SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	Resposado 2 State #2H					
Company:	COG Operating					
Section, Township and Range	Unit A	Section 2	T26S	R29E		
Lease Number:	API-30-015-39455					
County:	Eddy County					
GPS:	32.07818° N			103.95021° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	South of Malaga, at the intersection of Hwy 285 and CR 725 (Longhorn Rd). Travel east on CR 725 (Longhorn Rd) for 4.3 miles, turn left and travel 2.7 miles, turn left and travel 1.1 miles to the site on right side of road.					

Release Data:	
Date Released:	2/13/2013
Type Release:	Produced Water
Source of Contamination:	Transport Truck
Fluid Released:	100 bbls
Fluids Recovered:	5 bbls

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

January 14, 2014

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., Resposado 2 State #2H, Well Site, Unit A, Section 2, Township 26 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Sahara Transport Services LLC. to assess a spill that occurred at the COG Operating LLC. (COG), Resposado 2 State #2H Well Pad located in Unit A, Section 2, Township 26 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.07818°, W 103.95021°. 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 13, 2013, and released approximately one hundred (100) barrels of produced water from a transport truck. Five (5) barrels of standing fluids were recovered. The spill initiated west edge of the pad in the pasture measuring approximately 35' x 100' and migrated west approximately 700' with a width of 3' to 5' wide. In addition, an area 30' x 60' impacted the pad of the Resposado 2 State #1H. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 2. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 125' below surface. The groundwater data is shown in Figure B.

Regulatory

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

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

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 13, 2013, Tetra Tech personnel inspected and sampled the spill area. A total of fifteen (15) auger holes (AH-1 through AH-15) 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, none of the samples exceeded the RRAL for TPH and BTEX. The areas of auger holes (AH-7, AH-9, AH-10, AH-11, AH-12, AH-14 and AH-15), the chlorides concentrations did not show a significant impact to the subsurface soil and do not appear to an environmental concern. The remaining areas showed a shallow chloride impact to the soils. Auger holes (AH-1, AH-2, AH-3, AH-6 and AH-8) showed chloride concentrations ranging from 1,060 to 1,900 mg/kg at 0-1' and significantly declined with depth at 1-1.5' below surface. In the areas of AH-4, AH-5 and AH-13, the chloride impacted soils were not vertically defined, with concentrations of 1,220 mg/kg, 1,490 mg/kg and 1,690 mg/kg, respectively.

Closure Activities

Tetra Tech supervised the removal of the impacted material as highlighted (green) in Table 1 and shown on Figure 4. The areas of AH-1, AH-2, AH-3, AH-6 and AH-8 were excavated to a depth of approximately 1.0' below surface. Tetra Tech installed backhoe trenches in the areas of AH-4, AH-5 and AH-13 in order to attempt to vertically define the chloride impact. Based on the field data, these areas were excavated to the appropriate depths. The area of AH-4 showed chloride concentrations of 2,070 mg/kg and was not vertically defined due to the dense caliche formation. Due to the size and limited spill path, this does not appear to be an environmental concern.

Once the areas were excavated to the appropriate depths, the excavation was backfilled with clean soil. Approximately 440 cubic yards were removed and transported to a proper disposal.

TETRA TECH

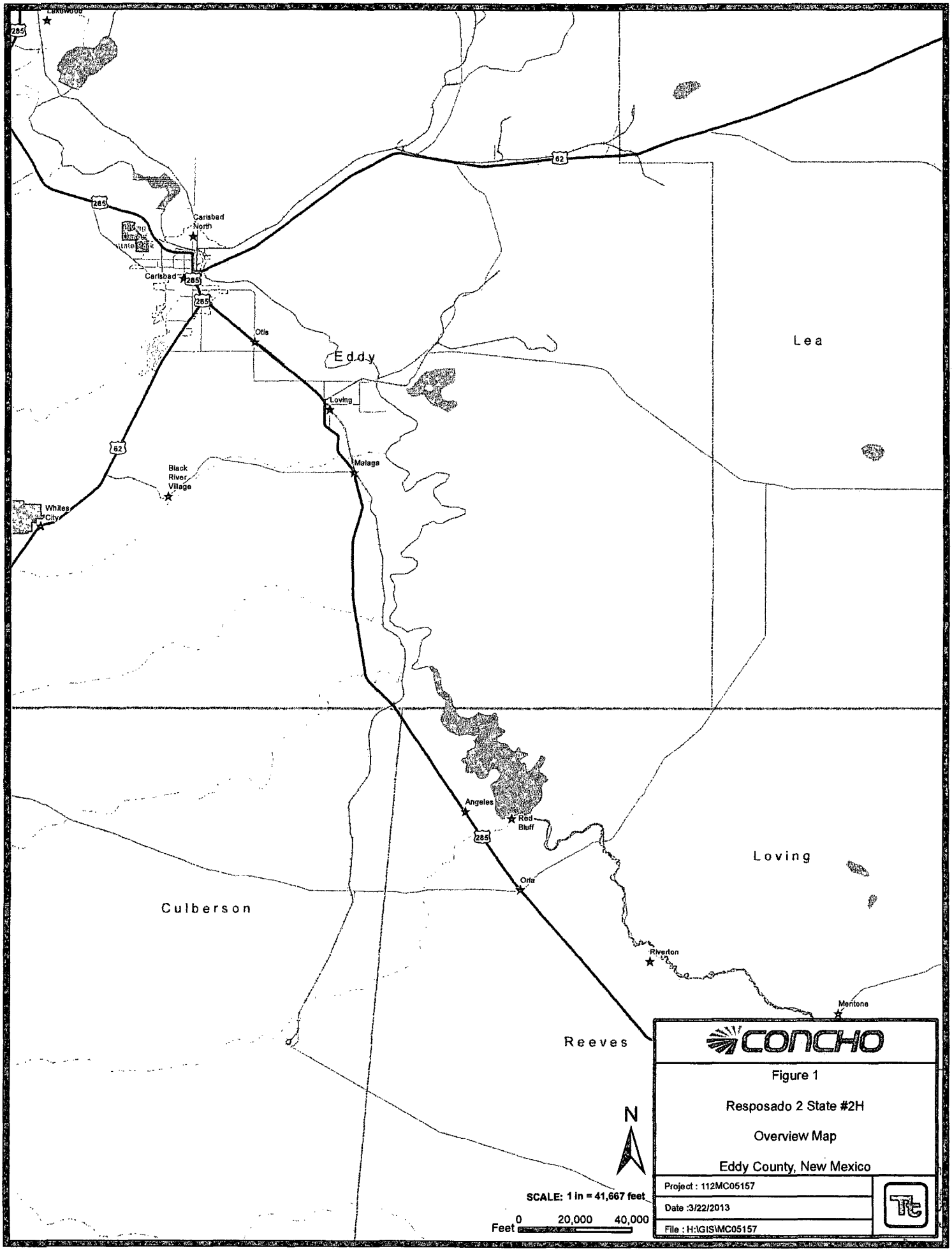
Upon completion, a final report was submitted to the NMOCD. The final C-141 is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

