SITE INFORMATION

Report Type: Work Plan

General Site Information:		
Site:	SRO SWD #101	
Company:	COG Operating LLC	
Section, Township and Range	Unit G Sec 5 T-26S R-28E	
Lease Number:	API #30-015-26105	
County:	Eddy County	
GPS:	32.07323° N	104.10709° W
Surface Owner:	State	
Mineral Owner:		
Directions:	From Malaga, NM at the intersection of Hwy 285 and Sunrise Road travel south onHwy 285 for 11 miles, turn right on White City Road 2.5 mi, right 0.5 mi to location	
	2RP-597	2RP-619

Release Data:	Spill #1	Spill #2
Date Released:	1/22/2011	2/20/2011
Type Release:	Produced Water	Produced Water
Source of Contamination:	Transfer pump on wrong line	Victaulic connection ruptured
Fluid Released:	180 bbls	200 bbls
Fluids Recovered:	130 bbls	100 bbls

Official Communication:			
Name:	Pat Ellis		Kim Dorey
Company:	COG Operating, LLC		Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300		1910 N. Big Spring
P.O. Box			
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 631-0348
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		kim.dorey@tetratech.com

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

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	100

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AUG 11 2011
NMOCD ARTESIA

TETRA TECH

July 5, 2011

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

Re: Work Plan for the COG Operating LLC., State SRO #101 SWD, Unit G, Section 5, Township 26 South, Range 28 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess two spills from the State SRO #101 SWD, Unit G, Section 5, Township 26 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.07323°, W 104.10709°. The site location is shown on Figures 1 and 2.

Background

Spill #1

According to the State of New Mexico C-141 Initial Report, the leak was discovered on January 22, 2011, and released approximately 180 barrels of produced water due to the water transfer pump being tied in into the wrong disposal line and recovered 130 barrels. To alleviate the problem, the pump was installed on the correct line.

The spill initiated inside the tank battery (lined facility) and impacted a path in front of the battery, measuring a length of approximately 240' and width of 10' to 40' wide. The spill migrated off the pad into the east and west pasture measuring approximately 40' x 40' and 20' X 75', respectively. The initial C-141 form is enclosed in Appendix A.

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

Spill #2

According to the State of New Mexico C-141 Initial Report, the leak was discovered on February 20, 2011, and released approximately 200 barrels of produced water due to a Victaulic connection rupturing. COG recovered 100 barrels of fluid. To alleviate the problem, the line was re-routed and returned to service.

The spill initiated outside the tank battery and impacted an area south of the battery measuring approximately 30' x 65'. The spill migrate across the pad (3 inches wide) and off the northwest edge of the pad impacting an area approximate length of 200', with a width of 3.0'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 5. Based on the site location and NMOCD groundwater map, the average depth to groundwater in this area is less than 50' below surface. The well information is shown in Appendix 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-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 100 mg/kg.

Soil Assessment and Analytical Results

Spill #1

On April 8, 2011, Tetra Tech personnel inspected and sampled the spill area. Eight auger holes (AH-1 through AH-8) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by

EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were below the RRAL for TPH and BTEX. The chloride impact did show a shallow impact in the subsurface soils at depth ranging from 1.0' to 3.0' below surface. The area of AH-6 did not show a chloride impact the soils. Auger holes (AH-1 and AH-8) did showed chloride concentrations of 3,620 mg/kg at 5.0'-5.5' and 870 mg/kg at 3.5'4.0', respectively. These areas will require additional delineation.

Spill #2

On May 3, 2011, Tetra Tech personnel inspected and sampled the second spill area. Six auger holes (AH-1 through AH-6) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 2. The auger hole locations are shown on Figure 3.

Referring to Table 2, all of the submitted samples were below the RRAL for TPH and BTEX. Referring to Table 2, the areas of AH-1, AH-2 and AH-3 did show shallow impact and declined with depth. Auger holes (AH-4, AH-5 and AH-6) declined with depth, but were not vertically defined. These areas will require additional delineation.

Work Plan

COG proposes the removal of impacted material to the depth as highlighted in Table 1 and Table 2, and shown on Figure 4. As shown in Table 1, the proposed excavation depths will range from 1.0' to 5.0' below surface in majority of the impacted areas. Based on the results, the areas of Spill #1 (AH-1 and AH-8) and Spill #2 (AH-4, AH-5 and AH-6) will be excavated to the appropriate depths and trenched using a backhoe to define the vertical extent of the chloride impact.

Based on site formation, the proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns. As

such, Tetra Tech will excavate the soils to the maximum extent practicable. If the depths are not reached or if deeper impact is encountered, a 40 mil liner will be installed at depth of 4.0 below surface to cap the impacted area.

If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Project Manager

cc: Pat Ellis – COG
cc:

