SITE INFORMATION

Report Type: Closure Request

General Site Information:						
Site:	Santa Elena 19 Federal #001H					
Company:	COG Operating LLC					
Section, Township and Range	Unit E	Sec 19	T16S	R30E		
Lease Number:	(API#) 30-015-40567					
County:	Eddy County					
GPS:	32.91029° N			104.01885° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From Loco Hills travel north on CR 217 for approx. 3.73 miles. Turn left traveling west 2.9 miles and turn right (north). Continue traveling north 5.2 miles and turn back to the east. Travel 1.4 miles to the location on the left.					

Release Data:	
Date Released:	2/21/2013
Type Release:	Produced Water
Source of Contamination:	Water Tank Valve
Fluid Released:	40 bbls
Fluids Recovered:	30 bbls

Official Communication:			
Name:	Robert McNeill		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:	Rmcneill@concho.com		ike.tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	*Ranking Score*	*Site Data*
<50 ft	20	
50-99 ft	10	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

October 21, 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., Santa Elena 19 Federal #001H, Unit E, Section 19, Township 16 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 Santa Elena 19 Federal #001H located in Unit E, Section 19, Township 16 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.91029°, W 104.01885°. 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 February 21, 2013, and released approximately forty (40) barrels of produced water from a storage tank valve. Thirty (30) barrels of produced water were recovered. The leak was caused by a trucking company not closing the tank valve. The spill affected an area of approximately 20' x 30' on the pad and 20' x 60' in the pasture. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 19. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 250' below surface. The groundwater data is shown in Figure B.

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

Regulatory

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

Soil Assessment and Analytical Results

On March 20, 2013, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1 through 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 sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the auger hole samples were below the RRAL for TPH and BTEX. Auger hole (AH-1) did not show a chloride impact to the area. A shallow chloride impact was detected in the areas of AH-2 and AH-3, which showed elevated chloride concentrations in the shallow soils and declined significantly at 5-5.5' and 4-4.5 of 68.3 mg/kg and <20.0 mg/kg, respectively.

Closure Activities

On July 23, 2013, Tetra Tech personnel supervised the excavation of the impacted soils. In order to remove the chloride impacts, the areas of AH-2 and AH-3 were excavated to approximately 4.0' below surface. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. Approximately 220 cubic yards^3 of soil were removed and transported to R360 facility for proper disposal.

Once excavated, Tetra Tech collected confirmation samples from the excavation sidewalls and bottoms. The sampling results are shown in Table 1 and laboratory reports are included in Appendix C. Based on the results, the excavation was backfilled with clean soil, ripped and seeded.

TETRA TECH

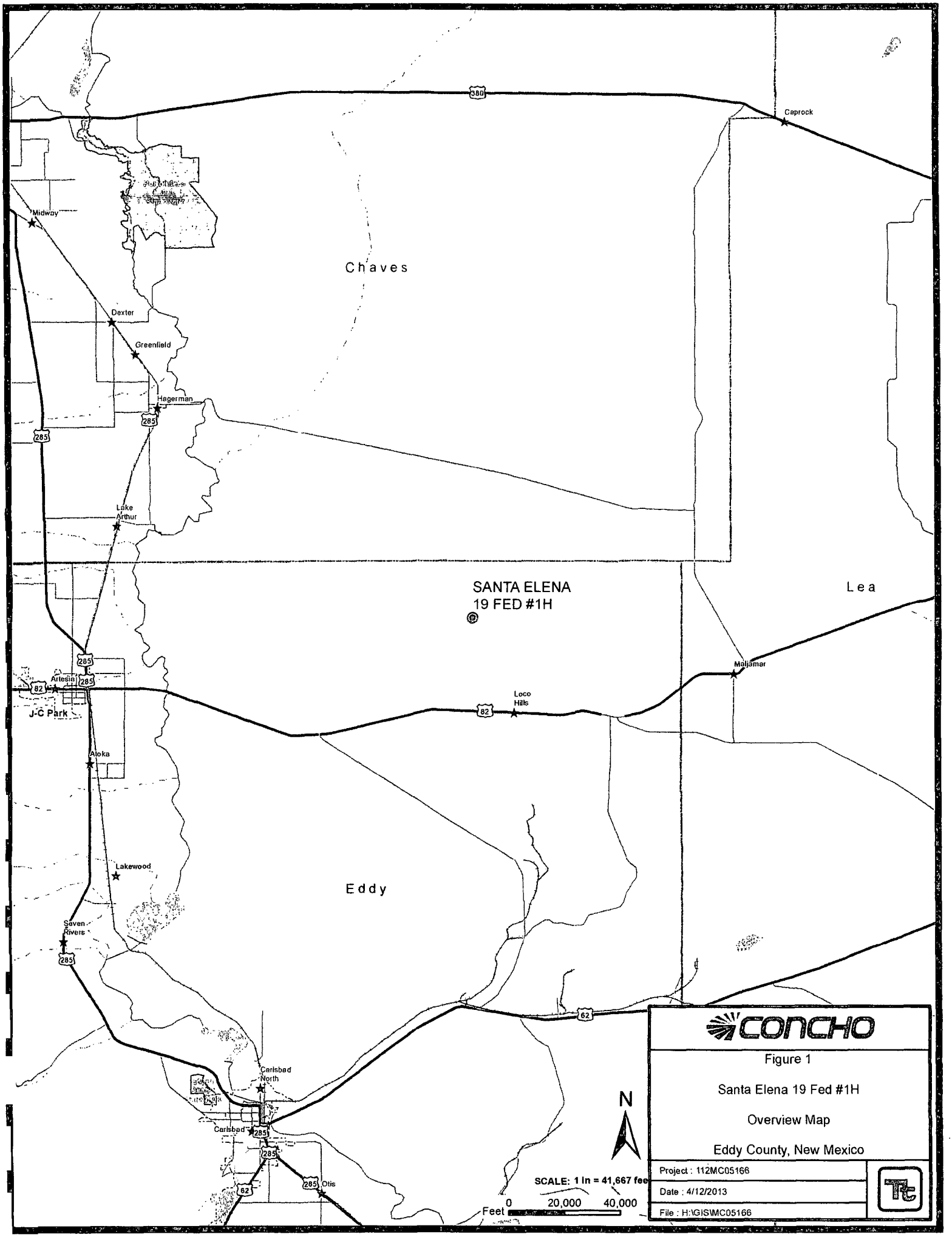
Based on the remediation activities performed at this location, COG requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