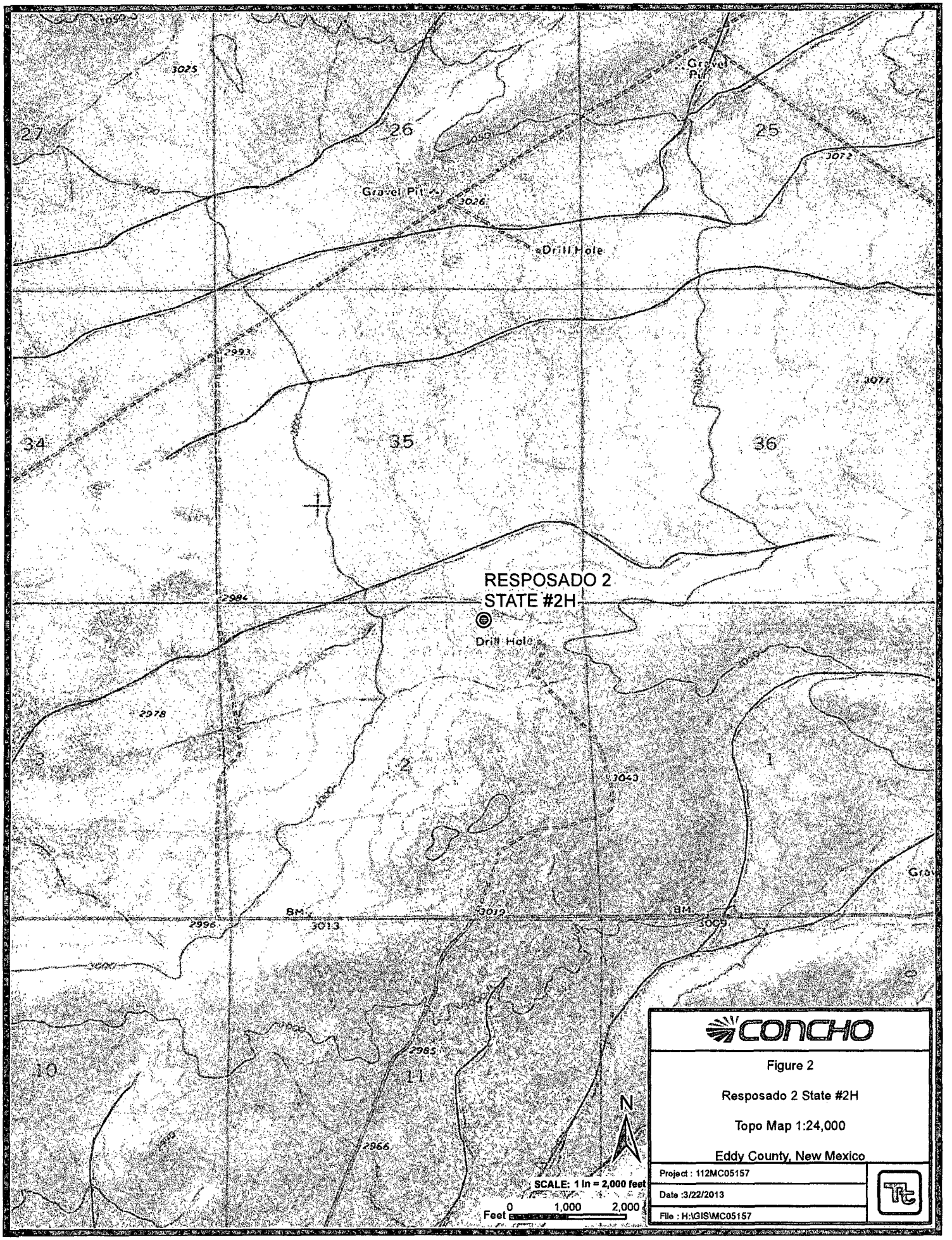
Ike Tavarez, PG
Senior Project Manager

cc: Robert McNeill – COG
Danny Franco - Sahara

Figures



Drawn By: Isabel Marmolejo



CONCHO

Figure 2

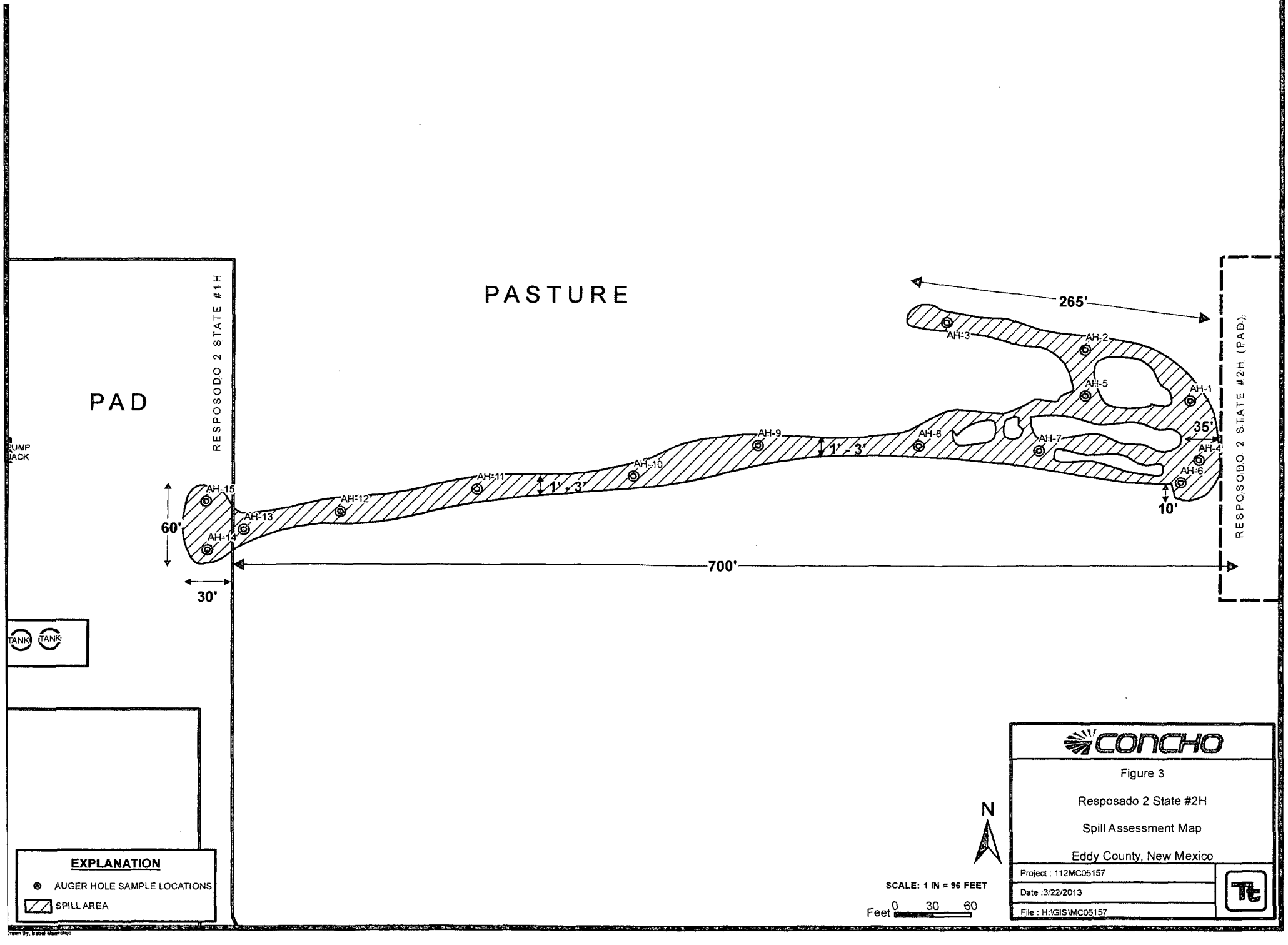
Resposado 2 State #2H

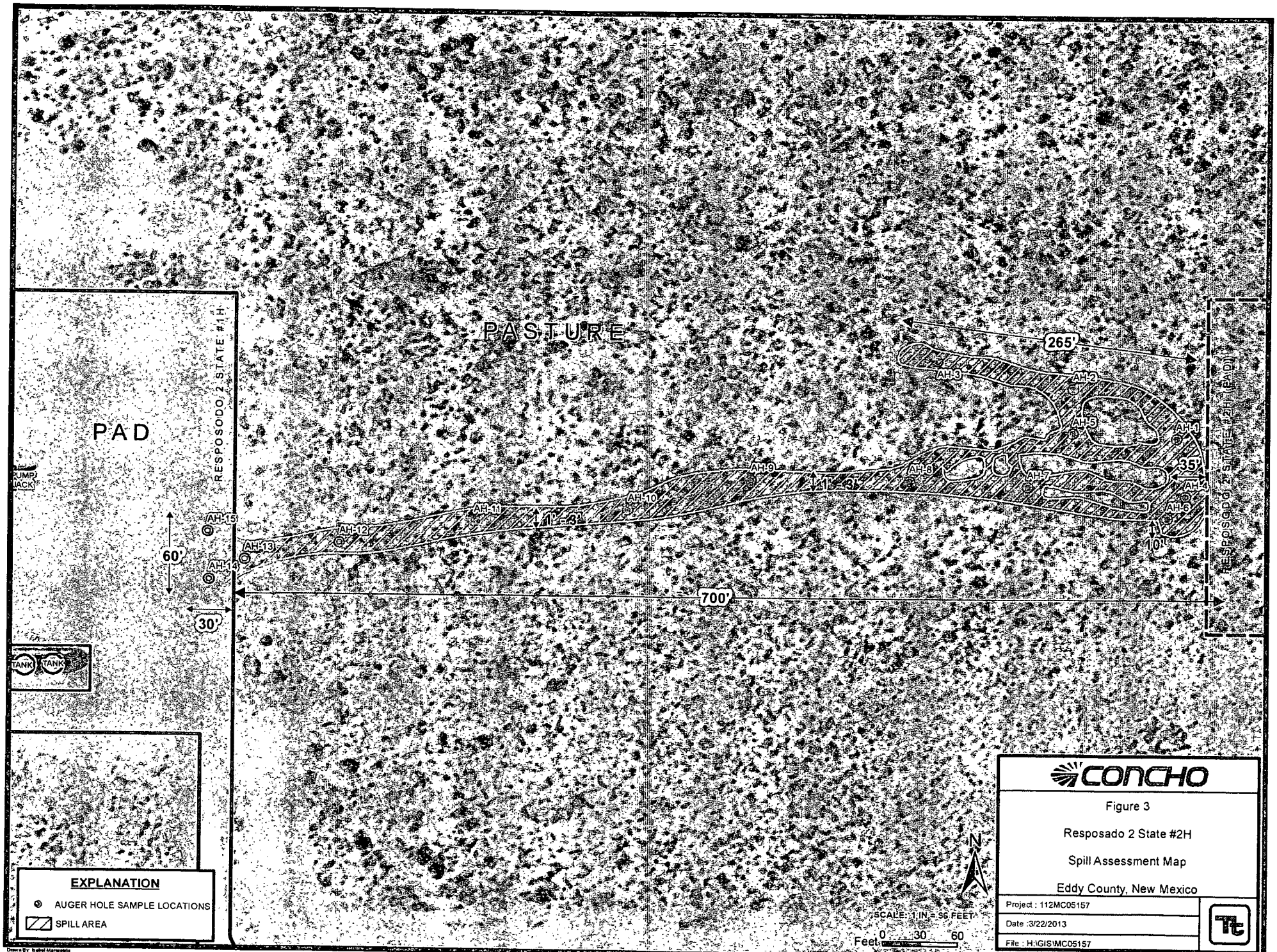
Topo Map 1:24,000

Eddy County, New Mexico

Project : 112MC05157	
Date :3/22/2013	
File : H:\GIS\MC05157	

Drawn By: Isabel Marmolejo


PASTURE
PAD
RESPOSODO 2 STATE #1H
RESPOSODO 2 STATE #2H (PAD)
PUMP JACK
TANK
TANK
AH-1
AH-2
AH-3
AH-4
AH-5
AH-6
AH-7
AH-8
AH-9
AH-10
AH-11
AH-12
AH-13
AH-14
AH-15
265'
35'
10'
1' - 3'
1' - 3'
60'
30'
700'
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
SPILL AREA
N
SCALE: 1 IN = 96 FEET
Feet 0 30 60
CONCHO
Figure 3
Resposado 2 State #2H
Spill Assessment Map
Eddy County, New Mexico
Project : 112MC05157
Date :3/22/2013
File : H:\GIS\MC05157


PASTURE
PAD
RESPOSODO 2 STATE #1H
RESPOSODO 2 STATE #2H (PLUG)
PUMP JACK
TANK
TANK
265'
700'
60'
30'
35'
10'
11' - 3'
11' - 3'
AH-1
AH-2
AH-3
AH-4
AH-5
AH-6
AH-7
AH-8
AH-9
AH-10
AH-11
AH-12
AH-13
AH-14
AH-15
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
SPILL AREA
N
SCALE: 1 IN. = 96 FEET
Feet 0 30 60
CONCHO
Figure 3
Resposado 2 State #2H
Spill Assessment Map
Eddy County, New Mexico
Project : 112MC05157
Date :3/22/2013
File : H:\GIS\MC05157