FIGURES

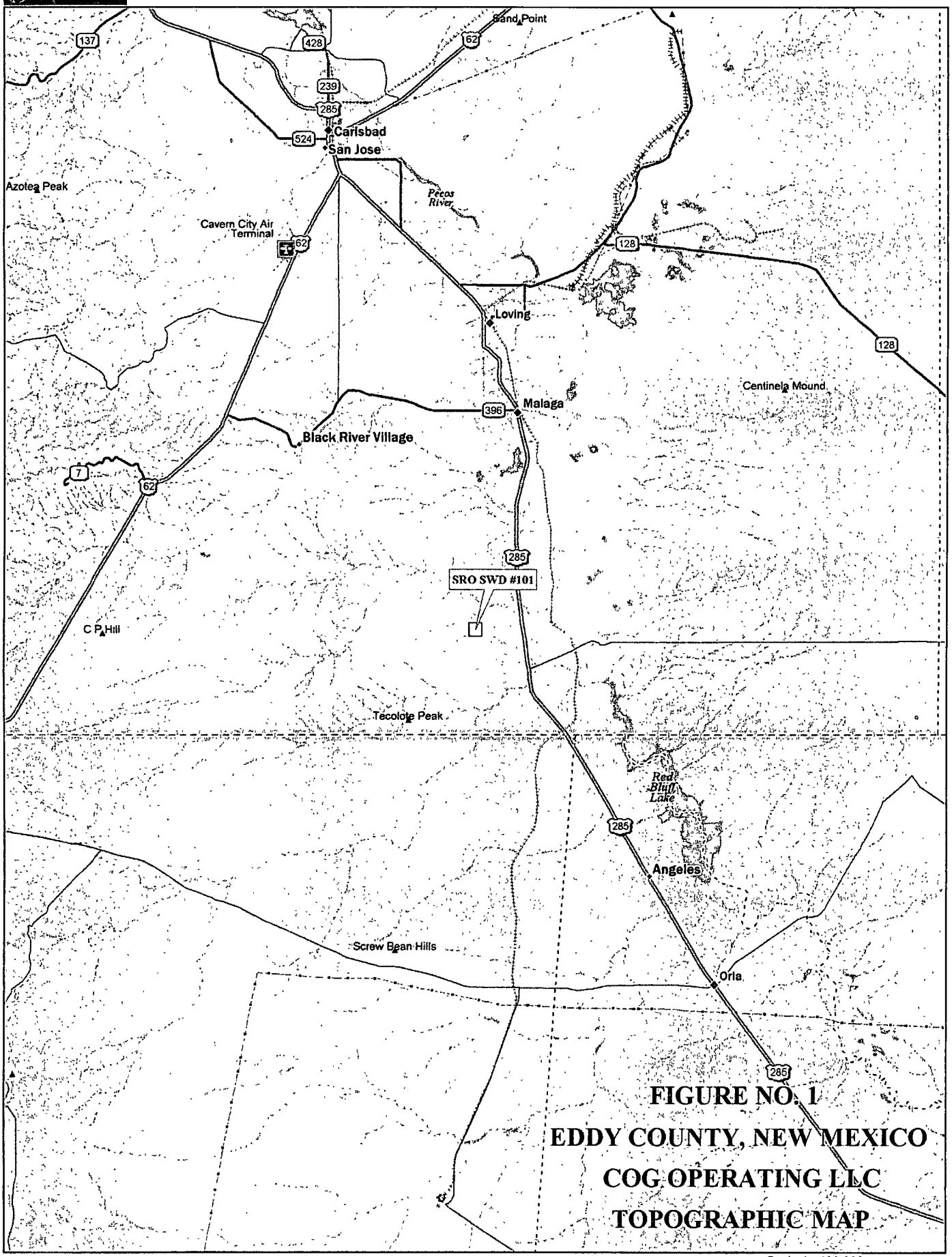


FIGURE NO. 1
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
TOPOGRAPHIC MAP

TN
MN (7.6°E)

Scale 1 : 400,000
0 2 4 6 8 10 mi
0 3 6 9 12 15 km
1" = 6.31 mi
Data Zoom 9-0

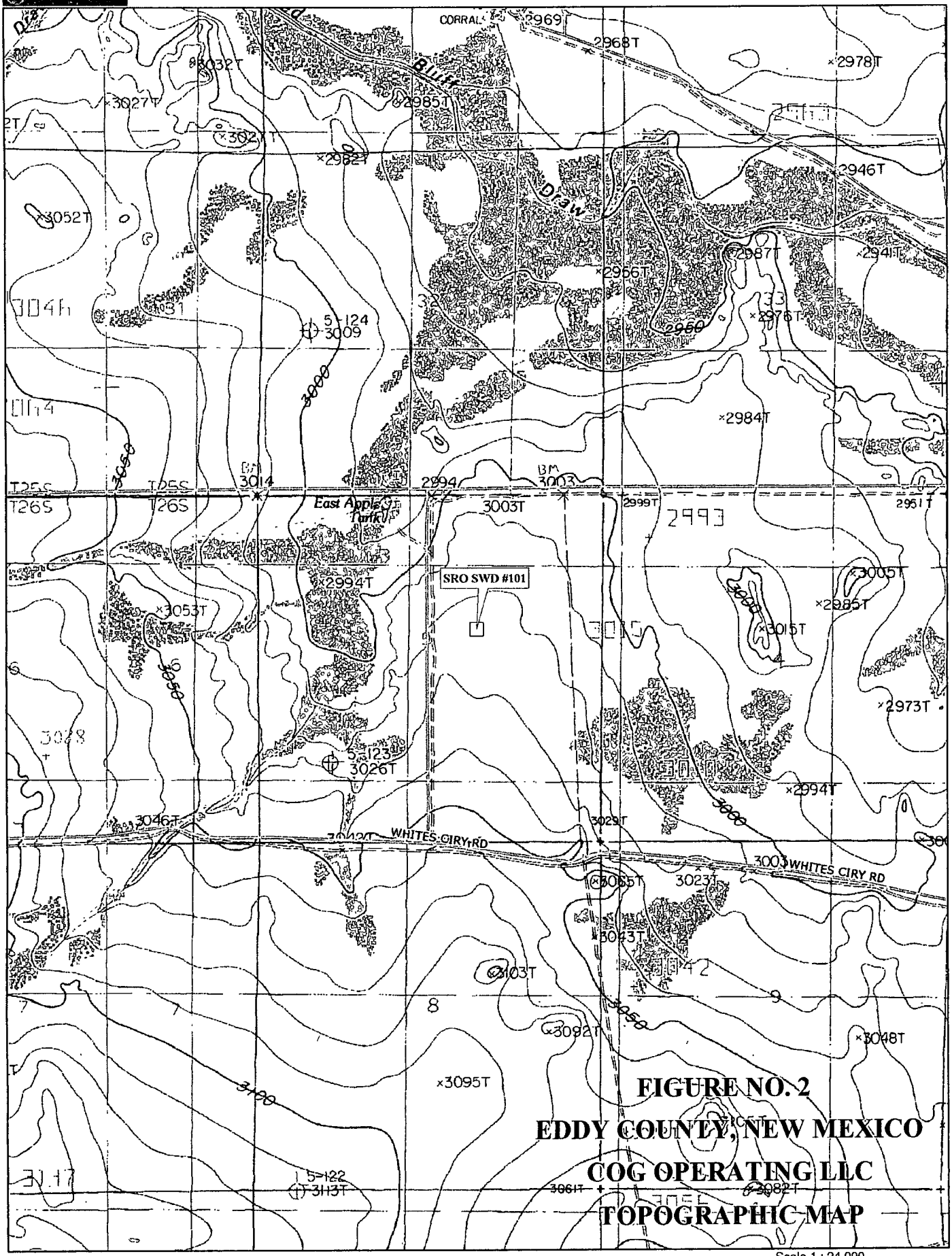


FIGURE NO. 2

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

TOPOGRAPHIC MAP

TN
MN (7.8°E)