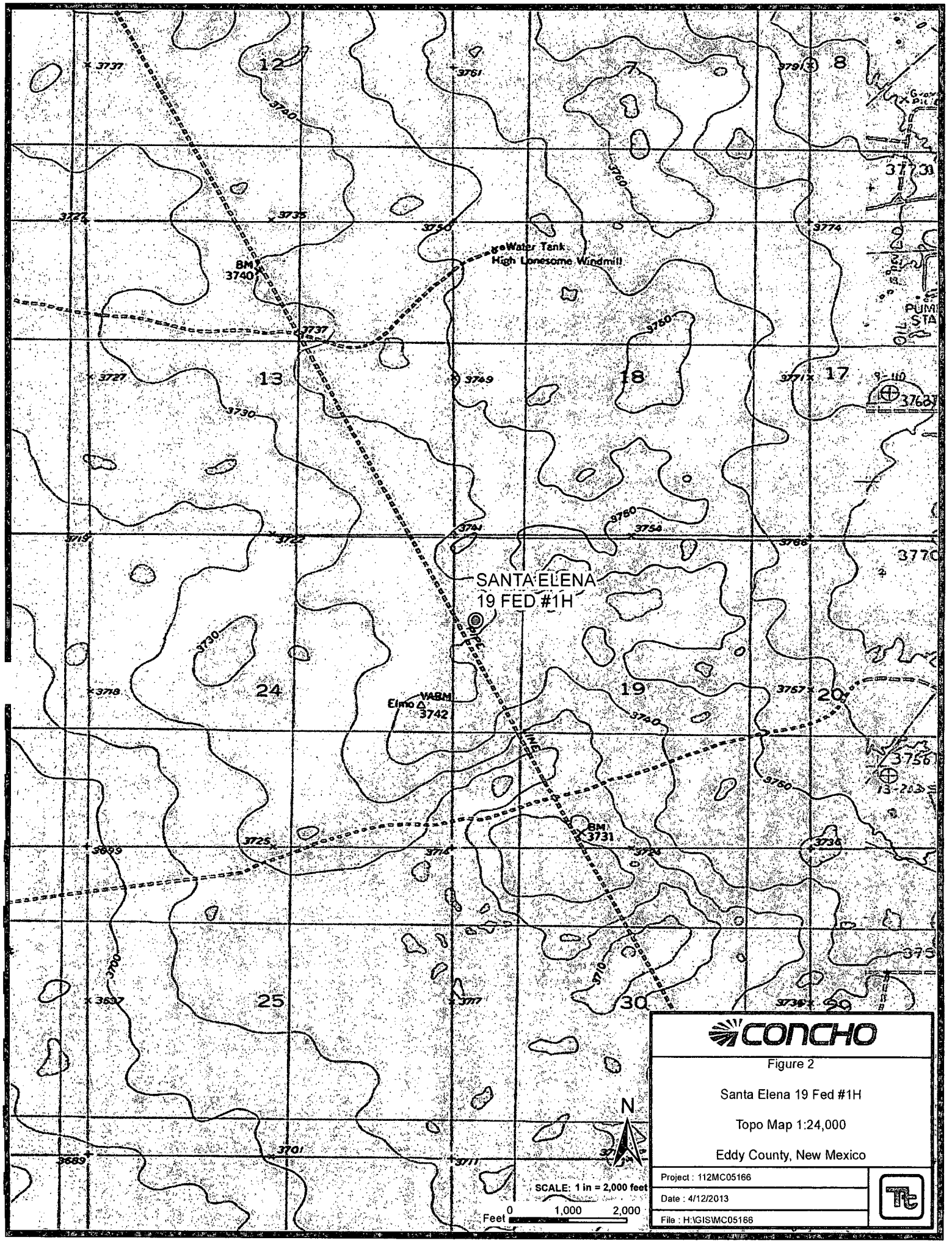
Ike Tavarez, PG
Senior Project Manager

cc: Robert McNeill – COG
Jim Amos - BLM

FIGURES



Drawn By: Isabel Marmolejo



CONCHO

Figure 2

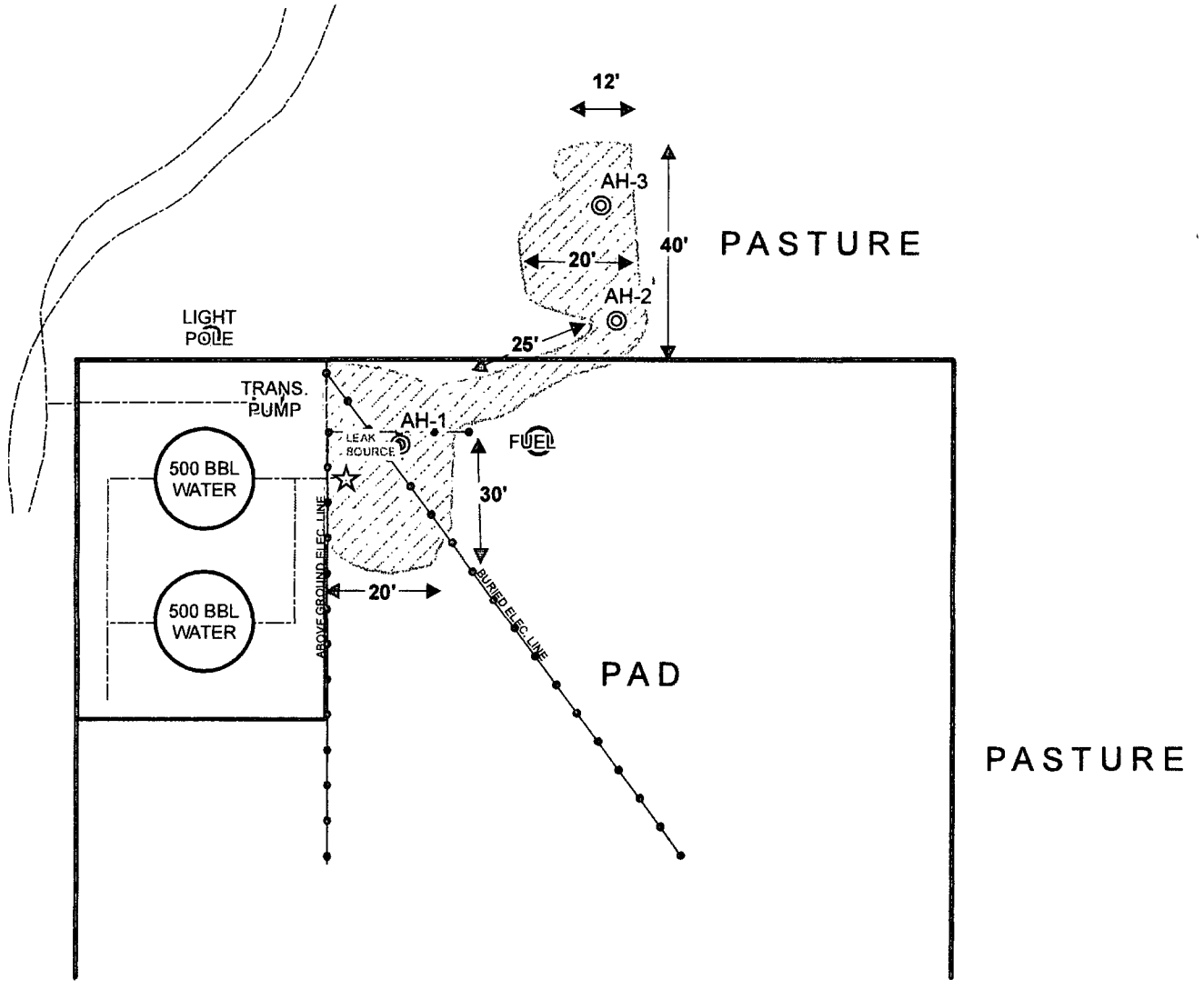
Santa Elena 19 Fed #1H

Topo Map 1:24,000

Eddy County, New Mexico

Project : 112MC05166	
Date : 4/12/2013	
File : H:\GIS\MC05166	

Drawn By: Isabel Marmolejo



EXPLANATION

- ⊙ AUGER HOLE SAMPLE LOCATIONS
- ☆ LEAK SOURCE
- SPILL AREA

N

SCALE: 1 IN = 40 FEET

Feet 0 20 40

CONCHO

Figure 3

Santa Elena 19 Fed #1H

Spill Assessment Map

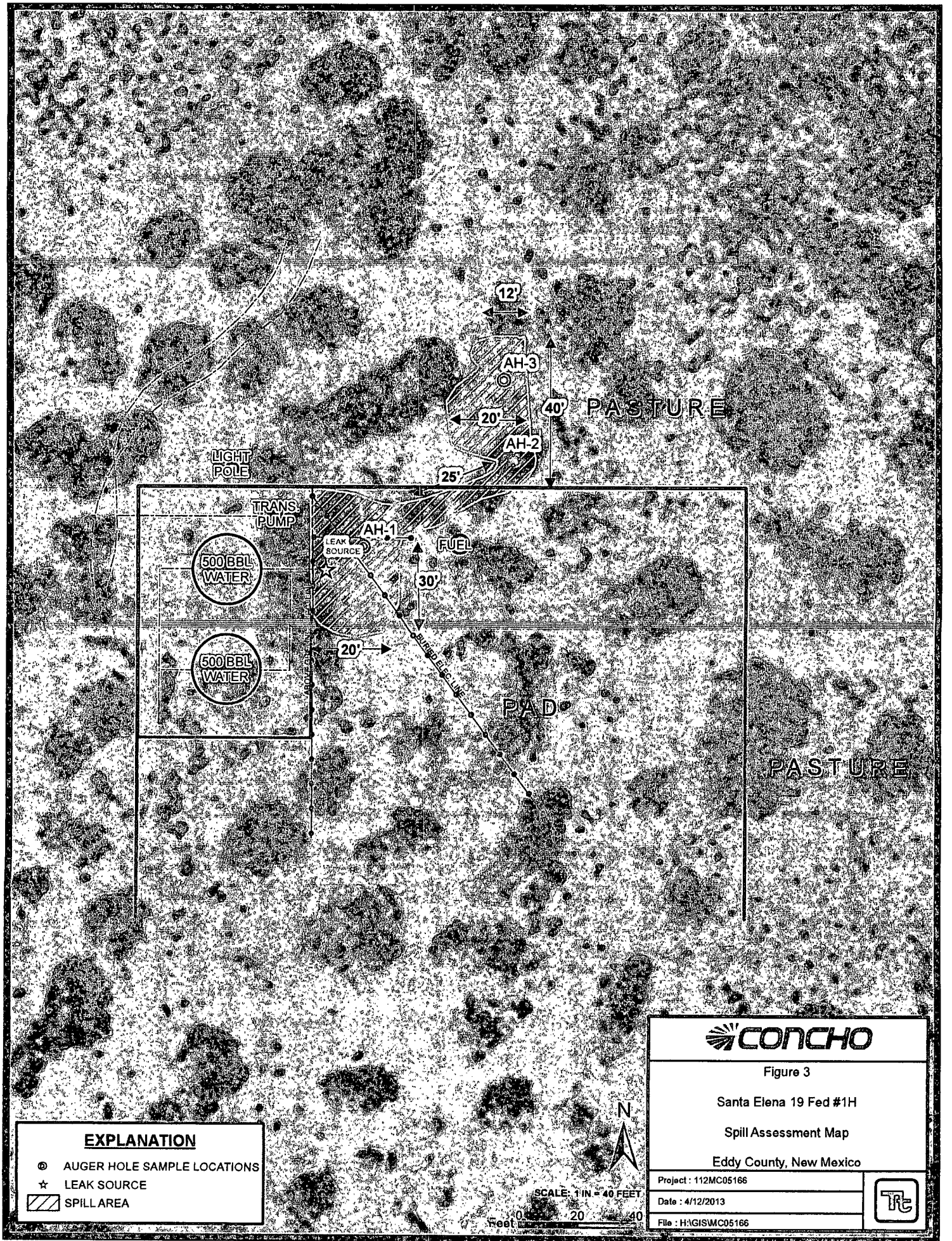
Eddy County, New Mexico

Project : 112MC05166

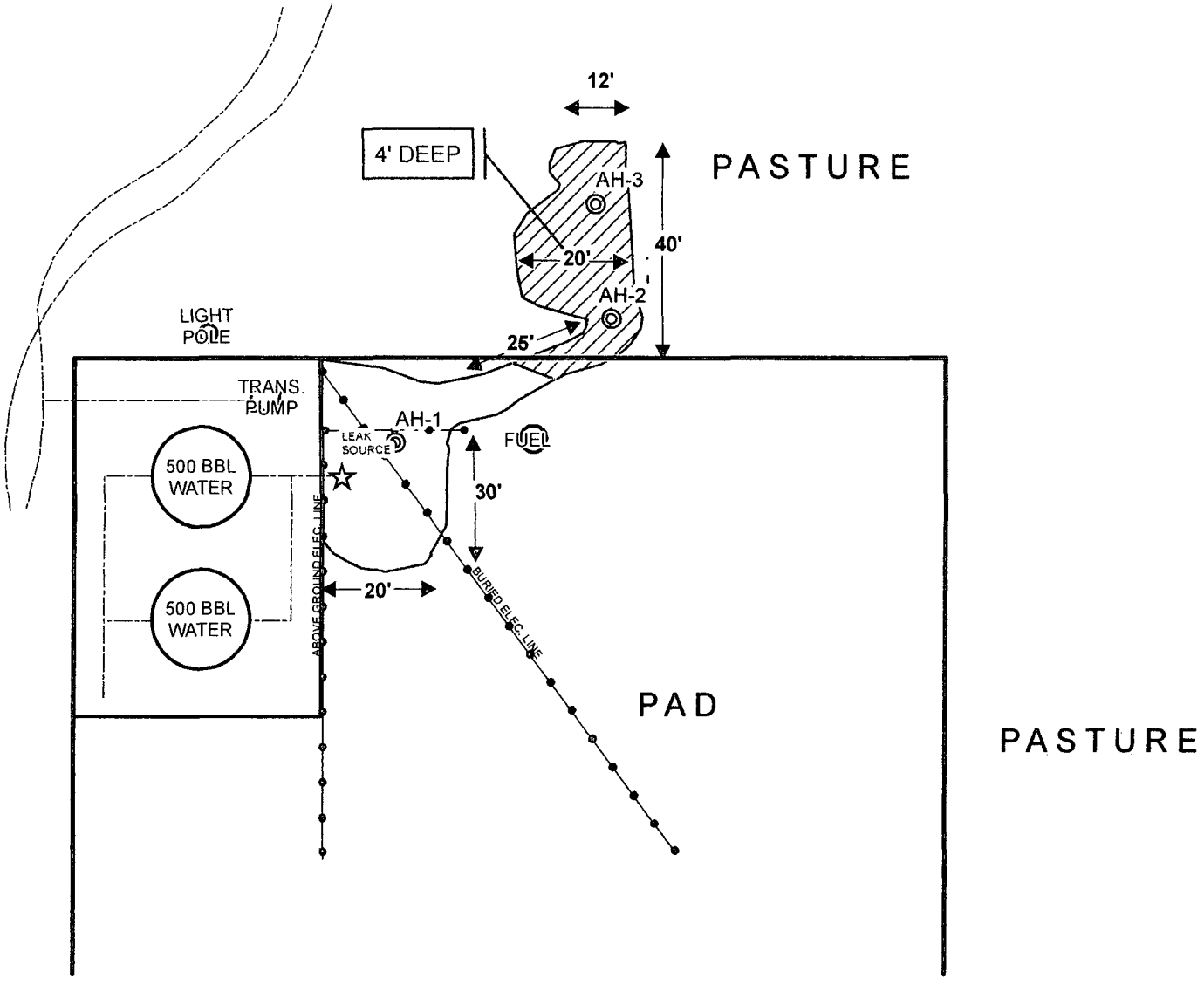
Date : 4/12/2013

File : H:\GIS\MC05166

Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo



EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- LEAK SOURCE
- EXCAVATED AREA

N

SCALE: 1 IN = 40 FEET

Feet 0 20 40

CONCHO

Figure 4

Santa Elena 19 Fed #1H

Excavation Area & Depth Map

Eddy County, New Mexico

Project : 112MC05166

Date : 4/12/2013

File : H:\GIS\MC05166

Drawn By: Isabel Marmolejo

TABLES

Table 1
COG Operating LLC.
Santa Elena 19 Federal #14
Eddy County, New Mexico