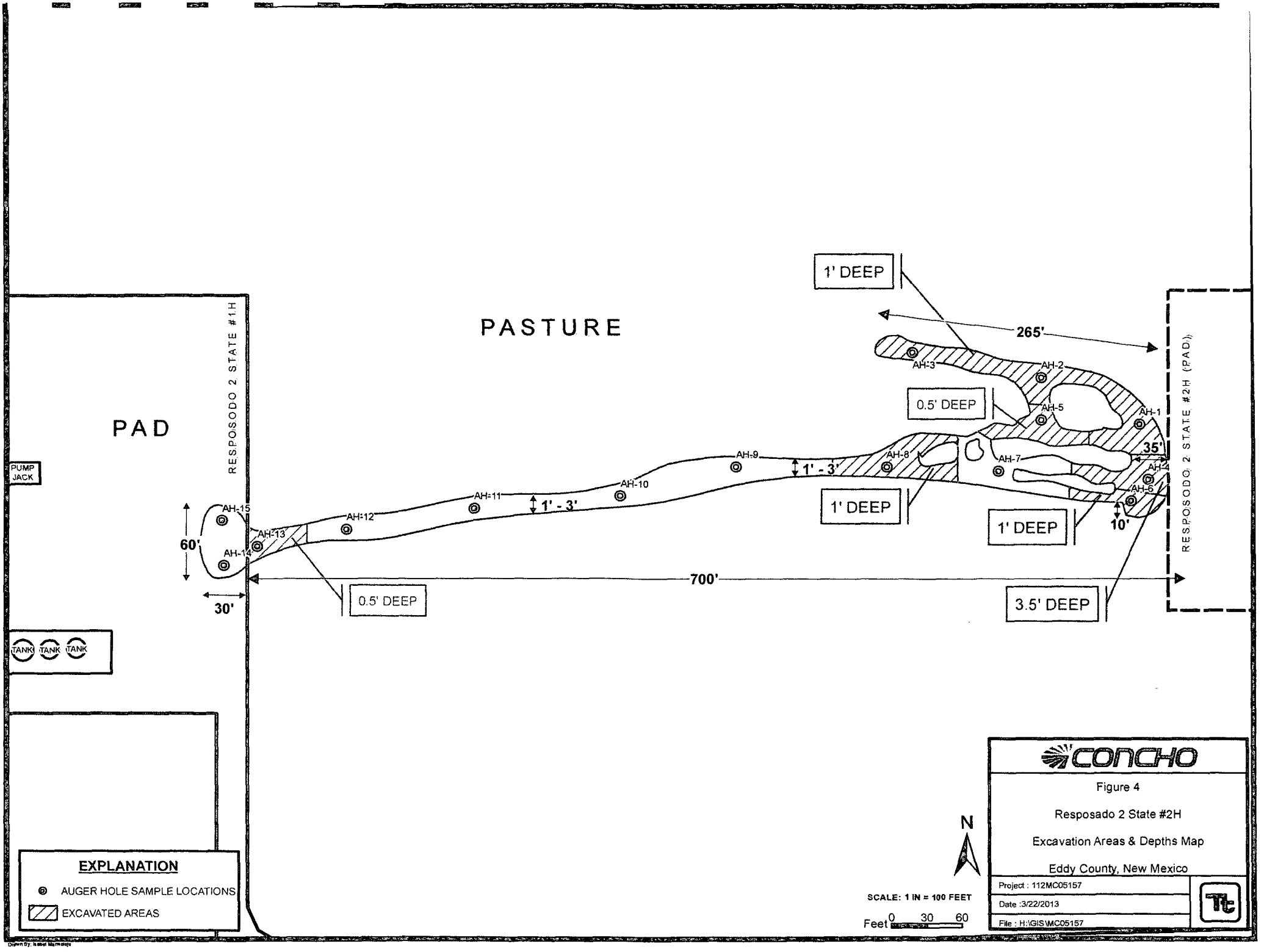

PASTURE
PAD
RESPOSODO 2 STATE #1H
RESPOSODO 2 STATE #2H (PAD)
PUMP JACK
TANK
TANK
TANK
1' DEEP
265'
AH-3
AH-2
0.5' DEEP
AH-5
AH-1
35'
AH-9
AH-8
AH-7
AH-4
AH-6
1' - 3'
AH-10
AH-11
AH-12
AH-13
AH-14
AH-15
60'
1' DEEP
1' DEEP
10'
700'
30'
0.5' DEEP
3.5' DEEP
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
EXCAVATED AREAS
N
SCALE: 1 IN = 100 FEET
Feet 0 30 60
CONCHO
Figure 4
Resposado 2 State #2H
Excavation Areas & Depths Map
Eddy County, New Mexico
Project : 112MC05157
Date :3/22/2013
File : H:\GIS\MC05157

Table 1
COG Operating LLC.
Resposado 2 State #2H
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	3/13/2013	0-1	1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,900
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	263
AH-2	3/13/2013	0-1	1.0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,060
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	<20.0
AH-3	3/13/2013	0-1	1.0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,340
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	<20.0
AH-4	3/13/2013	0-1	0.5		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	437
	"	1-1.5	"		X	-	-	-	-	-	-	-	-	795
	"	2-2.5	"		X	-	-	-	-	-	-	-	-	1,220
AH-4 Bottomhole	12/19/2013	3.5	3.5	X		-	-	-	-	-	-	-	-	2,070
AH-5	3/13/2013	0-1	0.5		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,140
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	1,490
AH-5 Bottomhole	12/19/2013	0.5	0.5	X		-	-	-	-	-	-	-	-	370
AH-6	3/13/2013	0-1	1.0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,400
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	682
AH-7	3/13/2013	0-1	0.5	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	84.7
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	144
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	269

Table 1
COG Operating LLC.
Resposado 2 State #2H
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-8	3/13/2013	0-1	1.0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,520
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	129
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	64.7
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	294
AH-9	3/13/2013	0-1	1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	498
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	743
AH-10	3/13/2013	0-1	1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	291
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	128
AH-11	3/13/2013	0-1	1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	547
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	773
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	650
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	24.6
	"	4-4.5	"	X		-	-	-	-	-	-	-	-	24.6
AH-12	3/13/2013	0-1	1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	123
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	93.6
AH-13	3/13/2013	0-1	0.5		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,690
AH-13 Bottomhole	12/19/2013	0.5	0.5	X		-	-	-	-	-	-	-	-	180

Table 1
COG Operating LLC.
Resposado 2 State #2H
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-14	3/13/2013	0-1	scrape	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	531
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	157
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	<20.0
	"	3-3.5	"	X		-	-	-	-	-	-	-	-	147
AH-15	3/13/2013	0-1	scrape	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	123
	"	1-1.5	"	X		-	-	-	-	-	-	-	-	59.0
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	113