Scale 1 : 24,000

1" = 2,000.0 ft Data Zoom 13-0

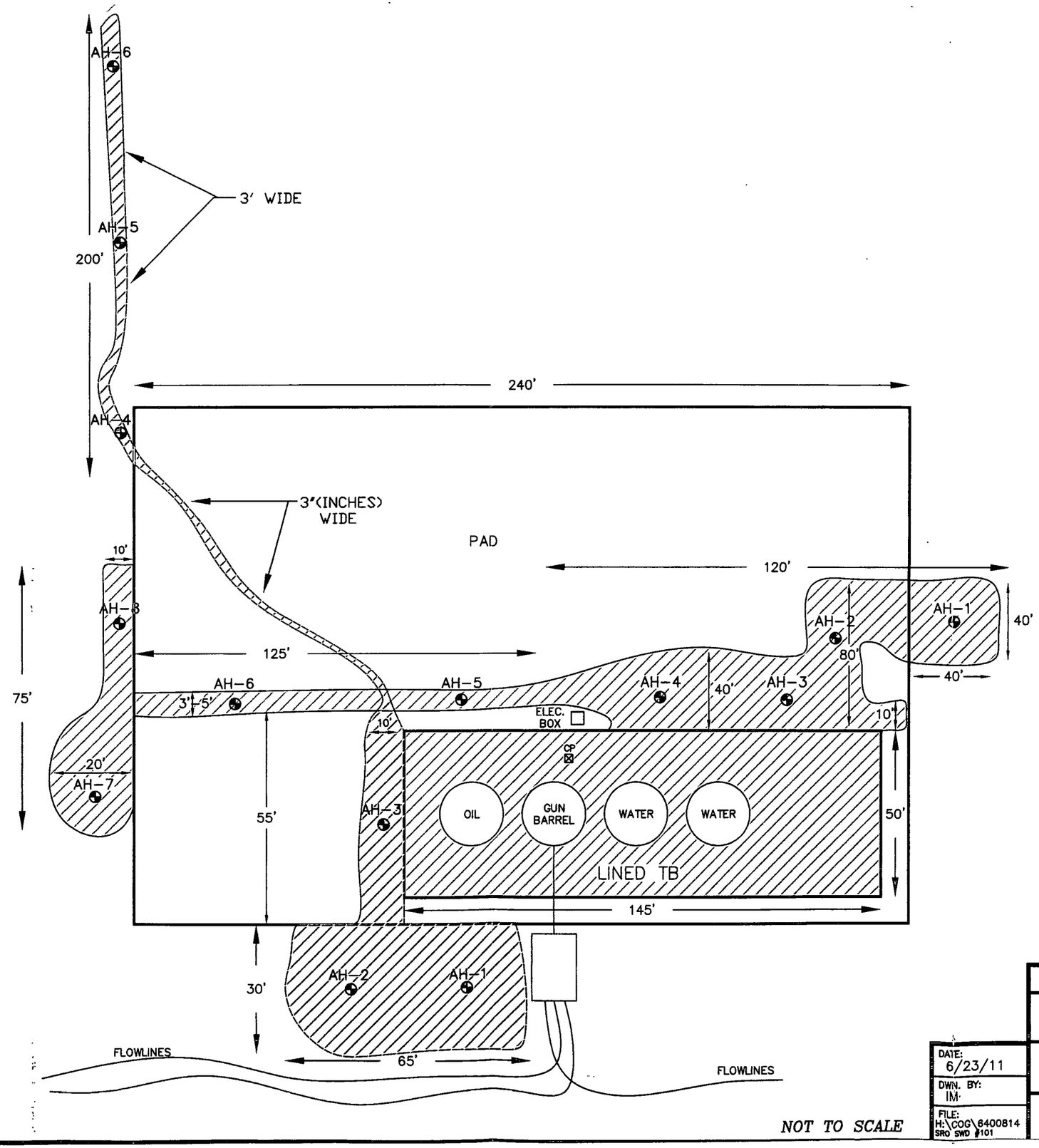


FIGURE NO. 3

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

SRO SWD #101

TETRA TECH, INC.
MIDLAND, TEXAS

DATE: 6/23/11
DWN. BY: IM
FILE: H:\COG\6400814 SRO SWD #101

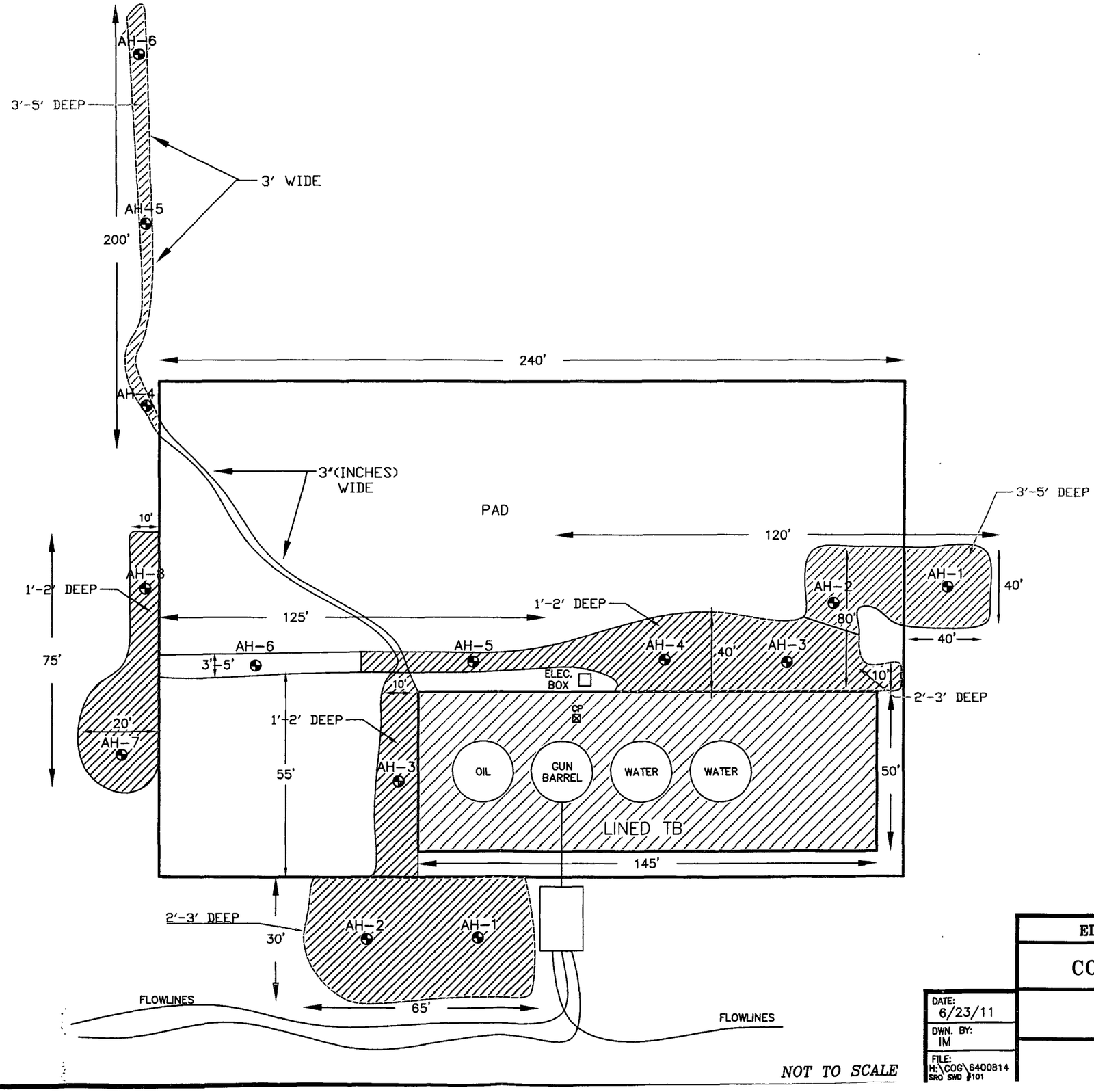


FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

COG OPERATING LLC

SRO SWD #101

DATE: 6/23/11
DWN. BY: IM
FILE: H:\COG\6400814 SRO SWD #101

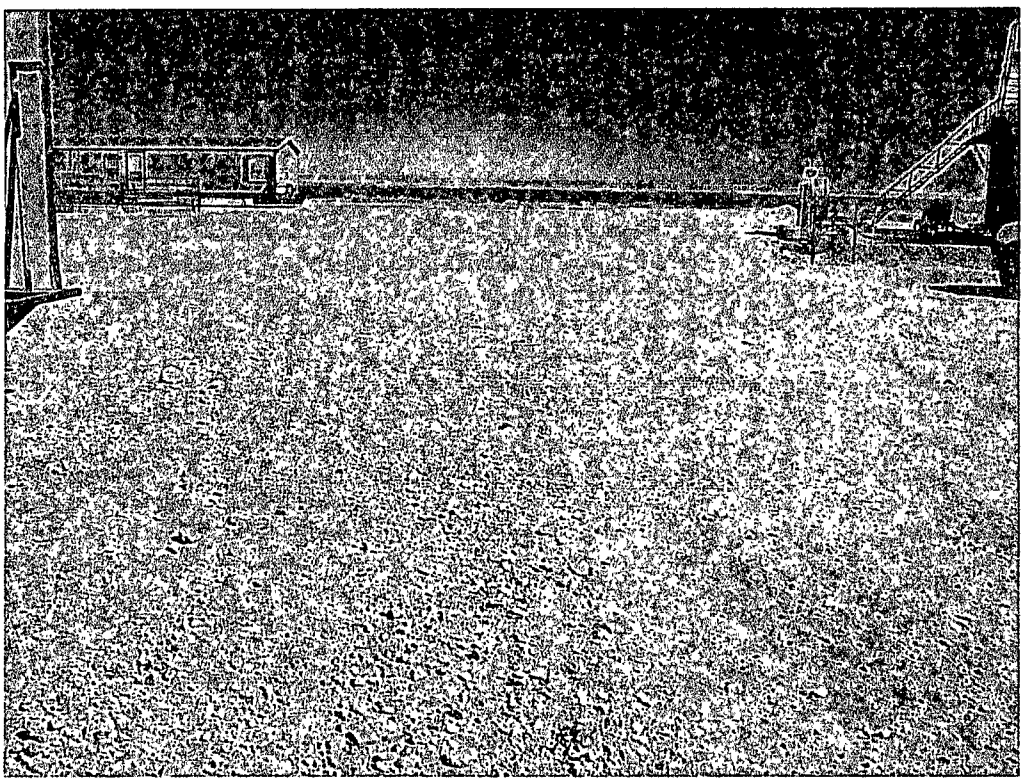
TETRA TECH, INC.
MIDLAND, TEXAS

Photos

COG Operating LLC
State SRO #101 SWD – Spill #1
Eddy County, New Mexico

TETRA TECH

View west – Front of battery near AH-3



View east – Near AH-6

COG Operating LLC
State SRO #101 SWD – Spill #1
Eddy County, New Mexico

TETRA TECH

View north – AH-7 and AH-8