Sample ID	Sample Date	BEB Sample Depth (ft)	Excavation Bottom 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	4/5/2013	0-1	0	X		4.04	<50.0	4.04	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<20.0
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	82.9
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	<20.0
AH-2	4/5/2013	0-1	0.5		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	3,920
	"	1-1.5	"		X									7,320
	"	2-2.5	"		X									12,400
	"	3-3.5	"		X									18,200
	"	4-4.5	"	X		-	-	-	-	-	-	-	-	1,100
	"	5-5.5	"	X		-	-	-	-	-	-	-	-	68.3
CS-1 Bottom Hole	7/23/2013	-	-	X		-	-	-	-	-	-	-	-	224
CS-1 East Sidewall	7/23/2013	-	-	X		-	-	-	-	-	-	-	-	<20.0
CS-1 West Sidewall	7/23/2013	-	-	X		-	-	-	-	-	-	-	-	666
CS-1 South Sidewall	7/23/2013	-	-	X		-	-	-	-	-	-	-	-	<20.0
AH-3	4/5/2013	0-1	0.5		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	6,010
	"	1-1.5	"		X									12,800
	"	2-2.5	"		X									12,300
	"	3-3.5	"		X									4,000
	"	4-4.5	"	X		-	-	-	-	-	-	-	-	<20.0
	"	5-5.5	"	X		-	-	-	-	-	-	-	-	193
CS-2 Bottom Hole	7/23/2013	-	-	X		-	-	-	-	-	-	-	-	74.5
CS-2 East Sidewall	7/23/2013	-	-	X		-	-	-	-	-	-	-	-	24.8
CS-2 West Sidewall	7/23/2013	-	-	X		-	-	-	-	-	-	-	-	<20.0
CS-2 South Sidewall	7/23/2013	-	-	X		-	-	-	-	-	-	-	-	513