(-) Not Analyzed

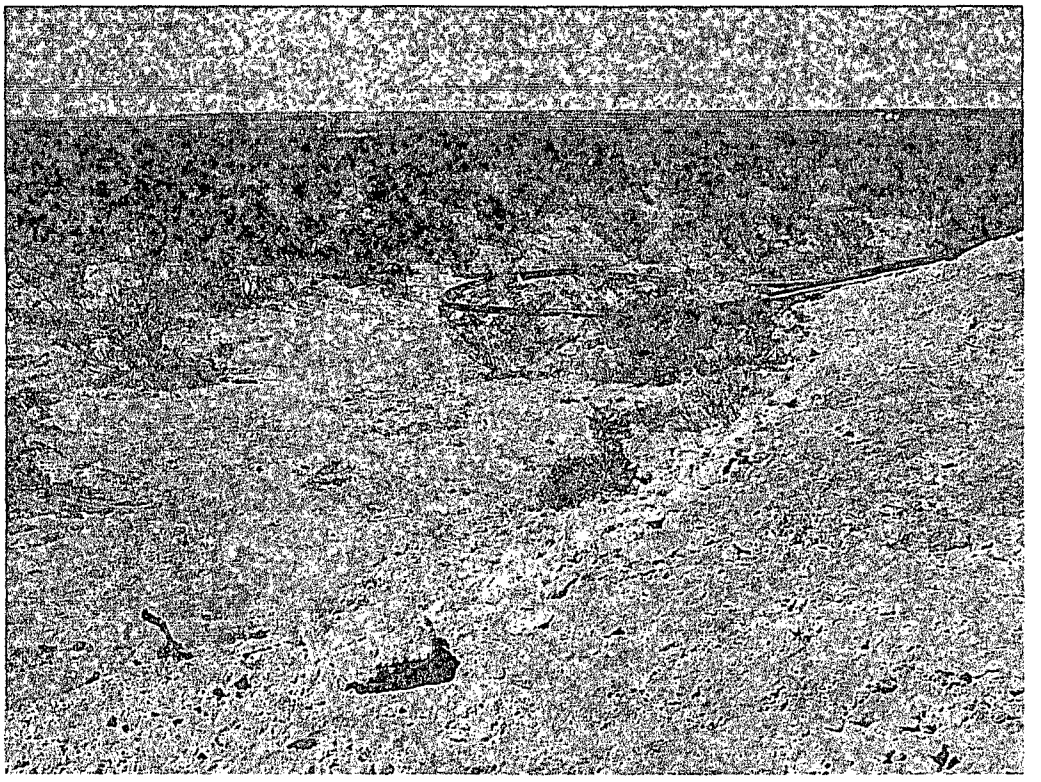
Excavated Depths

(BEB) Below Excavation Bottom

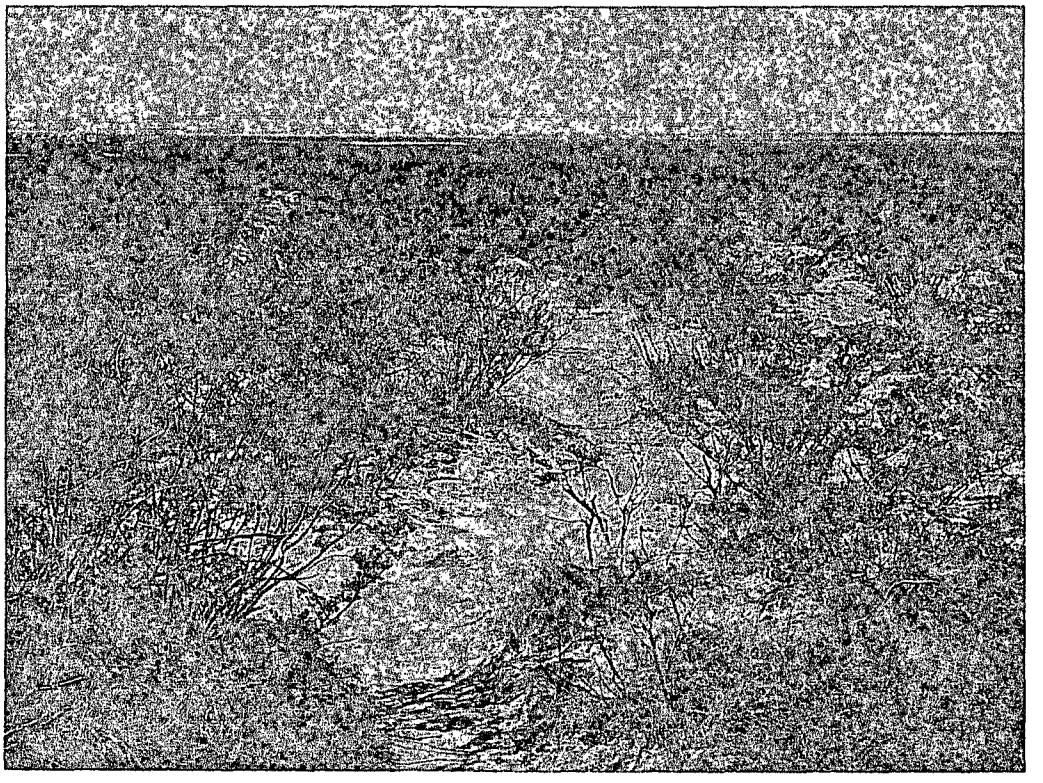
Photos

COG Operating LLC
Resposado 2 State #2H
Eddy County, New Mexico

TETRA TECH



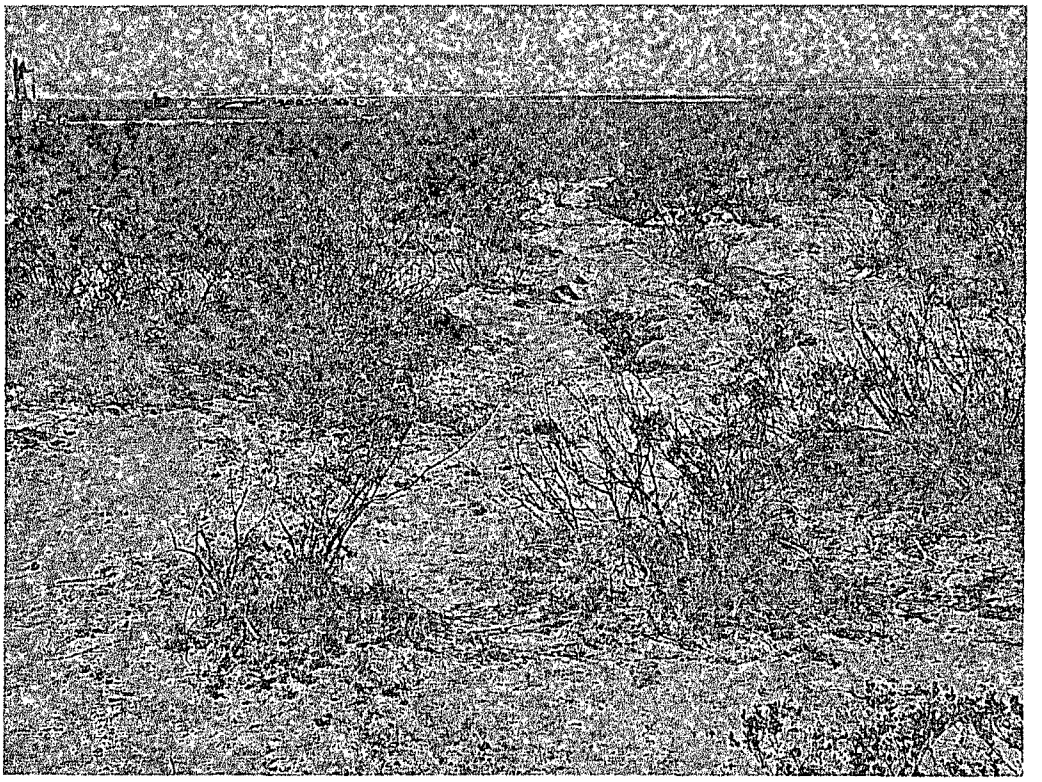
View Northwest – Area of AH-1



View West – Area of AH-2

COG Operating LLC
Resposado 2 State #2H
Eddy County, New Mexico

TETRA TECH



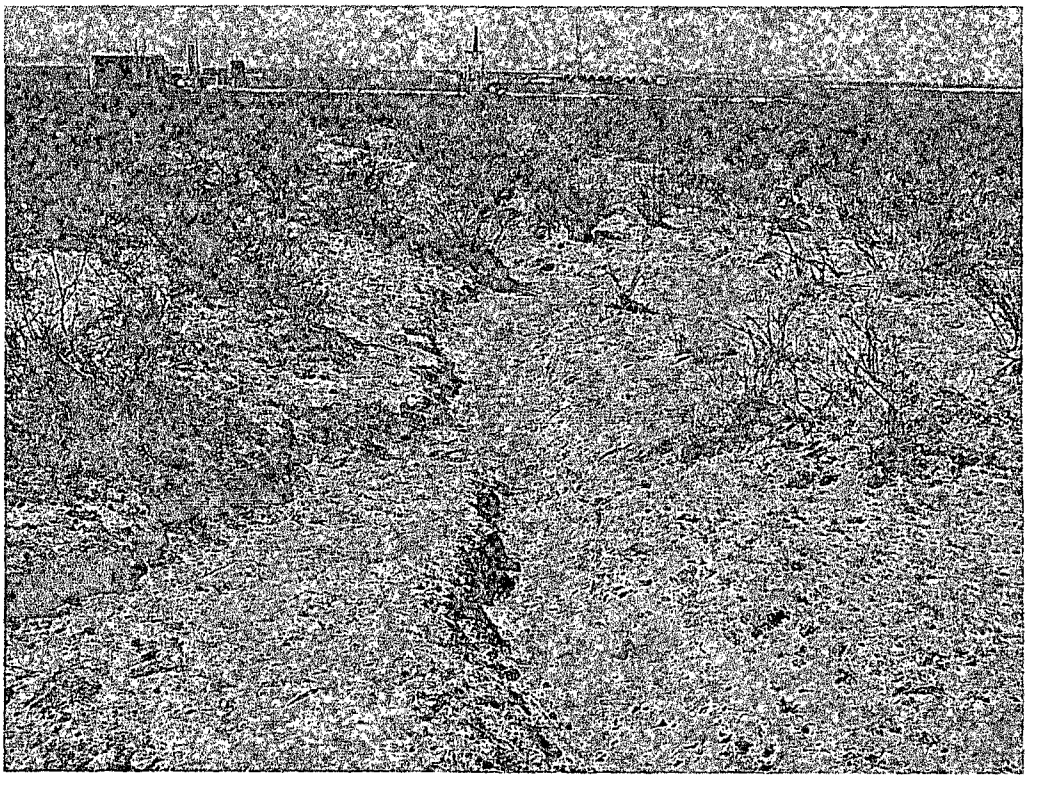
View West – Area of AH-3

View South – Area of AH-4 and AH-6

COG Operating LLC
Resposado 2 State #2H
Eddy County, New Mexico

TETRA TECH

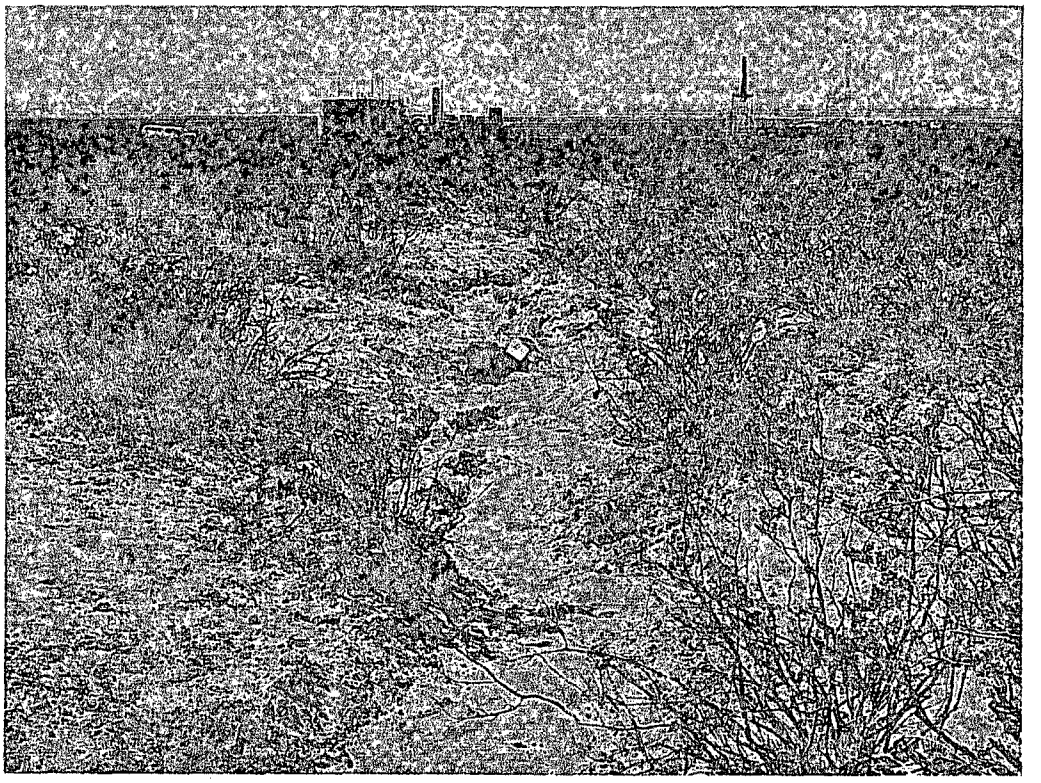
View North – Area of AH-5



View West – Area of AH-7

COG Operating LLC
Resposado 2 State #2H
Eddy County, New Mexico

TETRA TECH

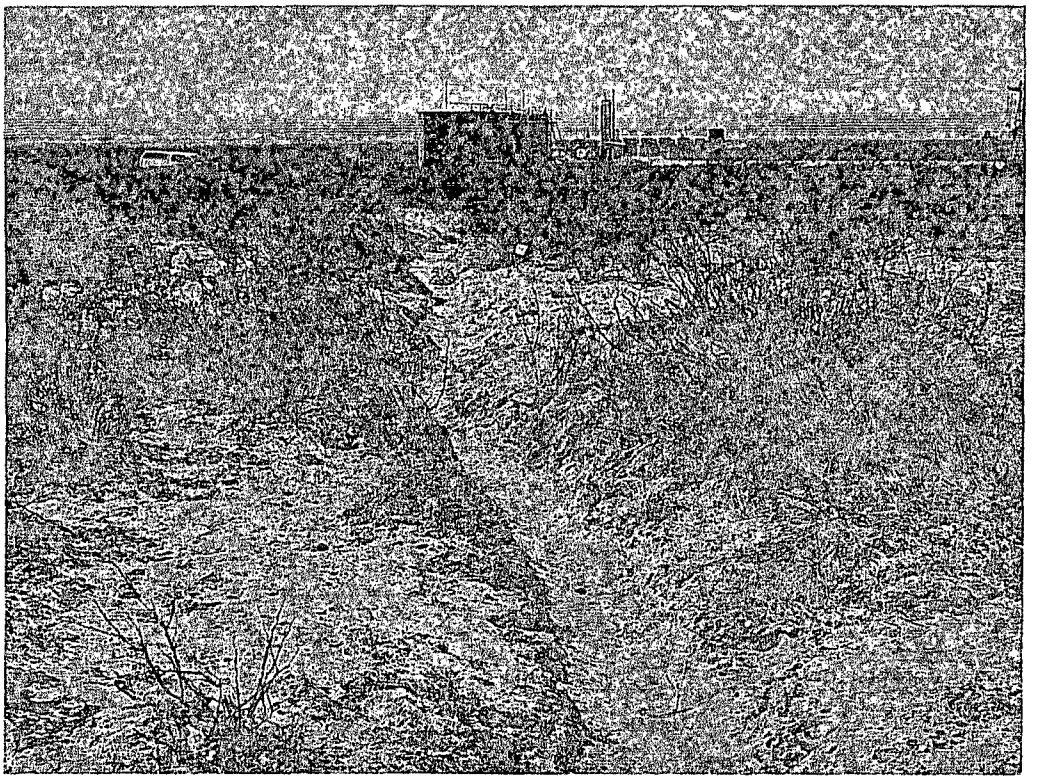


View West – Area of AH-8

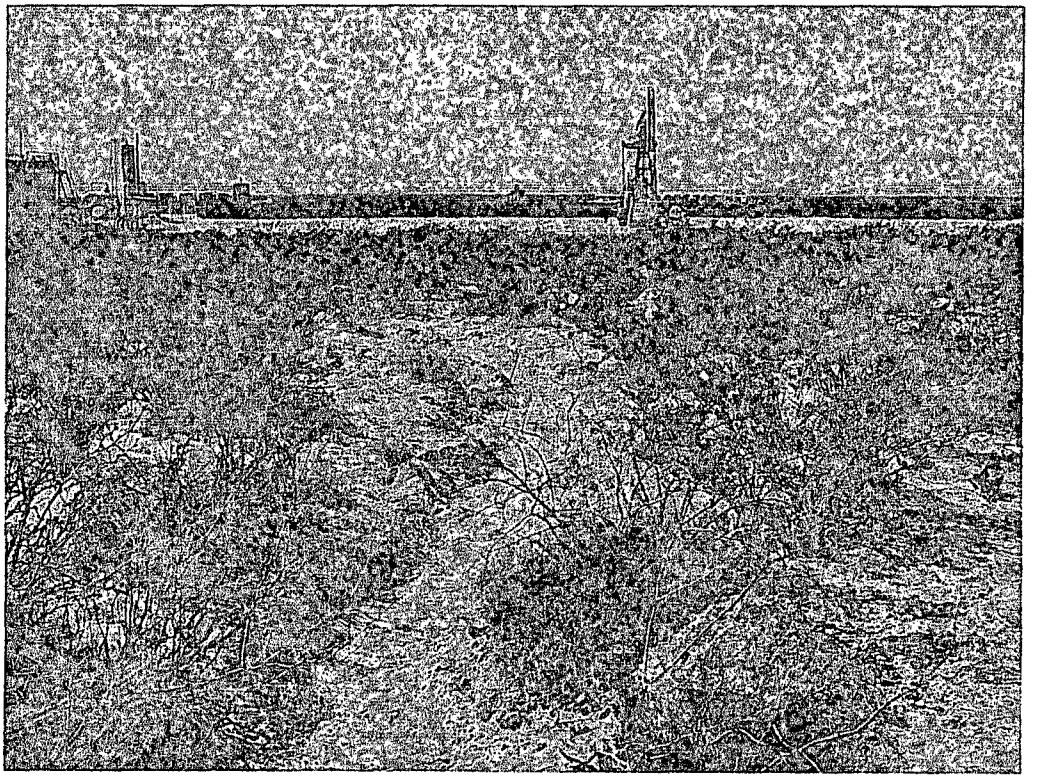
View West – Area of AH-9

COG Operating LLC
Resposado 2 State #2H
Eddy County, New Mexico

TETRA TECH



View West – Area of AH-10

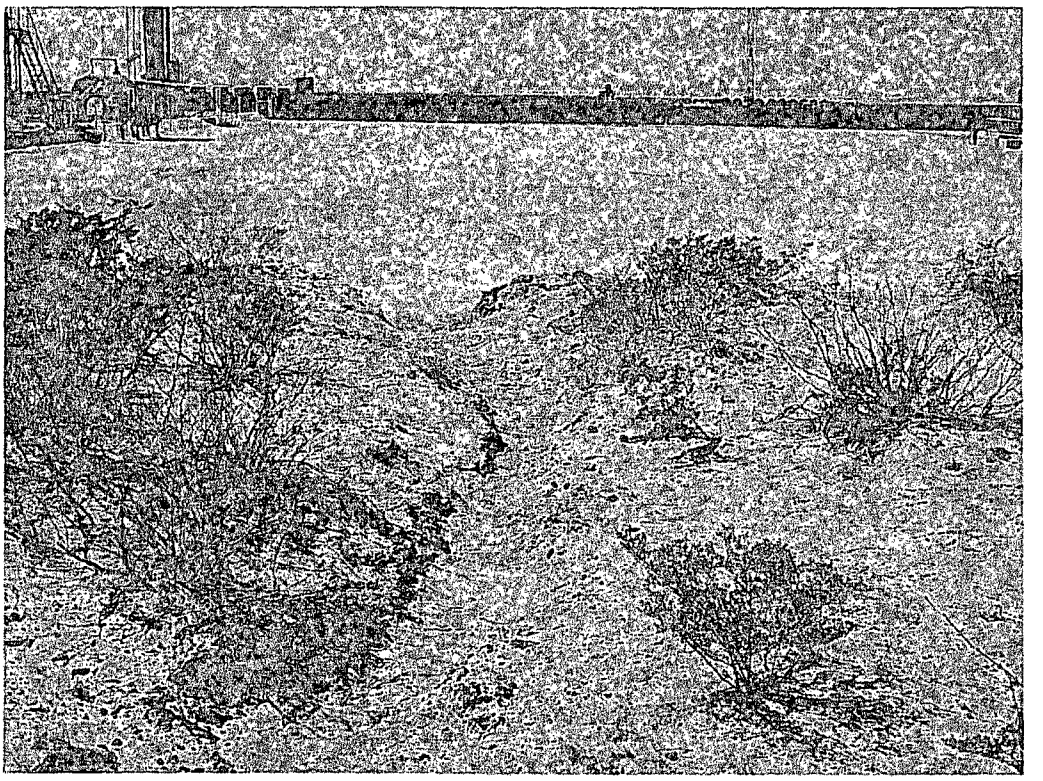


View West – Area of AH-11

COG Operating LLC
Resposado 2 State #2H
Eddy County, New Mexico

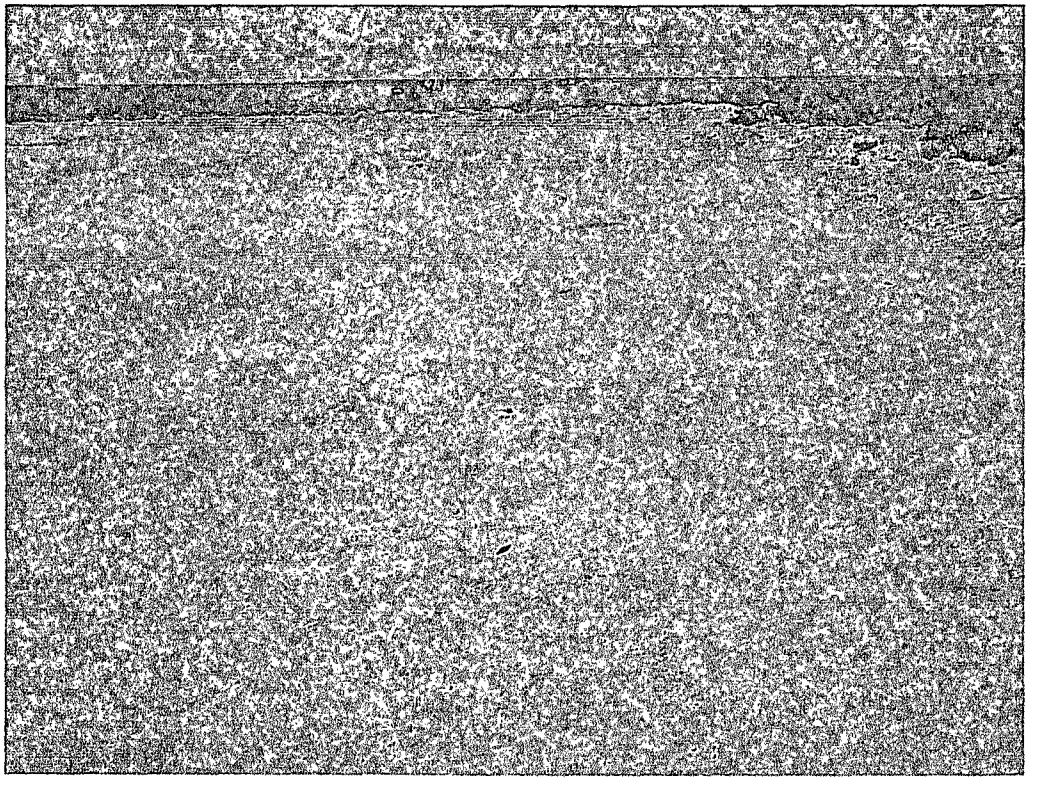
TETRA TECH

View West – Area of AH-12