COG Operating LLC
State SRO #101 SWD – Spill #2
Eddy County, New Mexico

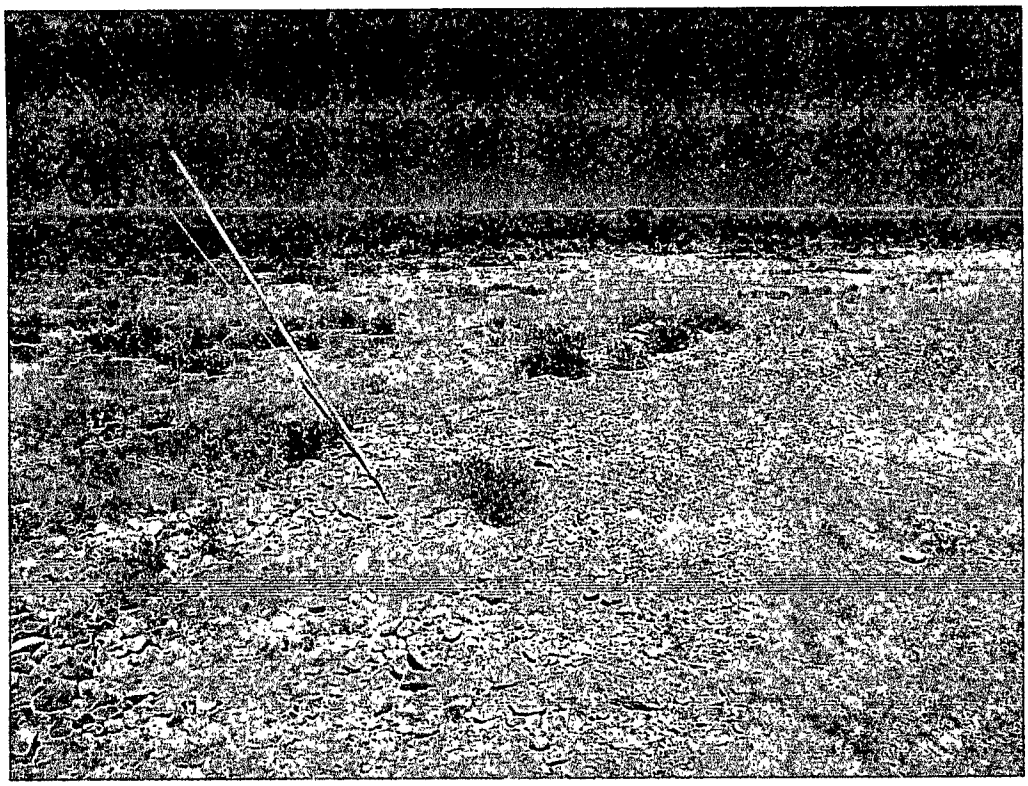
TETRA TECH

View east – Behind battery near AH-1 and AH-2

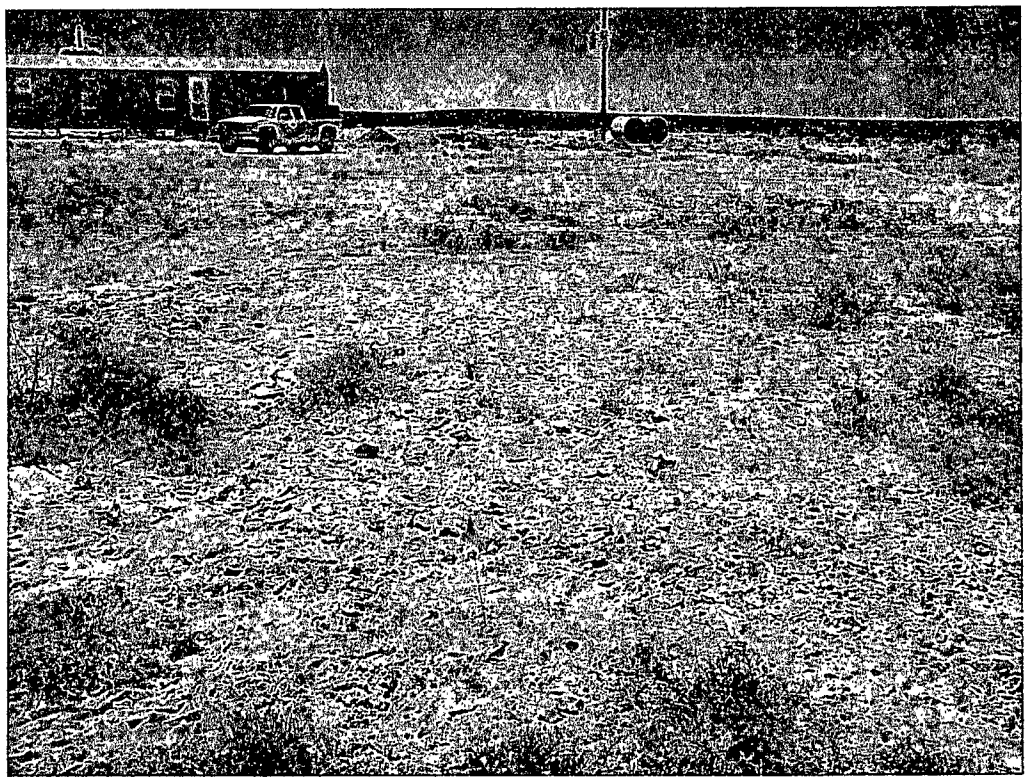
View north – Edge of battery along spill path AH-3

COG Operating LLC
State SRO #101 SWD – Spill #1
Eddy County, New Mexico

TETRA TECH



View north – Pasture area off pad, near AH-5 and AH-6



View south – North edge of spill near AH-6

TABLES

Table 1
COG Operating LLC.
SPILL #1
SRO SWD #101
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	2/8/2011	0-1'		X		<2.00	<50.0	<50.0	--	--	--	--	--	15,400
		1-1.5'		X		--	--	--	--	--	--	--	--	6,180
		2-2.5'		X		--	--	--	--	--	--	--	--	3,620
AH-2	2/8/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,670
		1-1.5'		X		--	--	--	--	--	--	--	--	353
		2-2.5'		X		--	--	--	--	--	--	--	--	408
		3-3.5'		X		--	--	--	--	--	--	--	--	4,340
		4-4.5'		X		--	--	--	--	--	--	--	--	<200
		5-5.5'		X		--	--	--	--	--	--	--	--	232
		6-6.5'		X		--	--	--	--	--	--	--	--	<200
AH-3	2/8/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,090
		1-1.5'		X		--	--	--	--	--	--	--	--	1,340
		2-2.5'		X		--	--	--	--	--	--	--	--	1,250
		3-3.5'		X		--	--	--	--	--	--	--	--	<200
		4-4.5'		X		--	--	--	--	--	--	--	--	<200
		5-5.5'		X		--	--	--	--	--	--	--	--	<200
AH-4	2/8/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	929
		1-1.5'		X		--	--	--	--	--	--	--	--	207
		2-2.5'		X		--	--	--	--	--	--	--	--	<200
		3-3.5'		X		--	--	--	--	--	--	--	--	227
		4-4.5'		X		--	--	--	--	--	--	--	--	<200
		5-5.5'		X		--	--	--	--	--	--	--	--	<200