(-) Not Analyzed

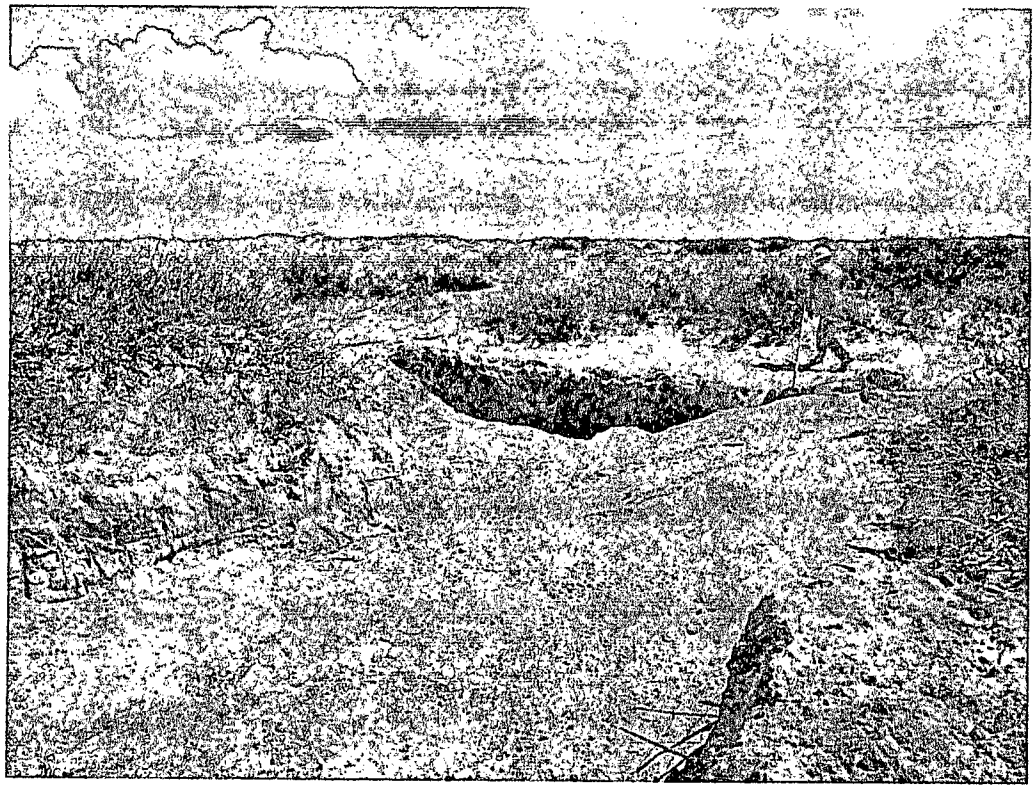
(BEB) Below Excavation Bottom

Excavation Depths

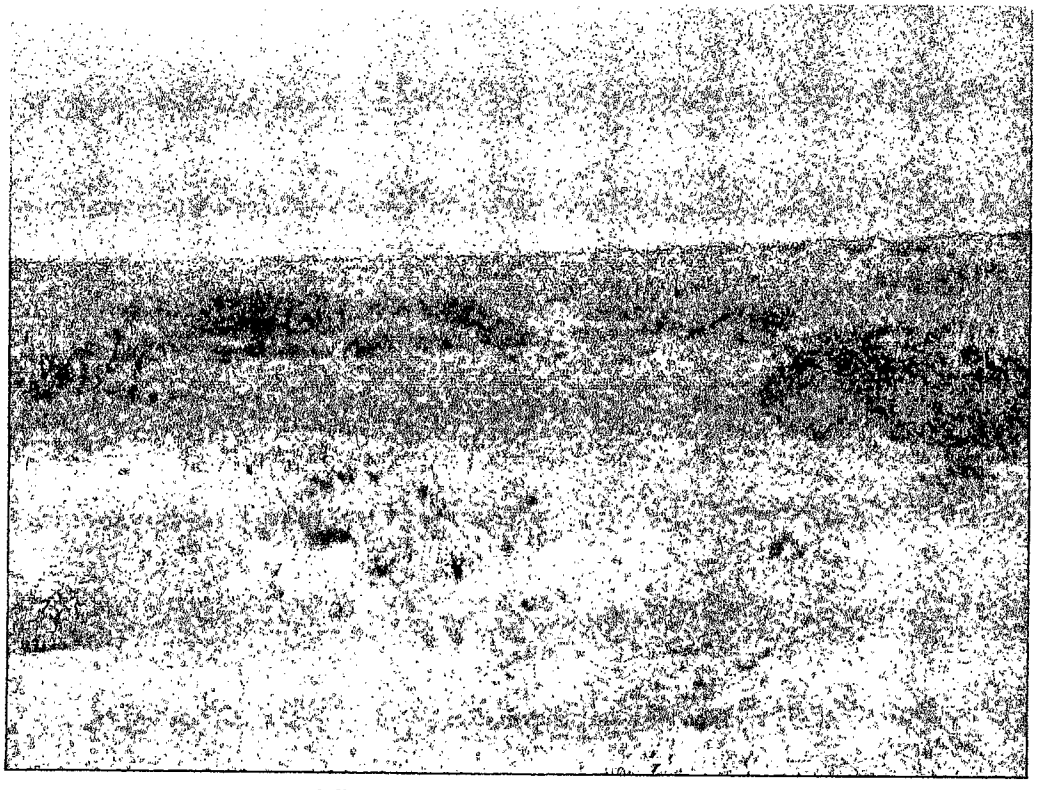
PHOTOGRAPHS

COG Operating LLC
Santa Elena 19 Fed #001H
Eddy County, New Mexico

TETRA TECH



View North– Area of AH-2 and AH-3



View North – Backfill

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	**600 W. Illinois Avenue, Midland, TX 79701**	Telephone No.	**(432) 230-0077**
Facility Name	**Santa Elena 19 Federal #001H**	Facility Type	**Tank Battery**

Surface Owner: Federal	Mineral Owner	Lease No. (API#) 30-015-40567

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	16	19S	30E					Eddy

Latitude N 32.90989° **Longitude** W 104.01856°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 40 bbls	Volume Recovered 30 bbls
Source of Release: Open valve on a load line to water tank	Date and Hour of Occurrence 02/21/2013	Date and Hour of Discovery 02/21/2013 7:00 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Mike Bratcher—OCD**	
By Whom? Michelle Mullins	Date and Hour 03/4/2013 10:01 a.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.*

The truck driver left the valve open on a load line to the water tank. Shut valve on the load line to prevent further release of produced water.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected the site and collected samples to define the spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. The site was then 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 (Agent for COG)	Approved by District Supervisor:
Title: Project Manager	Approval Date: / Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval: / Attached ☐
Date: 10-25-13 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	SANTA ELENA 19 FEDERAL #001H	Facility Type	TANK BATTERY

Surface Owner FEDERAL	Mineral Owner	Lease No. (API#) 30-015-40567

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	16	19	30E					EDDY

Latitude 32.90989 **Longitude** 104.01856

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 40bbls	Volume Recovered 30bbls
Source of Release Open valve on load line to water tank	Date and Hour of Occurrence 02-21-2013	Date and Hour of Discovery 02-21-2013 7:00am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - OCD	
By Whom? Michelle Mullins	Date and Hour 03/04/2013 10:01am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The truck driver left the valve open on the load line to the water tank. Shut valve on load line to prevent further release of produced water.

