

TRACEANALYSIS, INC.

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200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.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: May 22, 2013

Work Order: 13051708

Project Location: Eddy Co., NM
Project Name: COG/Birch Kelly Unit #632
Project Number: 112C05053

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
329474	CS-2 (AH-2) North Wall	soil	2013-05-09	00:00	2013-05-17
329475	CS-2 (AH-2) East Wall	soil	2013-05-09	00:00	2013-05-17
329476	CS-2 (AH-2) West Wall	soil	2013-05-09	00:00	2013-05-17
329477	CS-2 (AH-2) Bottom Hole	soil	2013-05-09	00:00	2013-05-17

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

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

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- Sample 329475 (CS-2 (AH-2) East Wall) . . . 4
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- Sample 329477 (CS-2 (AH-2) Bottom Hole) . . . 4

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Case Narrative

Samples for project COG/Birch Kelly Unit #632 were received by TraceAnalysis, Inc. on 2013-05-17 and assigned to work order 13051708. Samples for work order 13051708 were received intact at a temperature of 3.7 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	86059	2013-05-20 at 09:47	101563	2013-05-20 at 15:20

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13051708 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 329474 - CS-2 (AH-2) North Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**111**	mg/Kg	5	4.00

Sample: 329475 - CS-2 (AH-2) East Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**607**	mg/Kg	5	4.00

Sample: 329476 - CS-2 (AH-2) West Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**223**	mg/Kg	5	4.00

Sample: 329477 - CS-2 (AH-2) Bottom Hole

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**132**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 101563

QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	QC Preparation:	2013-05-20	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 101563 | Date Analyzed: 2013-05-20 | Analyzed By: AR
Prep Batch: 86059 | QC Preparation: 2013-05-20 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2720	mg/Kg	1	2500	<3.85	109	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			2660	mg/Kg	1	2500	<3.85	106	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 329477

QC Batch: 101563 | Date Analyzed: 2013-05-20 | Analyzed By: AR
Prep Batch: 86059 | QC Preparation: 2013-05-20 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2750	mg/Kg	5	2500	132	105	78.9 - 121

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			2630	mg/Kg	5	2500	132	100	78.9 - 121	4	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 101563 | Date Analyzed: 2013-05-20 | 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	2013-05-20

Standard (CCV-2)

QC Batch: 101563 | Date Analyzed: 2013-05-20 | 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	2013-05-20

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	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.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
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.

13051708

Analysis Request of Chain of Custody Record

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

PAGE: 1 OF: 1

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: IKE TAVAREZ

PROJECT NO.: 112C05053

PROJECT NAME: COG-BKU 632

Eddy Co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
329474	5/9		S		X	CS-2 (AH-2) North WALL	1					X												X				
475	5/9		S		X	CS-2 (AH-2) EAST WALL	1					X												X				
476	5/9		S		X	CS-2 (AH-2) WEST WALL	1					X												X				
477	5/9		S		X	CS-2 (AH-2) BOTTOM HOLE	1					X												X				

RELINQUISHED BY: (Signature) — Date: 5-17-13 Time: 0515
RECEIVED BY: (Signature) — Date: 5/17/13 Time: 8:15

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:

SAMPLED BY: (Print & Initial) MARCUS KUTANSKE/MK — Date: Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS
AIRBILL #:
OTHER:

RECEIVING LABORATORY: TRACE
ADDRESS:
CITY: MIDLAND STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

TETRA TECH CONTACT PERSON: IKE TAVAREZ

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.7°

REMARKS: Midland ALP

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal 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: May 22, 2013

Work Order: 13051706

Project Location: Eddy Co., NM
Project Name: COG/Birch Kelly Unit #632
Project Number: 112C05053

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
329463	T-1 (AH-1) 0'	soil	2013-05-09	00:00	2013-05-17
329464	T-1 (AH-1) 2'	soil	2013-05-09	00:00	2013-05-17
329465	T-1 (AH-1) 4'	soil	2013-05-09	00:00	2013-05-17
329466	T-1 (AH-1) 6'	soil	2013-05-09	00:00	2013-05-17
329467	T-1 (AH-1) 8'	soil	2013-05-09	00:00	2013-05-17
329468	T-1 (AH-1) 10'	soil	2013-05-09	00:00	2013-05-17
329469	T-1 (AH-1) 12'	soil	2013-05-09	00:00	2013-05-17

Sample: 329463 - T-1 (AH-1) 0'

Param	Flag	Result	Units	RL
Chloride		**1670**	mg/Kg	4

Sample: 329464 - T-1 (AH-1) 2'

Param	Flag	Result	Units	RL
Chloride		**1040**	mg/Kg	4

Sample: 329465 - T-1 (AH-1) 4'

Param	Flag	Result	Units	RL
Chloride		**759**	mg/Kg	4

Sample: 329466 - T-1 (AH-1) 6'

Param	Flag	Result	Units	RL
Chloride		**646**	mg/Kg	4

Sample: 329467 - T-1 (AH-1) 8'

Param	Flag	Result	Units	RL
Chloride		**220**	mg/Kg	4

Sample: 329468 - T-1 (AH-1) 10'