Table 1
COG Operating LLC.
SPILL #1
SRO SWD #101
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-5	2/8/2011	0-1'		X		<2.00	<50.0	<50.0	--	--	--	--	--	808
		1-1.5'		X		--	--	--	--	--	--	--	--	372
		1.5-2'		X		--	--	--	--	--	--	--	--	595
AH-6	2/8/2011	0-1'		X		<2.00	<50.0	<50.0	--	--	--	--	--	<200
	"	1-1.5'		X		--	--	--	--	--	--	--	--	268
AH-7	2/8/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	709
		1-1.5'		X		--	--	--	--	--	--	--	--	501
		2-2.5'		X		--	--	--	--	--	--	--	--	525
		3-3.5'		X		--	--	--	--	--	--	--	--	496
AH-8	2/8/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	3,130
		1-1.5'		X		--	--	--	--	--	--	--	--	1,640
		2-2.5'		X		--	--	--	--	--	--	--	--	939
		3-3.5'		X		--	--	--	--	--	--	--	--	761
		3.5-4'		X		--	--	--	--	--	--	--	--	870

(--) Not Analyzed

BEB Below Excavation Bottom

Proposed Excavation Depths

Table 2
COG Operating LLC.
SPILL #2
SRO SWD #101
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	5/3/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	10,200
		1-1.5'		X		--	--	--	--	--	--	--	--	4,530
		2-2.5'		X		--	--	--	--	--	--	--	--	2,160
		3-3.5'		X		--	--	--	--	--	--	--	--	577
		4-4.5'		X		--	--	--	--	--	--	--	--	373
		5-5.5'		X		--	--	--	--	--	--	--	--	421
AH-2	5/3/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	7,160
		1-1.5'		X		--	--	--	--	--	--	--	--	1,230
		2-2.5'		X		--	--	--	--	--	--	--	--	1,120
		3-3.5'		X		--	--	--	--	--	--	--	--	818
		4-4.5'		X		--	--	--	--	--	--	--	--	559
AH-3	5/3/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	3,390
		1-1.5'		X		--	--	--	--	--	--	--	--	<200
		2-2.5'		X		--	--	--	--	--	--	--	--	232
		3-3.5'		X		--	--	--	--	--	--	--	--	262
AH-4	5/3/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	12,900
		1-1.5'		X		--	--	--	--	--	--	--	--	1,520
AH-5	5/3/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	8,220
		1-1.5'		X		--	--	--	--	--	--	--	--	3,320
		2-2.5'		X		--	--	--	--	--	--	--	--	1,100
AH-6	5/3/2011	0-1'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	11,300
		1-1.5'		X		--	--	--	--	--	--	--	--	9,530
		2-2.5'		X		--	--	--	--	--	--	--	--	3,010

(--) Not Analyzed

BEB Below Excavation Bottom

Proposed Excavation depths

APPENDIX A

Spill # 1

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Repor

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	SRO SWD #101	Facility Type	SWD

Surface Owner State	Mineral Owner	Lease No. (API#) 30-015-26105

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	5	26	28					Eddy

Latitude 32 04.389 **Longitude** 104 06.431

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 180bbls	Volume Recovered 130bbls
Source of Release Water line	Date and Hour of Occurrence 01/22/2011	Date and Hour of Discovery 01/22/2011 3:00 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher—OCD	
By Whom? Josh Russo	Date and Hour 01/24/2011 10:32 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

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AUG 11 2011
NMOCD ARTESIA

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Construction crew tied in water transfer pump at the Myox 31 13 to wrong disposal line causing release. The water transfer pump was hooked up to the appropriate line and returned to service.

Describe Area Affected and Cleanup Action Taken.*

Initially 180bbls was released from the line and we were able to recover 130bbls with vacuum trucks. The spill was largely contained on the pad location of the SRO SWD #101 and measured an area of 50' X 80'. Northwest of the location a 3' x 50' stream traveled off of the location and into the pasture. East of the location produced water flowed measuring an area of 4' x 20'. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Josh Russo	Approved by District Supervisor:	
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 02/01/2011 Phone: 432-212-2399		

* 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

Spill 2

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	SRO #101 SWD	Facility Type	SWD

Surface Owner State	Mineral Owner	Lease No. (API#) 30-015-26105

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	5	26S	28E					Eddy

Latitude 32 04.388 **Longitude** 104 06.431

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 200bbls	Volume Recovered 100bbls
Source of Release Ruptured Victaulic connection	Date and Hour of Occurrence 02/20/2011	Date and Hour of Discovery 02/20/2011 9:00 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher—OCD	
By Whom? Josh Russo	Date and Hour 02/20/2011 3:43 p.m.	
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.*

A Victaulic connection ruptured causing the release. The line was re-routed and returned to service.

Describe Area Affected and Cleanup Action Taken.*

Initially 200bbls of produced water was released from the line and we were able to recover 100bbls with a vacuum truck. The spill measured 15' x 20' behind the battery, a second 60' x 80' behind the battery, and a 3' x 100' trail off the northwest corner of the pad. The pad will be scraped to remove contaminates. Tetra Tech will sample the spill site are to delineate any contamination from the release and we will present a remediation 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: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 02/28/2011 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
COG - State SRO #101 SWD
Eddy County, New Mexico

25 South 27 East

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

25 South 28 East

6	5	4 **35**	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20 **96**	21	22	23	24
30	29	28 **90**	27	26	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

26 South 27 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **50**	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 28 East

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

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Site Location - State SRO #101 SWD

NM WAIDS

DATA | MAPS | HOME | SCALE | CORROSION

General Information About: Sample 26902			
Section/ Township/Range	18 / 26 S / 28 E	Lat/Long	32.0429 / -104.1264
Elevation	3060	Depth	25
Date Collected	8/4/1987	Chlorides	146
Collector / Point of Collection	SEO / TS@25	Use	Well presently not in use
Formation	CAST	TDS	0