Describe Area Affected and Cleanup Action Taken.*

Initially 40bbls of produced water were released from an open valve going to the water tank. We were able to recover 30bbls of produced water with a vacuum truck. The spill occurred on the location and traveled to the adjacent pasture. All free fluids have been removed from the location and the pasture. A work plan will presented to the NMOCD/BLM for approval prior to any significant remediation work.

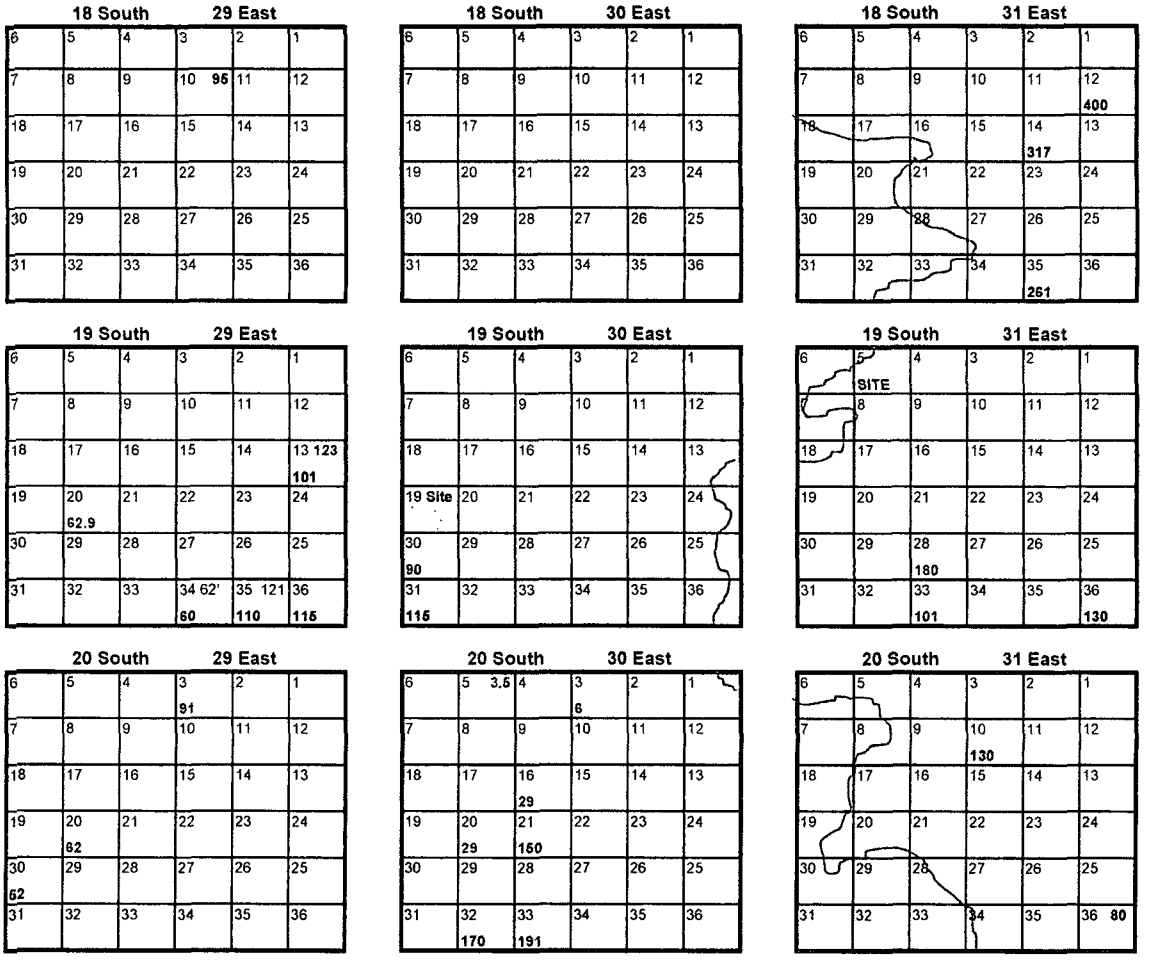
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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: 03-5-2013 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
Santa Elena 19 Federal #001H
Eddy County, New Mexico



- 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

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

(Corrected Report)

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

Report Date: April 22, 2013

Work Order: 13040904

Project Location: Eddy Co., NM
Project Name: Skye Trucking/COG/Santa Elena 19 Federal #14
Project Number: 112MC05166

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
325487	AH-1 0-1'	soil	2013-04-05	00:00	2013-04-08
325488	AH-1 1-1.5'	soil	2013-04-05	00:00	2013-04-08
325489	AH-1 2-2.5'	soil	2013-04-05	00:00	2013-04-08
325490	AH-2 0-1' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325491	AH-2 1-1.5' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325492	AH-2 2-2.5' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325493	AH-2 3-3.5' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325494	AH-2 4-4.5' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325495	AH-2 5-5.5' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325496	AH-3 0-1' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325497	AH-3 1-1.5' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325498	AH-3 2-2.5' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325499	AH-3 3-3.5' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325500	AH-3 4-4.5' 0.5' EB	soil	2013-04-05	00:00	2013-04-08
325501	AH-3 5-5.5' 0.5' EB	soil	2013-04-05	00:00	2013-04-08

Report Corrections (Work Order 13040904)

- 4/22/13: Correct project name per client.

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

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

Report Contents

Case Narrative

Samples for project Skye Trucking/COG/Santa Elena 19 Federal #14 were received by TraceAnalysis, Inc. on 2013-04-08 and assigned to work order 13040904. Samples for work order 13040904 were received intact at a temperature of 5.8 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	85036	2013-04-10 at 09:53	100355	2013-04-10 at 09:54
Chloride (Titration)	SM 4500-Cl B	85093	2013-04-10 at 14:08	100413	2013-04-11 at 14:10
Chloride (Titration)	SM 4500-Cl B	85093	2013-04-10 at 14:08	100414	2013-04-11 at 14:11
Chloride (Titration)	SM 4500-Cl B	85093	2013-04-10 at 14:08	100415	2013-04-11 at 14:12
TPH DRO - NEW	S 8015 D	85031	2013-04-09 at 08:00	100353	2013-04-10 at 08:58
TPH GRO	S 8015 D	85039	2013-04-10 at 10:34	100358	2013-04-10 at 10:35

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 13040904 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: 325487 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100355	Date Analyzed:	2013-04-10	Analyzed By:	AH
Prep Batch:	85036	Sample Preparation:	2013-04-09	Prepared By:	AH

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)			1.87	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.57	mg/Kg	1	2.00	78	70 - 130

Sample: 325487 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100413	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

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

Sample: 325487 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100353	Date Analyzed:	2013-04-10	Analyzed By:	CW
Prep Batch:	85031	Sample Preparation:	2013-04-09	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			108	mg/Kg	1	100	108	70 - 130

Sample: 325487 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100358	Date Analyzed:	2013-04-10	Analyzed By:	AH
Prep Batch:	85039	Sample Preparation:	2013-04-10	Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**4.04**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.67	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.62	mg/Kg	1	2.00	81	70 - 130

Sample: 325488 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100414	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**82.9**	mg/Kg	5	4.00

Sample: 325489 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100414	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

continued ...

sample 325489 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

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

Sample: 325490 - AH-2 0-1' 0.5' EB

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100355	Date Analyzed:	2013-04-10	Analyzed By:	AH
Prep Batch:	85036	Sample Preparation:	2013-04-09	Prepared By:	AH

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)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.55	mg/Kg	1	2.00	78	70 - 130

Sample: 325490 - AH-2 0-1' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100414	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3920**	mg/Kg	10	4.00

Sample: 325490 - AH-2 0-1' 0.5' EB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100353	Date Analyzed:	2013-04-10	Analyzed By:	CW
Prep Batch:	85031	Sample Preparation:	2013-04-09	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			124	mg/Kg	1	100	124	70 - 130

Sample: 325490 - AH-2 0-1' 0.5' EB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100358	Date Analyzed:	2013-04-10	Analyzed By:	AH
Prep Batch:	85039	Sample Preparation:	2013-04-10	Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	QS	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.58	mg/Kg	1	2.00	79	70 - 130

Sample: 325491 - AH-2 1-1.5' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100414	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**7320**	mg/Kg	10	4.00