View West – Area of AH-13

COG Operating LLC
Resposado 2 State #2H
Eddy County, New Mexico



View North – Area of AH-14 and AH-15

TETRA TECH

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **COG Operating LLC**	Contact **Pat Ellis**
Address **550 W. Texas, Suite 1300 Midland, Texas 79701**	Telephone No. **(432) 685-4332**
Facility Name RESPOSADO 2 STATE #2H	Facility Type **WELL PAD**

Surface Owner: STATE	Mineral Owner	Lease No. (API) 30-015-39455

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	2	26S	29E					

Latitude N 32 03.745 **Longitude** W 103 59.929

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 100 bbls	Volume Recovered 5 bbls
Source of Release: Water Transport Truck	Date and Hour of Occurrence 2/13/13	Date and Hour of Discovery 2/13/2013 3:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Mike Bratcher - OCD**	
By Whom? Josh Russo	Date and Hour 2-14-13 2:32 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

RECEIVED
MAR 05 2014
NMOCD ARTESIA

Describe Cause of Problem and Remedial Action Taken.*

The water transport truck appeared to have a clogged filter and screen on his trailer. The truck released fluids on the Resposado 2 State #2H location and pasture. The filter and screen have been cleaned and replaced. The trucking company is responsible for the release.

Describe Area Affected and Cleanup Action Taken.*

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

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 1-14-14 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	RESPOSADO 2 STATE #2H	Facility Type	WELL PAD

Surface Owner STATE	Mineral Owner	Lease No. (API) 30-015-39455

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	2	26S	29E					EDDY

Latitude 32 03.745 **Longitude** 103 59.929

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 100bbls	Volume Recovered 5bbls
Source of Release Water transport truck	Date and Hour of Occurrence 2/13/2013	Date and Hour of Discovery 2/13/2013 3:00am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - OCD	
By Whom? Michelle Mullins	Date and Hour 02/14/2013 2:32pm	
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 water transport truck appeared to have a clogged filter and screen on his trailer. The truck released fluids on the RESPOSADO 2 STATE #2H location and pasture. The filter and screen have been cleaned and replaced. The trucking company is responsible for the release.