New Mexico Tech | PRRC

LOCATION NUMBER	WATER LEVEL: BELOW LAND SURFACE (feet)	WATER LEVEL: DATE OF MEASUREMENT	YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS
25.30.9.100a	295+	Mar. 10, 1949	–	W	S	
21.330	268.0	do.	3	W	S	Northeast well of two. See analysis, Table 3.
21.330a	–	–	2	W	S	Southwest well of two.
25.31.21.000	290	Dec. 15, 1948	3	W	S	See analysis, Table 3.
26.24.9.331	65.3	Jan. 26, 1948	–	N	N	Abandoned. See analysis, Table 3.
10.240	20	–	10[1]	W	S	Driller: H. M. Curtis.
11.314	21.9	Jan. 22, 1948	5	W	S	See analysis, Table 3.
19.431	57.7	do.	5 R.	W	D & S	
28.411	–	–	–	W	S	North of highway. Driller: H. M. Curtis.
28.413	68.6	Jan. 22, 1948	2	W	S	Driller: Redman. See analysis, Table 3.
26.25.17.240	10.5	Nov. 19, 1949	3	W	S	See analysis, Table 3.
26.27.5.440	12.5	Dec. 3, 1948	3	W	S	
13.442	35+	do.	3	W	S	
26.28.2.112	21.2	Dec. 6, 1948	1½	W	S	Depth to water measured while pumping. See analysis, Table 3.

See explanation at beginning of table.
1 Measured Jan. 22, 1948.

APPENDIX C

Summary Report

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

Report Date: February 22, 2011

Work Order: 11021117

Project Location: Eddy County, NM
Project Name: COG/SRO SWD #101
Project Number: 114-6400814

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
257249	AH-1 0-1'	soil	2011-02-08	00:00	2011-02-11
257250	AH-1 1'-1.5'	soil	2011-02-08	00:00	2011-02-11
257251	AH-1 2'-2.5"	soil	2011-02-08	00:00	2011-02-11
257252	AH-2 0-1'	soil	2011-02-08	00:00	2011-02-11
257253	AH-2 1'-1.5'	soil	2011-02-08	00:00	2011-02-11
257254	AH-2 2'-2.5'	soil	2011-02-08	00:00	2011-02-11
257255	AH-2 3'-3.5'	soil	2011-02-08	00:00	2011-02-11
257256	AH-2 4'-4.5'	soil	2011-02-08	00:00	2011-02-11
257257	AH-2 5'-5.5'	soil	2011-02-08	00:00	2011-02-11
257258	AH-2 6'-6.5'	soil	2011-02-08	00:00	2011-02-11
257259	AH-3 0-1'	soil	2011-02-08	00:00	2011-02-11
257260	AH-3 1'-1.5'	soil	2011-02-08	00:00	2011-02-11
257261	AH-3 2'-2.5'	soil	2011-02-08	00:00	2011-02-11
257262	AH-3 3'-3.5'	soil	2011-02-08	00:00	2011-02-11
257263	AH-3 4'-4.5'	soil	2011-02-08	00:00	2011-02-11
257264	AH-3 5'-5.5'	soil	2011-02-08	00:00	2011-02-11
257265	AH-4 0-1'	soil	2011-02-08	00:00	2011-02-11
257266	AH-4 1'-1.5'	soil	2011-02-08	00:00	2011-02-11
257267	AH-4 2'-2.5'	soil	2011-02-08	00:00	2011-02-11
257268	AH-4 3'-3.5'	soil	2011-02-08	00:00	2011-02-11
257269	AH-4 4'-4.5'	soil	2011-02-08	00:00	2011-02-11
257270	AH-4 5'-5.5'	soil	2011-02-08	00:00	2011-02-11
257271	AH-5 0-1'	soil	2011-02-08	00:00	2011-02-11
257272	AH-5 1'-1.5'	soil	2011-02-08	00:00	2011-02-11
257273	AH-5 1.5'-2'	soil	2011-02-08	00:00	2011-02-11
257274	AH-6 0-1'	soil	2011-02-08	00:00	2011-02-11
257275	AH-6 1'-1.5'	soil	2011-02-08	00:00	2011-02-11
257276	AH-7 0-1'	soil	2011-02-08	00:00	2011-02-11
257277	AH-7 1'-1.5'	soil	2011-02-08	00:00	2011-02-11
257278	AH-7 2'-2.5'	soil	2011-02-08	00:00	2011-02-11

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
257279	AH-7 3'-3.5'	soil	2011-02-08	00:00	2011-02-11
257280	AH-8 0-1'	soil	2011-02-08	00:00	2011-02-11
257281	AH-8 1'-1.5'	soil	2011-02-08	00:00	2011-02-11
257282	AH-8 2'-2.5'	soil	2011-02-08	00:00	2011-02-11
257283	AH-8 3'-3.5'	soil	2011-02-08	00:00	2011-02-11
257284	AH-8 3.5'-4'	soil	2011-02-08	00:00	2011-02-11

Sample - Field Code	BTEX Benzene (mg/Kg)	BTEX Toluene (mg/Kg)	BTEX Ethylbenzene (mg/Kg)	BTEX Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
257249 - AH-1 0-1'					<50.0	<2.00
257252 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
257259 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
257265 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
257271 - AH-5 0-1'					<50.0	<2.00
257274 - AH-6 0-1'					<50.0	<2.00
257276 - AH-7 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
257280 - AH-8 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 257249 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**15400**	mg/Kg	4.00

Sample: 257250 - AH-1 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**6180**	mg/Kg	4.00

Sample: 257251 - AH-1 2'-2.5"

Param	Flag	Result	Units	RL
Chloride		**3620**	mg/Kg	4.00

Sample: 257252 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**1670**	mg/Kg	4.00

Sample: 257253 - AH-2 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**353**	mg/Kg	4.00

Sample: 257254 - AH-2 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**408**	mg/Kg	4.00

Sample: 257255 - AH-2 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		**4340**	mg/Kg	4.00