Sample: 325492 - AH-2 2-2.5' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100414	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**12400**	mg/Kg	10	4.00

Sample: 325493 - AH-2 3-3.5' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100414	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**18200**	mg/Kg	10	4.00

Sample: 325494 - AH-2 4-4.5' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100414	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1100**	mg/Kg	10	4.00

Sample: 325495 - AH-2 5-5.5' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100414	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**68.3**	mg/Kg	5	4.00

Sample: 325496 - AH-3 0-1' 0.5' EB

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100355	Date Analyzed:	2013-04-10	Analyzed By:	AH
Prep Batch:	85036	Sample Preparation:	2013-04-09	Prepared By:	AH

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)			1.85	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.54	mg/Kg	1	2.00	77	70 - 130

Sample: 325496 - AH-3 0-1' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100414	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6010**	mg/Kg	10	4.00

Sample: 325496 - AH-3 0-1' 0.5' EB

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100353	Date Analyzed:	2013-04-10	Analyzed By:	CW
Prep Batch:	85031	Sample Preparation:	2013-04-09	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			116	mg/Kg	1	100	116	70 - 130

Sample: 325496 - AH-3 0-1' 0.5' EB

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100358	Date Analyzed:	2013-04-10	Analyzed By:	AH
Prep Batch:	85039	Sample Preparation:	2013-04-10	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.57	mg/Kg	1	2.00	78	70 - 130

Sample: 325497 - AH-3 1-1.5' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100414	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**12800**	mg/Kg	10	4.00

Sample: 325498 - AH-3 2-2.5' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100415	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**12300**	mg/Kg	10	4.00

Sample: 325499 - AH-3 3-3.5' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100415	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4000**	mg/Kg	10	4.00

Sample: 325500 - AH-3 4-4.5' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100415	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

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

Sample: 325501 - AH-3 5-5.5' 0.5' EB

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	100415	Date Analyzed:	2013-04-11	Analyzed By:	AR
Prep Batch:	85093	Sample Preparation:	2013-04-10	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**193**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 100353

QC Batch: 100353 | Date Analyzed: 2013-04-10 | Analyzed By: CW
Prep Batch: 85031 | QC Preparation: 2013-04-09 | Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<6.88	mg/Kg	50

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

Method Blank (1) QC Batch: 100355

QC Batch: 100355 | Date Analyzed: 2013-04-10 | Analyzed By: AH
Prep Batch: 85036 | QC Preparation: 2013-04-10 | Prepared By: AH

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)			1.81	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.65	mg/Kg	1	2.00	82	70 - 130

Method Blank (1) QC Batch: 100358

QC Batch: 100358 | Date Analyzed: 2013-04-10 | Analyzed By: AH
Prep Batch: 85039 | QC Preparation: 2013-04-10 | Prepared By: AH

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)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			1.66	mg/Kg	1	2.00	83	70 - 130

Method Blank (1) QC Batch: 100413

QC Batch: 100413 Date Analyzed: 2013-04-11 Analyzed By: AR
Prep Batch: 85093 QC Preparation: 2013-04-10 Prepared By: AR

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

Method Blank (1) QC Batch: 100414

QC Batch: 100414 Date Analyzed: 2013-04-11 Analyzed By: AR
Prep Batch: 85093 QC Preparation: 2013-04-10 Prepared By: AR

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

Method Blank (1) QC Batch: 100415

QC Batch: 100415 Date Analyzed: 2013-04-11 Analyzed By: AR
Prep Batch: 85093 QC Preparation: 2013-04-10 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: 100353 | Date Analyzed: 2013-04-10 | Analyzed By: CW
Prep Batch: 85031 | QC Preparation: 2013-04-09 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	254	mg/Kg	1	250	<6.88	102	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	261	mg/Kg	1	250	<6.88	104	70 - 130	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
n-Tricosane	114	110	mg/Kg	1	100	114	110	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100355 | Date Analyzed: 2013-04-10 | Analyzed By: AH
Prep Batch: 85036 | QC Preparation: 2013-04-10 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.78	mg/Kg	1	2.00	<0.00810	89	70 - 130
Toluene		1	1.74	mg/Kg	1	2.00	<0.00750	87	70 - 130
Ethylbenzene		1	1.78	mg/Kg	1	2.00	<0.00730	89	70 - 130
Xylene		1	5.32	mg/Kg	1	6.00	<0.00700	89	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	1.90	mg/Kg	1	2.00	<0.00810	95	70 - 130	6	20
Toluene		1	1.90	mg/Kg	1	2.00	<0.00750	95	70 - 130	9	20
Ethylbenzene		1	1.91	mg/Kg	1	2.00	<0.00730	96	70 - 130	7	20
Xylene		1	5.68	mg/Kg	1	6.00	<0.00700	95	70 - 130	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)	1.84	1.86	mg/Kg	1	2.00	92	93	70 - 130
4-Bromofluorobenzene (4-BFB)	1.67	1.70	mg/Kg	1	2.00	84	85	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100358 | Date Analyzed: 2013-04-10 | Analyzed By: AH
Prep Batch: 85039 | QC Preparation: 2013-04-10 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.0	mg/Kg	1	20.0	<2.32	85	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	18.7	mg/Kg	1	20.0	<2.32	94	70 - 130	10	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)	1.70	1.77	mg/Kg	1	2.00	85	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.70	1.75	mg/Kg	1	2.00	85	88	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100413 | Date Analyzed: 2013-04-11 | Analyzed By: AR
Prep Batch: 85093 | QC Preparation: 2013-04-10 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2480	mg/Kg	1	2500	<3.85	99	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			2650	mg/Kg	1	2500	<3.85	106	85 - 115	7	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: 100414 | Date Analyzed: 2013-04-11 | Analyzed By: AR
Prep Batch: 85093 | QC Preparation: 2013-04-10 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2680	mg/Kg	1	2500	<3.85	107	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			2500	mg/Kg	1	2500	<3.85	100	85 - 115	7	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: 100415 | Date Analyzed: 2013-04-11 | Analyzed By: AR
Prep Batch: 85093 | QC Preparation: 2013-04-10 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2440	mg/Kg	1	2500	<3.85	98	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			2600	mg/Kg	1	2500	<3.85	104	85 - 115	6	20

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

Matrix Spike (MS-1) Spiked Sample: 325446

QC Batch: 100353 | Date Analyzed: 2013-04-10 | Analyzed By: CW
Prep Batch: 85031 | QC Preparation: 2013-04-09 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	408	mg/Kg	1	250	89	128	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	403	mg/Kg	1	250	89	126	70 - 130	1	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	129	129	mg/Kg	1	100	129	129	70 - 130

Matrix Spike (MS-1) Spiked Sample: 325527

QC Batch: 100355 | Date Analyzed: 2013-04-10 | Analyzed By: AH
Prep Batch: 85036 | QC Preparation: 2013-04-10 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.83	mg/Kg	1	2.00	<0.00810	92	70 - 130
Toluene		1	1.85	mg/Kg	1	2.00	<0.00750	92	70 - 130
Ethylbenzene		1	1.92	mg/Kg	1	2.00	<0.00730	96	70 - 130
Xylene		1	5.73	mg/Kg	1	6.00	<0.00700	96	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	1.74	mg/Kg	1	2.00	<0.00810	87	70 - 130	5	20
Toluene		1	1.76	mg/Kg	1	2.00	<0.00750	88	70 - 130	5	20
Ethylbenzene		1	1.83	mg/Kg	1	2.00	<0.00730	92	70 - 130	5	20
Xylene		1	5.45	mg/Kg	1	6.00	<0.00700	91	70 - 130	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
Trifluorotoluene (TFT)	1.86	1.85	mg/Kg	1	2	93	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.59	1.57	mg/Kg	1	2	80	78	70 - 130

Matrix Spike (MS-1) Spiked Sample: 325527

QC Batch: 100358 | Date Analyzed: 2013-04-10 | Analyzed By: AH
Prep Batch: 85039 | QC Preparation: 2013-04-10 | Prepared By: AH