Describe Area Affected and Cleanup Action Taken.*

Initially an estimated 100bbls were released from transfer truck due to clogged filter and screen. We were able to recover 5bbls of fluid with a vacuum truck. The spill area is located on the location and the adjacent pasture. 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 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: 02-22-2013 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Resposado 2 State #2H
Eddy County, New Mexico

25 South 28 East

6	5 59	4 35	3 Site 32	2	1 Site
7	8	9	10	11	12
18 67	17	16	15 48 48	14	13
19	20 86	21	22	23	24
30	29 15	28 80	27	26 30	25
31	32	33	34	35	36 40

25 South 29 East

6 40	5	4	3	2	1
7	8	9	10 40	11	12
18	17	16	15 60	14	13
19	20	21	22	23	24
30 30	29	28	27	26	25
31	32	33	34	35	36

25 South 30 East

6	5	4	3	2	1
7 264	8	9 295	10	11	12 390
18	17	16	15	14	13
19	20	21 265 258	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 28 East

6	5	4	3	2 120 21	1
7	8	9	10	11	12 100
18	17	16	15	14 120	13 56
19	20	21	22 120	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 125	15	14	13
19	20	21	22 57 69Site	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 30 East

6	5 179 180	4	3	2	1
7	8 172	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24 180
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: March 26, 2013

Work Order: 13031823

Project Location: Eddy Co., NM
Project Name: COG/Resposado 2 State # 2H
Project #: 112MC05157

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
323755	AH-1 0-1'	soil	2013-03-13	00:00	2013-03-18
323756	AH-1 1-1.5'	soil	2013-03-13	00:00	2013-03-18
323757	AH-2 0-1' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323758	AH-2 1-1.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323759	AH-3 0-1' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323760	AH-3 1-1.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323761	AH-4 0-1' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323762	AH-4 1-1.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323763	AH-4 2-2.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323764	AH-5 0-1' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323765	AH-5 1-1.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323766	AH-6 0-1' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323767	AH-6 1-1.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323768	AH-7 0-1' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323769	AH-7 1-1.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323770	AH-7 2-2.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323771	AH-8 0-1' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323772	AH-8 1-1.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323773	AH-8 2-2.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323774	AH-8 3-3.5' 0.5' BEB	soil	2013-03-13	00:00	2013-03-18
323775	AH-9 0-1' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323776	AH-9 1-1.5' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323777	AH-10 0-1' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323778	AH-10 1-1.5' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323779	AH-11 0-1' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323780	AH-11-1.5' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323781	AH-11 2-2.5' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323782	AH-11 3-3.5' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323783	AH-11 4-4.5' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323784	AH-12 0-1' 1' BEB	soil	2013-03-13	00:00	2013-03-18

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
323785	AH-12 1-1.5' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323786	AH-13 0-1' 1' BEB	soil	2013-03-13	00:00	2013-03-18
323787	AH-14 0-1' Scrape	soil	2013-03-13	00:00	2013-03-18
323788	AH-14 1-1.5' Scrape	soil	2013-03-13	00:00	2013-03-18
323789	AH-14 2-2.5' Scrape	soil	2013-03-13	00:00	2013-03-18
323790	AH-14 3-3.5' Scrape	soil	2013-03-13	00:00	2013-03-18
323791	AH-15 0-1' Scrape	soil	2013-03-13	00:00	2013-03-18
323792	AH-15 1-1.5' Scrape	soil	2013-03-13	00:00	2013-03-18
323793	AH-15 2-2.5' Scrape	soil	2013-03-13	00:00	2013-03-18

	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)
323755 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Qs
323757 - AH-2 0-1' 0.5' BEB	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Qs
323759 - AH-3 0-1' 0.5' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323761 - AH-4 0-1' 0.5' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323764 - AH-5 0-1' 0.5' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323766 - AH-6 0-1' 0.5' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323768 - AH-7 0-1' 0.5' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323771 - AH-8 0-1' 0.5' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323775 - AH-9 0-1' 1' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323777 - AH-10 0-1' 1' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323779 - AH-11 0-1' 1' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323784 - AH-12 0-1' 1' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323786 - AH-13 0-1' 1' BEB	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323787 - AH-14 0-1' Scrape	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00
323791 - AH-15 0-1' Scrape	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<0.0200 Qs	<50.0	<4.00

Sample: 323755 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**1900**	mg/Kg	4

Sample: 323756 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**263**	mg/Kg	4

Sample: 323757 - AH-2 0-1' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**1060**	mg/Kg	4

Sample: 323758 - AH-2 1-1.5' 0.5' BEB

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

Sample: 323759 - AH-3 0-1' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**1340**	mg/Kg	4

Sample: 323760 - AH-3 1-1.5' 0.5' BEB

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

Sample: 323761 - AH-4 0-1' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**437**	mg/Kg	4

Sample: 323762 - AH-4 1-1.5' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**795**	mg/Kg	4

Sample: 323763 - AH-4 2-2.5' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**1220**	mg/Kg	4

Sample: 323764 - AH-5 0-1' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**1140**	mg/Kg	4

Sample: 323765 - AH-5 1-1.5' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**1490**	mg/Kg	4

Sample: 323766 - AH-6 0-1' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**1400**	mg/Kg	4

Sample: 323767 - AH-6 1-1.5' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**682**	mg/Kg	4

Sample: 323768 - AH-7 0-1' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**84.7**	mg/Kg	4

Sample: 323769 - AH-7 1-1.5' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**144**	mg/Kg	4

Sample: 323770 - AH-7 2-2.5' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**269**	mg/Kg	4

Sample: 323771 - AH-8 0-1' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**1520**	mg/Kg	4

Sample: 323772 - AH-8 1-1.5' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**129**	mg/Kg	4

Sample: 323773 - AH-8 2-2.5' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**64.7**	mg/Kg	4

Sample: 323774 - AH-8 3-3.5' 0.5' BEB

Param	Flag	Result	Units	RL
Chloride		**294**	mg/Kg	4

Sample: 323775 - AH-9 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**498**	mg/Kg	4

Sample: 323776 - AH-9 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**743**	mg/Kg	4

Sample: 323777 - AH-10 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**291**	mg/Kg	4

Sample: 323778 - AH-10 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**128**	mg/Kg	4

Sample: 323779 - AH-11 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**547**	mg/Kg	4

Sample: 323780 - AH-11-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**773**	mg/Kg	4

Sample: 323781 - AH-11 2-2.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**650**	mg/Kg	4

Sample: 323782 - AH-11 3-3.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**24.6**	mg/Kg	4

Sample: 323783 - AH-11 4-4.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**24.6**	mg/Kg	4

Sample: 323784 - AH-12 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**123**	mg/Kg	4

Sample: 323785 - AH-12 1-1.5' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**93.6**	mg/Kg	4

Sample: 323786 - AH-13 0-1' 1' BEB

Param	Flag	Result	Units	RL
Chloride		**1690**	mg/Kg	4

Sample: 323787 - AH-14 0-1' Scrape

Param	Flag	Result	Units	RL
Chloride		**531**	mg/Kg	4

Sample: 323788 - AH-14 1-1.5' Scrape

Param	Flag	Result	Units	RL
Chloride		**157**	mg/Kg	4

Sample: 323789 - AH-14 2-2.5' Scrape

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

Sample: 323790 - AH-14 3-3.5' Scrape

Param	Flag	Result	Units	RL
Chloride		**147**	mg/Kg	4

Sample: 323791 - AH-15 0-1' Scrape

Param	Flag	Result	Units	RL
Chloride		**123**	mg/Kg	4

Sample: 323792 - AH-15 1-1.5' Scrape

Param	Flag	Result	Units	RL
Chloride		**59.0**	mg/Kg	4

Sample: 323793 - AH-15 2-2.5' Scrape

Param	Flag	Result	Units	RL
Chloride		**113**	mg/Kg	4

Summary Report

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

Report Date: December 31, 2013

Work Order: 13123011

Project Location: Eddy Co., NM
Project Name: Sahara Trucking/COG/Resposado 2 State # 2H
Project #: 112MC05157

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
350238	AH-4 (3.5' BH)	soil	2013-12-19	00:00	2013-12-30
350239	AH-5 (6" BH)	soil	2013-12-19	00:00	2013-12-30
350240	AH-13 (6" BH)	soil	2013-12-19	00:00	2013-12-30

Sample: 350238 - AH-4 (3.5' BH)

Param	Flag	Result	Units	RL
Chloride		**2070**	mg/Kg	4

Sample: 350239 - AH-5 (6" BH)

Param	Flag	Result	Units	RL
Chloride		**370**	mg/Kg	4

Sample: 350240 - AH-13 (6" BH)

Param	Flag	Result	Units	RL
Chloride		**180**	mg/Kg	4