Sample: 257256 - AH-2 4'-4.5'

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

Sample: 257257 - AH-2 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		**232**	mg/Kg	4.00

Sample: 257258 - AH-2 6'-6.5'

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

Sample: 257259 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**1090**	mg/Kg	4.00

Sample: 257260 - AH-3 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**1340**	mg/Kg	4.00

Sample: 257261 - AH-3 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**1250**	mg/Kg	4.00

Sample: 257262 - AH-3 3'-3.5'

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

Sample: 257263 - AH-3 4'-4.5'

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

Sample: 257264 - AH-3 5'-5.5'

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

Sample: 257265 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**929**	mg/Kg	4.00

Sample: 257266 - AH-4 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**207**	mg/Kg	4.00

Sample: 257267 - AH-4 2'-2.5'

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

Sample: 257268 - AH-4 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		**227**	mg/Kg	4.00

Sample: 257269 - AH-4 4'-4.5'

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

Sample: 257270 - AH-4 5'-5.5'

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

Sample: 257271 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		**808**	mg/Kg	4.00

Sample: 257272 - AH-5 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**372**	mg/Kg	4.00

Sample: 257273 - AH-5 1.5'-2'

Param	Flag	Result	Units	RL
Chloride		**595**	mg/Kg	4.00

Sample: 257274 - AH-6 0-1'

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

Sample: 257275 - AH-6 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**268**	mg/Kg	4.00

Sample: 257276 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		**709**	mg/Kg	4.00

Sample: 257277 - AH-7 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**501**	mg/Kg	4.00

Sample: 257278 - AH-7 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**525**	mg/Kg	4.00

Sample: 257279 - AH-7 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		**496**	mg/Kg	4.00

Sample: 257280 - AH-8 0-1'

Param	Flag	Result	Units	RL
Chloride		**3130**	mg/Kg	4.00

Sample: 257281 - AH-8 1'-1.5'

Param	Flag	Result	Units	RL
Chloride		**1640**	mg/Kg	4.00

Sample: 257282 - AH-8 2'-2.5'

Param	Flag	Result	Units	RL
Chloride		**939**	mg/Kg	4.00

Sample: 257283 - AH-8 3'-3.5'

Param	Flag	Result	Units	RL
Chloride		**761**	mg/Kg	4.00

Sample: 257284 - AH-8 3.5'-4'

Param	Flag	Result	Units	RL
Chloride		**870**	mg/Kg	4.00

Summary Report

Kim Dorey
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: May 17, 2011

Work Order: 11050402

Project Location: Eddy Co., NM
Project Name: COG/SRO #101 SWD Spill #2
Project Number: 114-6400841

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
265402	AH-1 0-1'	soil	2011-05-03	00:00	2011-05-03
265403	AH-1 1-1.5'	soil	2011-05-03	00:00	2011-05-03
265404	AH-1 2-2.5'	soil	2011-05-03	00:00	2011-05-03
265405	AH-1 3-3.5'	soil	2011-05-03	00:00	2011-05-03
265406	AH-1 4-4.5'	soil	2011-05-03	00:00	2011-05-03
265407	AH-1 5-5.5'	soil	2011-05-03	00:00	2011-05-03
265408	AH-2 0-1'	soil	2011-05-03	00:00	2011-05-03
265409	AH-2 1-1.5'	soil	2011-05-03	00:00	2011-05-03
265410	AH-2 2-2.5'	soil	2011-05-03	00:00	2011-05-03
265411	AH-2 3-3.5'	soil	2011-05-03	00:00	2011-05-03
265412	AH-2 4-4.5'	soil	2011-05-03	00:00	2011-05-03
265413	AH-3 0-1'	soil	2011-05-03	00:00	2011-05-03
265414	AH-3 1-1.5'	soil	2011-05-03	00:00	2011-05-03
265415	AH-3 2-2.5'	soil	2011-05-03	00:00	2011-05-03
265416	AH-3 3-3.5'	soil	2011-05-03	00:00	2011-05-03
265417	AH-4 0-1'	soil	2011-05-03	00:00	2011-05-03
265418	AH-4 1-1.5'	soil	2011-05-03	00:00	2011-05-03
265419	AH-5 0-1'	soil	2011-05-03	00:00	2011-05-03
265420	AH-5 1-1.5'	soil	2011-05-03	00:00	2011-05-03
265421	AH-5 2-2.5'	soil	2011-05-03	00:00	2011-05-03
265422	AH-6 0-1'	soil	2011-05-03	00:00	2011-05-03
265423	AH-6 1-1.5'	soil	2011-05-03	00:00	2011-05-03
265424	AH-6 2-2.5'	soil	2011-05-03	00:00	2011-05-03

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
265402 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

continued ...

... continued

Sample - Field Code	BTEX Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
265408 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
265413 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
265417 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
265419 - AH-5 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
265422 - AH-6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 265402 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**10200**	mg/Kg	4

Sample: 265403 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**4530**	mg/Kg	4

Sample: 265404 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2160**	mg/Kg	4

Sample: 265405 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**577**	mg/Kg	4

Sample: 265406 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**373**	mg/Kg	4

Sample: 265407 - AH-1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**421**	mg/Kg	4

Sample: 265408 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**7160**	mg/Kg	4

Sample: 265409 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**1230**	mg/Kg	4

Sample: 265410 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**1120**	mg/Kg	4

Sample: 265411 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**818**	mg/Kg	4

Sample: 265412 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**559**	mg/Kg	4

Sample: 265413 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**3390**	mg/Kg	4

Sample: 265414 - AH-3 1-1.5'

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

Sample: 265415 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**232**	mg/Kg	4

Sample: 265416 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**262**	mg/Kg	4

Sample: 265417 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**12900**	mg/Kg	4

Sample: 265418 - AH-4 1-1.5'

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

Sample: 265419 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		**8220**	mg/Kg	4

Sample: 265420 - AH-5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**3320**	mg/Kg	4

Sample: 265421 - AH-5 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**1100**	mg/Kg	4

Sample: 265422 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		**11300**	mg/Kg	4

Sample: 265423 - AH-6 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**9530**	mg/Kg	4

Sample: 265424 - AH-6 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**3010**	mg/Kg	4