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	1	13.0	mg/Kg	1	20.0	2.51	52	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	13.3	mg/Kg	1	20.0	2.51	54	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)	1.64	1.62	mg/Kg	1	2	82	81	70 - 130
4-Bromofluorobenzene (4-BFB)	1.71	1.70	mg/Kg	1	2	86	85	70 - 130

Matrix Spike (MS-1) Spiked Sample: 325487

QC Batch: 100413 | Date Analyzed: 2013-04-11 | Analyzed By: AR
Prep Batch: 85093 | QC Preparation: 2013-04-10 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2480	mg/Kg	5	2500	<19.2	99	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			2340	mg/Kg	5	2500	<19.2	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: 325497

QC Batch: 100414 | Date Analyzed: 2013-04-11 | Analyzed By: AR
Prep Batch: 85093 | QC Preparation: 2013-04-10 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			15400	mg/Kg	10	2500	12800	104	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			15100	mg/Kg	10	2500	12800	92	78.9 - 121	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: 325508

QC Batch: 100415 | Date Analyzed: 2013-04-11 | Analyzed By: AR
Prep Batch: 85093 | QC Preparation: 2013-04-10 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	5	2500	119	100	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			2760	mg/Kg	5	2500	119	106	78.9 - 121	5	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: 100353 | Date Analyzed: 2013-04-10 | 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	250	100	80 - 120	2013-04-10

Standard (CCV-2)

QC Batch: 100353 | Date Analyzed: 2013-04-10 | 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	257	103	80 - 120	2013-04-10

Standard (CCV-3)

QC Batch: 100353 | Date Analyzed: 2013-04-10 | 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	284	114	80 - 120	2013-04-10

Standard (CCV-4)

QC Batch: 100353 | Date Analyzed: 2013-04-10 | 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	266	106	80 - 120	2013-04-10

Standard (CCV-1)

QC Batch: 100355 | Date Analyzed: 2013-04-10 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0986	99	80 - 120	2013-04-10
Toluene		1	mg/kg	0.100	0.0964	96	80 - 120	2013-04-10
Ethylbenzene		1	mg/kg	0.100	0.0974	97	80 - 120	2013-04-10
Xylene		1	mg/kg	0.300	0.291	97	80 - 120	2013-04-10

Standard (CCV-2)

QC Batch: 100355 | Date Analyzed: 2013-04-10 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0984	98	80 - 120	2013-04-10
Toluene		1	mg/kg	0.100	0.0965	96	80 - 120	2013-04-10
Ethylbenzene		1	mg/kg	0.100	0.0962	96	80 - 120	2013-04-10
Xylene		1	mg/kg	0.300	0.287	96	80 - 120	2013-04-10

Standard (CCV-3)

QC Batch: 100355 | Date Analyzed: 2013-04-10 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0972	97	80 - 120	2013-04-10
Toluene		1	mg/kg	0.100	0.0950	95	80 - 120	2013-04-10
Ethylbenzene		1	mg/kg	0.100	0.0940	94	80 - 120	2013-04-10
Xylene		1	mg/kg	0.300	0.279	93	80 - 120	2013-04-10

Standard (CCV-1)

QC Batch: 100358 | Date Analyzed: 2013-04-10 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.834	83	80 - 120	2013-04-10

Standard (CCV-2)

QC Batch: 100358 Date Analyzed: 2013-04-10 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.04	104	80 - 120	2013-04-10

Standard (CCV-3)

QC Batch: 100358 Date Analyzed: 2013-04-10 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.828	83	80 - 120	2013-04-10

Standard (CCV-1)

QC Batch: 100413 Date Analyzed: 2013-04-11 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	98.9	99	85 - 115	2013-04-11

Standard (CCV-2)

QC Batch: 100413 Date Analyzed: 2013-04-11 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	2013-04-11

Standard (CCV-1)

QC Batch: 100414 Date Analyzed: 2013-04-11 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	2013-04-11

Standard (CCV-2)

QC Batch: 100414 Date Analyzed: 2013-04-11 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	99.6	100	85 - 115	2013-04-11

Standard (CCV-1)

QC Batch: 100415 Date Analyzed: 2013-04-11 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	2013-04-11

Standard (CCV-2)

QC Batch: 100415 Date Analyzed: 2013-04-11 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	99.7	100	85 - 115	2013-04-11

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Mininum 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.

13040904

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: Sky Trucking
SITE MANAGER: Ike Tavarez
PROJECT NO.: 112MP05166
PROJECT NAME: CCG - Santa Elena 19 Federal #1H Eddy Co NM

LAB I.D. NUMBER	DATE 2013	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
325487	4/5		S		X	AH 1 (0-1)	1				X		X	X											X				
488						(1-1.5')																							
489						(2-2.5')																							
490						AH 2 (0-1') 0.5' EB							X	X																
491						(1-1.5')																							
492						(2-2.5')																							
493						(3-3.5')																							
494						(4-4.5')																							
495						(5-5.5')																							
496						AH 3 (0-1') 0.5' EB							X	X																

RELINQUISHED BY: (Signature) — Date: 4-8-13 Time: 1620
RECEIVED BY: (Signature) — Date: 4/8/13 Time: 16:20
SAMPLED BY: (Print & Initial) TF / RR — Date: 4-5-13 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:

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

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

SAMPLE CONDITION WHEN RECEIVED: 5.8°

REMARKS: Run deeper samples if TPH exceeds 5000 mg/kg. Run deeper sample if Benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.

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

Midland. all AH

13040904

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

CLIENT NAME: Sky Trucking

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112MC05166

PROJECT NAME: COG - Santa Elena 19 Federal #1H

Eddy Co NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2013	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. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
497	4/5		S		X	AH 3 (1-1.5') 0.5 EB	1				X															X				
498						(2-2.5')																								
499						(3-3.5')																								
500						(4-4.5')																								
501						(5-5.5')																								

RELINQUISHED BY: (Signature) — Date: 4-8-13 Time: 1620 — RECEIVED BY: (Signature) — Date: 4/8/13 Time: 16:20

SAMPLED BY: (Print & Initial) TF / DR — Date: 4-5-13 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 — 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: 580

REMARKS:

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: August 16, 2013

Work Order: 13081333

Project Location: Eddy Co., NM
Project Name: Skye Trucking/COG/Santa Elena 19 Federal #14
Project Number: 112MC05166

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
338469	CS-1 (AH-2) ESW	soil	2013-07-23	00:00	2013-08-13
338470	CS-1 (AH-2) WSW	soil	2013-07-23	00:00	2013-08-13
338471	CS-1 (AH-2) SSW	soil	2013-07-23	00:00	2013-08-13
338472	CS-1 (AH-2) BH	soil	2013-07-23	00:00	2013-08-13
338473	CS-2 (AH-3) ESW	soil	2013-07-23	00:00	2013-08-13
338474	CS-2 (AH-3) WSW	soil	2013-07-23	00:00	2013-08-13
338475	CS-2 (AH-3) NSW	soil	2013-07-23	00:00	2013-08-13
338476	CS-2 (AH-3) BH	soil	2013-07-23	00:00	2013-08-13

Sample: 338469 - CS-1 (AH-2) ESW

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

Sample: 338470 - CS-1 (AH-2) WSW

Param	Flag	Result	Units	RL
Chloride		**666**	mg/Kg	4

Sample: 338471 - CS-1 (AH-2) SSW

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

Sample: 338472 - CS-1 (AH-2) BH

Param	Flag	Result	Units	RL
Chloride		**224**	mg/Kg	4

Sample: 338473 - CS-2 (AH-3) ESW

Param	Flag	Result	Units	RL
Chloride		**74.5**	mg/Kg	4

Sample: 338474 - CS-2 (AH-3) WSW

Param	Flag	Result	Units	RL
Chloride		**24.8**	mg/Kg	4

Sample: 338475 - CS-2 (AH-3) NSW

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

Sample: 338476 - CS-2 (AH-3) BH

Param	Flag	Result	Units	RL
Chloride		**513**	mg/Kg	4

Summary Report

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

Report Date: August 16, 2013

Work Order: 13081333

Project Location: Eddy Co., NM
Project Name: Skye Trucking/COG/Santa Elena 19 Federal #14
Project Number: 112MC05166