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 329469 - T-1 (AH-1) 12'

Param	Flag	Result	Units	RL
Chloride		**25.3**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1298 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
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(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.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: May 22, 2013

Work Order: 13051706

Project Location: Eddy Co., NM
Project Name: COG/Birch Kelly Unit #632
Project Number: 112C05053

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
329463	T-1 (AH-1) 0'	soil	2013-05-09	00:00	2013-05-17
329464	T-1 (AH-1) 2'	soil	2013-05-09	00:00	2013-05-17
329465	T-1 (AH-1) 4'	soil	2013-05-09	00:00	2013-05-17
329466	T-1 (AH-1) 6'	soil	2013-05-09	00:00	2013-05-17
329467	T-1 (AH-1) 8'	soil	2013-05-09	00:00	2013-05-17
329468	T-1 (AH-1) 10'	soil	2013-05-09	00:00	2013-05-17
329469	T-1 (AH-1) 12'	soil	2013-05-09	00:00	2013-05-17

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

Michael Abel

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

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Case Narrative

Samples for project COG/Birch Kelly Unit #632 were received by TraceAnalysis, Inc. on 2013-05-17 and assigned to work order 13051706. Samples for work order 13051706 were received intact at a temperature of 3.7 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	86059	2013-05-20 at 09:47	101562	2013-05-20 at 15:19
Chloride (Titration)	SM 4500-Cl B	86059	2013-05-20 at 09:47	101563	2013-05-20 at 15:20

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13051706 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 329463 - T-1 (AH-1) 0'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101562	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1670**	mg/Kg	10	4.00

Sample: 329464 - T-1 (AH-1) 2'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101562	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1040**	mg/Kg	10	4.00

Sample: 329465 - T-1 (AH-1) 4'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101562	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**759**	mg/Kg	5	4.00

Sample: 329466 - T-1 (AH-1) 6'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101562	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**646**	mg/Kg	5	4.00

Sample: 329467 - T-1 (AH-1) 8'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101562	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**220**	mg/Kg	5	4.00

Sample: 329468 - T-1 (AH-1) 10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 329469 - T-1 (AH-1) 12'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**25.3**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 101562

QC Batch:	101562	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	QC Preparation:	2013-05-20	Prepared By:	AR

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

Method Blank (1) QC Batch: 101563

QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	QC Preparation:	2013-05-20	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 101562 | Date Analyzed: 2013-05-20 | Analyzed By: AR
Prep Batch: 86059 | QC Preparation: 2013-05-20 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2530	mg/Kg	1	2500	<3.85	101	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			2690	mg/Kg	1	2500	<3.85	108	85 - 115	6	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: 101563 | Date Analyzed: 2013-05-20 | Analyzed By: AR
Prep Batch: 86059 | QC Preparation: 2013-05-20 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2720	mg/Kg	1	2500	<3.85	109	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			2660	mg/Kg	1	2500	<3.85	106	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 329467

QC Batch: 101562 | Date Analyzed: 2013-05-20 | Analyzed By: AR
Prep Batch: 86059 | QC Preparation: 2013-05-20 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2740	mg/Kg	5	2500	220	101	78.9 - 121

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			2860	mg/Kg	5	2500	220	106	78.9 - 121	4	20

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

Matrix Spike (MS-1) Spiked Sample: 329477

QC Batch: 101563 | Date Analyzed: 2013-05-20 | Analyzed By: AR
Prep Batch: 86059 | QC Preparation: 2013-05-20 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2750	mg/Kg	5	2500	132	105	78.9 - 121

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			2630	mg/Kg	5	2500	132	100	78.9 - 121	4	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 101562 | Date Analyzed: 2013-05-20 | 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	2013-05-20

Standard (CCV-2)

QC Batch: 101562 | Date Analyzed: 2013-05-20 | 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	99.5	100	85 - 115	2013-05-20

Standard (CCV-1)

QC Batch: 101563 | Date Analyzed: 2013-05-20 | 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	2013-05-20

Standard (CCV-2)

QC Batch: 101563 | Date Analyzed: 2013-05-20 | 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	2013-05-20

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

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.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
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.

13051706

Analysis Request of Chain of Custody Record

PAGE: OF:

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: IKE TAVAREZ

PROJECT NO.: 112C05053

PROJECT NAME: COG - BIKINI #652

Eddy Co., NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
529463	5/9		S		X	T-1 (AH-1) 0'	1					✓												✓				
464						T-1 (AH-1) 2'	1					✓												✓				
465						T-1 (AH-1) 4'	1					✓												✓				
466						T-1 (AH-1) 6'	1					✓												✓				
467						T-1 (AH-1) 8'	1					✓												✓				
468						T-1 (AH-1) 10'	1					✓												✓				
469						T-1 (AH-1) 12'	1					✓												✓				

RELINQUISHED BY: (Signature) — Date: 5-13-13 Time: 09:15 — RECEIVED BY: (Signature) — Date: 5/14/13 Time: 8:15 — SAMPLED BY: (Print & Initial) MARIUSZ KUTANSKI / MK — Date: — Time:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time: — SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time: — TETRA TECH CONTACT PERSON: IKE TAVAREZ LC — Results by:

RECEIVING LABORATORY: TRACE — RECEIVED BY: (Signature)
ADDRESS:
CITY: MIDLAND STATE: TX ZIP:
CONTACT: PHONE: DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.7°

REMARKS: Midland acp

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal 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: May 22, 2013

Work Order: 13051708

Project Location: Eddy Co., NM
Project Name: COG/Birch Kelly Unit #632
Project Number: 112C05053

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
329474	CS-2 (AH-2) North Wall	soil	2013-05-09	00:00	2013-05-17
329475	CS-2 (AH-2) East Wall	soil	2013-05-09	00:00	2013-05-17
329476	CS-2 (AH-2) West Wall	soil	2013-05-09	00:00	2013-05-17
329477	CS-2 (AH-2) Bottom Hole	soil	2013-05-09	00:00	2013-05-17

Sample: 329474 - CS-2 (AH-2) North Wall

Param	Flag	Result	Units	RL
Chloride		**111**	mg/Kg	4

Sample: 329475 - CS-2 (AH-2) East Wall

Param	Flag	Result	Units	RL
Chloride		**607**	mg/Kg	4

Sample: 329476 - CS-2 (AH-2) West Wall

Param	Flag	Result	Units	RL
Chloride		**223**	mg/Kg	4

Sample: 329477 - CS-2 (AH-2) Bottom Hole

Param	Flag	Result	Units	RL
Chloride		**132**	mg/Kg	4

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.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: May 22, 2013

Work Order: 13051707

Project Location: Eddy Co., NM
Project Name: COG/Birch Kelly Unit #632
Project Number: 112C05053

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
329470	CS-1 (AH-1) South Wall	soil	2013-05-13	00:00	2013-05-17
329471	CS-1 (AH-1) East Wall	soil	2013-05-13	00:00	2013-05-17
329472	CS-1 (AH-1) West Wall	soil	2013-05-13	00:00	2013-05-17
329473	CS-1 (AH-1) Bottom Hole	soil	2013-05-13	00:00	2013-05-17

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

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

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Case Narrative

Samples for project COG/Birch Kelly Unit #632 were received by TraceAnalysis, Inc. on 2013-05-17 and assigned to work order 13051707. Samples for work order 13051707 were received intact at a temperature of 3.7 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	86059	2013-05-20 at 09:47	101563	2013-05-20 at 15:20

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

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13051707 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Analytical Report

Sample: 329470 - CS-1 (AH-1) South Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**192**		mg/Kg	5	4.00

Sample: 329471 - CS-1 (AH-1) East Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**622**		mg/Kg	5	4.00

Sample: 329472 - CS-1 (AH-1) West Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**1410**		mg/Kg	10	4.00

Sample: 329473 - CS-1 (AH-1) Bottom Hole

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	Sample Preparation:	2013-05-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**243**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 101563

QC Batch:	101563	Date Analyzed:	2013-05-20	Analyzed By:	AR
Prep Batch:	86059	QC Preparation:	2013-05-20	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 101563 | Date Analyzed: 2013-05-20 | Analyzed By: AR
Prep Batch: 86059 | QC Preparation: 2013-05-20 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2720	mg/Kg	1	2500	<3.85	109	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			2660	mg/Kg	1	2500	<3.85	106	85 - 115	2	20

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

Matrix Spike (MS-1) Spiked Sample: 329477

QC Batch: 101563 | Date Analyzed: 2013-05-20 | Analyzed By: AR
Prep Batch: 86059 | QC Preparation: 2013-05-20 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2750	mg/Kg	5	2500	132	105	78.9 - 121

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			2630	mg/Kg	5	2500	132	100	78.9 - 121	4	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 101563 | Date Analyzed: 2013-05-20 | 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	2013-05-20

Standard (CCV-2)

QC Batch: 101563 | Date Analyzed: 2013-05-20 | 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	2013-05-20

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

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.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
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.

1305707

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG
SITE MANAGER: IKE TAVAREZ
PROJECT NO.: 112C05053
PROJECT NAME: COG - BKU 632

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
329470	5/13		S		X	CS-1 (AH-1) SOUTH WALL	1					X												X				
471	5/13		S		X	CS-1 (AH-1) EAST WALL	1					X												X				
472	5/13		S		X	CS-1 (AH-1) WEST WALL	1					X												X				
473	5/13		S		X	CS-1 (AH-1) BOTTOM HOLE	1					X												X				

RELINQUISHED BY: (Signature)	Date: 5-15-13 Time: 0815	RECEIVED BY: (Signature)	Date: 5/15/13 Time: 8:15
SAMPLED BY: (Print & Initial) MARCUS KUHANIEC / MK	Date: Time:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS	AIRBILL #: OTHER:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
TETRA TECH CONTACT PERSON: IKE TAVAREZ KC	Results by:		
RECEIVING LABORATORY: TRACE ADDRESS: CITY: MIDLAND STATE: TX ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: 3.7 6	REMARKS: Midland all		

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