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
338469	CS-1 (AH-2) ESW	soil	2013-07-23	00:00	2013-08-13
338470	CS-1 (AH-2) WSW	soil	2013-07-23	00:00	2013-08-13
338471	CS-1 (AH-2) SSW	soil	2013-07-23	00:00	2013-08-13
338472	CS-1 (AH-2) BH	soil	2013-07-23	00:00	2013-08-13
338473	CS-2 (AH-3) ESW	soil	2013-07-23	00:00	2013-08-13
338474	CS-2 (AH-3) WSW	soil	2013-07-23	00:00	2013-08-13
338475	CS-2 (AH-3) NSW	soil	2013-07-23	00:00	2013-08-13
338476	CS-2 (AH-3) BH	soil	2013-07-23	00:00	2013-08-13

Sample: 338469 - CS-1 (AH-2) ESW

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

Sample: 338470 - CS-1 (AH-2) WSW

Param	Flag	Result	Units	RL
Chloride		**666**	mg/Kg	4

Sample: 338471 - CS-1 (AH-2) SSW

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

Sample: 338472 - CS-1 (AH-2) BH

Param	Flag	Result	Units	RL
Chloride		**224**	mg/Kg	4

Sample: 338473 - CS-2 (AH-3) ESW

Param	Flag	Result	Units	RL
Chloride		**74.5**	mg/Kg	4

Sample: 338474 - CS-2 (AH-3) WSW

Param	Flag	Result	Units	RL
Chloride		**24.8**	mg/Kg	4

Sample: 338475 - CS-2 (AH-3) NSW

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

Sample: 338476 - CS-2 (AH-3) BH

Param	Flag	Result	Units	RL
Chloride		**513**	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: August 16, 2013

Work Order: 13081333

Project Location: Eddy Co., NM
Project Name: Skye Trucking/COG/Santa Elena 19 Federal #14
Project Number: 112MC05166

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
338469	CS-1 (AH-2) ESW	soil	2013-07-23	00:00	2013-08-13
338470	CS-1 (AH-2) WSW	soil	2013-07-23	00:00	2013-08-13
338471	CS-1 (AH-2) SSW	soil	2013-07-23	00:00	2013-08-13
338472	CS-1 (AH-2) BH	soil	2013-07-23	00:00	2013-08-13
338473	CS-2 (AH-3) ESW	soil	2013-07-23	00:00	2013-08-13
338474	CS-2 (AH-3) WSW	soil	2013-07-23	00:00	2013-08-13
338475	CS-2 (AH-3) NSW	soil	2013-07-23	00:00	2013-08-13
338476	CS-2 (AH-3) BH	soil	2013-07-23	00:00	2013-08-13

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

Report Contents

Case Narrative

Samples for project Skye Trucking/COG/Santa Elena 19 Federal #14 were received by TraceAnalysis, Inc. on 2013-08-13 and assigned to work order 13081333. Samples for work order 13081333 were received intact at a temperature of 30.4 C. Samples were not on ice.

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	88138	2013-08-14 at 13:41	104084	2013-08-15 at 16:12
Chloride (Titration)	SM 4500-Cl B	88138	2013-08-14 at 13:41	104085	2013-08-15 at 16:13

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 13081333 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: 338469 - CS-1 (AH-2) ESW

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104084	Date Analyzed:	2013-08-15	Analyzed By:	AR
Prep Batch:	88138	Sample Preparation:	2013-08-14	Prepared By:	AR

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

Sample: 338470 - CS-1 (AH-2) WSW

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104084	Date Analyzed:	2013-08-15	Analyzed By:	AR
Prep Batch:	88138	Sample Preparation:	2013-08-14	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**666**	mg/Kg	5	4.00

Sample: 338471 - CS-1 (AH-2) SSW

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104084	Date Analyzed:	2013-08-15	Analyzed By:	AR
Prep Batch:	88138	Sample Preparation:	2013-08-14	Prepared By:	AR

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

Sample: 338472 - CS-1 (AH-2) BH

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104084	Date Analyzed:	2013-08-15	Analyzed By:	AR
Prep Batch:	88138	Sample Preparation:	2013-08-14	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**224**	mg/Kg	5	4.00

Sample: 338473 - CS-2 (AH-3) ESW

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104084	Date Analyzed:	2013-08-15	Analyzed By:	AR
Prep Batch:	88138	Sample Preparation:	2013-08-14	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**74.5**	mg/Kg	5	4.00

Sample: 338474 - CS-2 (AH-3) WSW

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104084	Date Analyzed:	2013-08-15	Analyzed By:	AR
Prep Batch:	88138	Sample Preparation:	2013-08-14	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**24.8**	mg/Kg	5	4.00

Sample: 338475 - CS-2 (AH-3) NSW

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104084	Date Analyzed:	2013-08-15	Analyzed By:	AR
Prep Batch:	88138	Sample Preparation:	2013-08-14	Prepared By:	AR

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

Sample: 338476 - CS-2 (AH-3) BH

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104085	Date Analyzed:	2013-08-15	Analyzed By:	AR
Prep Batch:	88138	Sample Preparation:	2013-08-14	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**513**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 104084

QC Batch:	104084	Date Analyzed:	2013-08-15	Analyzed By:	AR
Prep Batch:	88138	QC Preparation:	2013-08-14	Prepared By:	AR

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

Method Blank (1) QC Batch: 104085

QC Batch:	104085	Date Analyzed:	2013-08-15	Analyzed By:	AR
Prep Batch:	88138	QC Preparation:	2013-08-14	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: 104084 | Date Analyzed: 2013-08-15 | Analyzed By: AR
Prep Batch: 88138 | QC Preparation: 2013-08-14 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2370	mg/Kg	1	2500	<3.85	95	89.7 - 115.9

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
Chloride			2480	mg/Kg	1	2500	<3.85	99	89.7 - 115.9	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: 104085 | Date Analyzed: 2013-08-15 | Analyzed By: AR
Prep Batch: 88138 | QC Preparation: 2013-08-14 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2550	mg/Kg	1	2500	<3.85	102	89.7 - 115.9

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
Chloride			2430	mg/Kg	1	2500	<3.85	97	89.7 - 115.9	5	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: 338475

QC Batch: 104084 | Date Analyzed: 2013-08-15 | Analyzed By: AR
Prep Batch: 88138 | QC Preparation: 2013-08-14 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2270	mg/Kg	5	2500	<19.2	91	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			2400	mg/Kg	5	2500	<19.2	96	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: 338476

QC Batch: 104085 | Date Analyzed: 2013-08-15 | Analyzed By: AR
Prep Batch: 88138 | QC Preparation: 2013-08-14 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2620	mg/Kg	5	2500	513	84	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			2500	mg/Kg	5	2500	513	79	78.9 - 121	5	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: 104084 | Date Analyzed: 2013-08-15 | 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	2013-08-15

Standard (CCV-2)

QC Batch: 104084 | Date Analyzed: 2013-08-15 | 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	99.7	100	85 - 115	2013-08-15

Standard (CCV-1)

QC Batch: 104085 | Date Analyzed: 2013-08-15 | 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	2013-08-15

Standard (CCV-2)

QC Batch: 104085 | Date Analyzed: 2013-08-15 | 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	99.9	100	85 - 115	2013-08-15

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.

13081333

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: 106
SITE MANAGER: Ike Tavarez
PROJECT NO.: 112MC05166
PROJECT NAME: 106 - Santa Elena 19 Fed #1
Eddy Co, NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Past. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
338469	7/23		S		X	CS1 (AH2) ESW	1																	X				
470			S		X	WSW	1																	X				
471			S		X	SSW	1																	X				
472			S		X	BH	1																	X				
473			S		X	CS2 (AH3) ESW	1																	X				
474			S		X	WSW	1																	X				
475			S		X	NSW	1																	X				
476			S		X	BH	1																	X				

RELINQUISHED BY: (Signature)	Date: 8-13-2013 Time: 15:25	RECEIVED BY: (Signature)	Date: 8/13/13 Time: 15:25
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) RR — Date: Time:

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

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: 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: 30.4°

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.