

Bratcher, Mike, EMNRD

From: Tavarez, Ike [Ike.Tavarez@tetrattech.com]
Sent: Monday, October 04, 2010 3:36 PM
To: Bratcher, Mike, EMNRD; Terry Gregston (terry_gregston@nm.blm.gov)
Cc: Pat Ellis; Joshua Russo; 'James Amos (james_amos@nm.blm.gov)'
Subject: COG - Tex-Mack Work Plan
Attachments: Tex_Mack_Work_Plan.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

COG Operating
Tex-Mack 11 Federal #35
Section 11, T17S, R31E, Unit M
Eddy County, New Mexico

Mike and Terry,

Please find the attached the work plan for the COG - Tex-Mack 11 Federal #35, Eddy County, New Mexico for your review. Once approved, Tetra Tech will schedule the soil remediation at the site. Call me if you have any questions or comments on the work plan, thanks

Ike Tavarez, PG Senior Project Manager

Mobile: 505-225-3322, Home: 505-812-8945 | Cell: 407-328-3878

Ike.Tavarez@tetrattech.com

Tetra Tech - Complex Remediation Solutions

19100 Eden Big Spring - Midland, TX 79701 www.tetrattech.com

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TETRA TECH

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 August 8, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of six (6) auger holes (AH-1 through AH-6) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the samples at AH-1, AH-2 and AH-3 exceeded the RRAL for TPH and BTEX. Auger holes (AH-4 and AH-5) did show TPH and BTEX concentrations above RRAL at 0-1' and 0 to 5' below surface, respectively. The deeper samples declined below the RRAL at AH-4 (1-1.5') and AH-5 (6-6.5') below surface. The chloride impact was defined in AH-1, AH-2, AH-3, AH-4, and AH-6, at a depth of 1.0' below surface. Auger holes (AH-5) did show increasing chloride concentrations at the bottom of the auger hole, with chloride concentrations of 1,220 mg/kg at 7.0' and 1,060 mg/kg at 9.0'.

Work Plan

In order to remove the chloride impacted soil, COG proposes to excavate the spill area approximately 1.0' in the areas of AH-1, AH-2, AH-3, AH-4, and AH-6. In the area of AH-5, the impacted soil will excavated to a depth of 6.0' below surface to remove the hydrocarbon impacted soil. The proposed excavation depths (highlighted) are shown in Table 1. Once completed, a backhoe will be used to install test trench to grab deeper



TETRA TECH

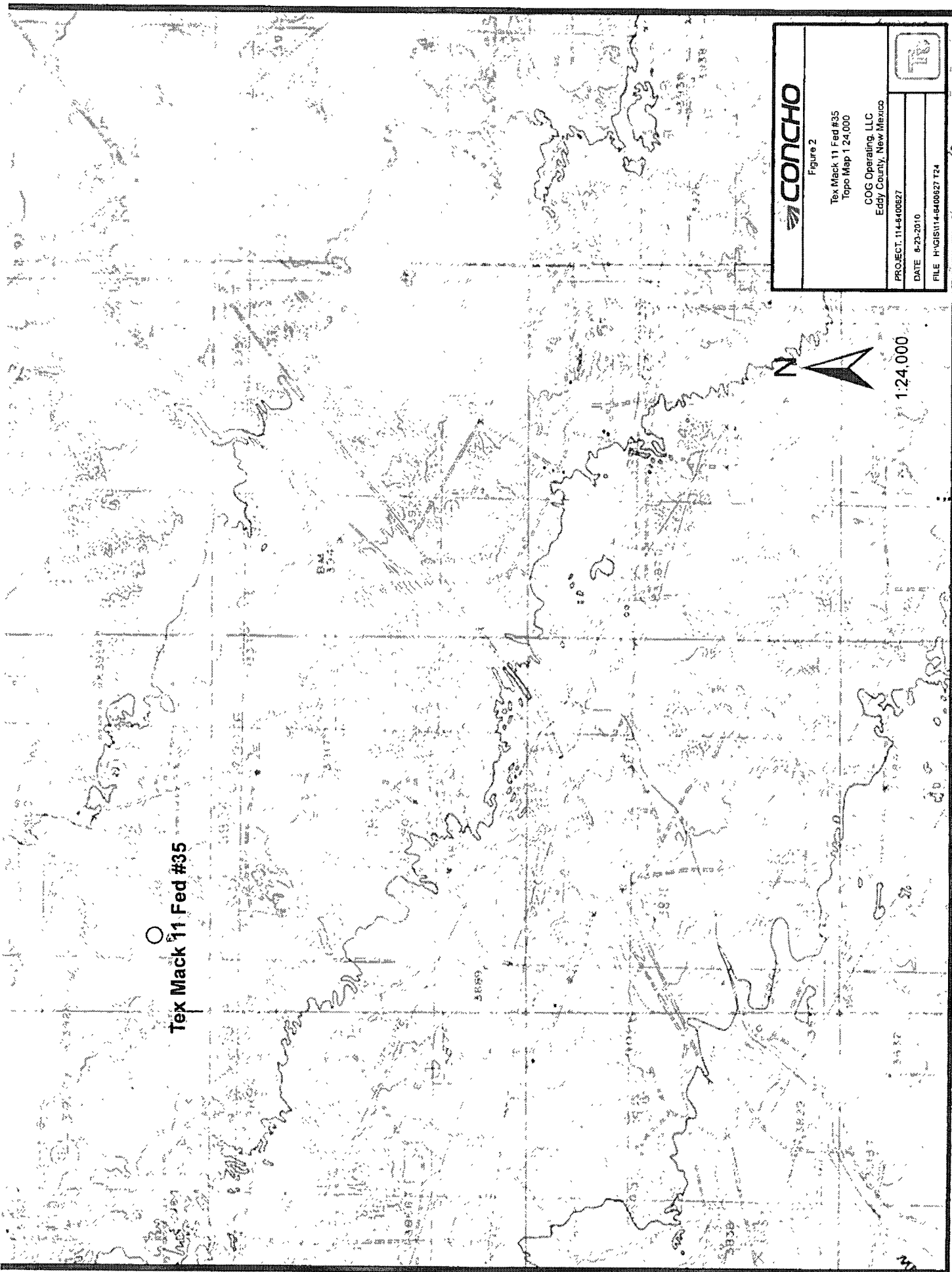
samples to define the extent of the chloride impact in the area, if accessible. All the excavated soil will be transported to proper disposal. Once completed, the excavations will backfilled with clean soil.

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

Respectfully submitted,
TETRA TECH

Ike Tavaréz
Project Manager

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



Tex Mack 11 Fed #35

CONCHO

Figure 2

Tex Mack 11 Fed #35
Topo Map 1:24,000

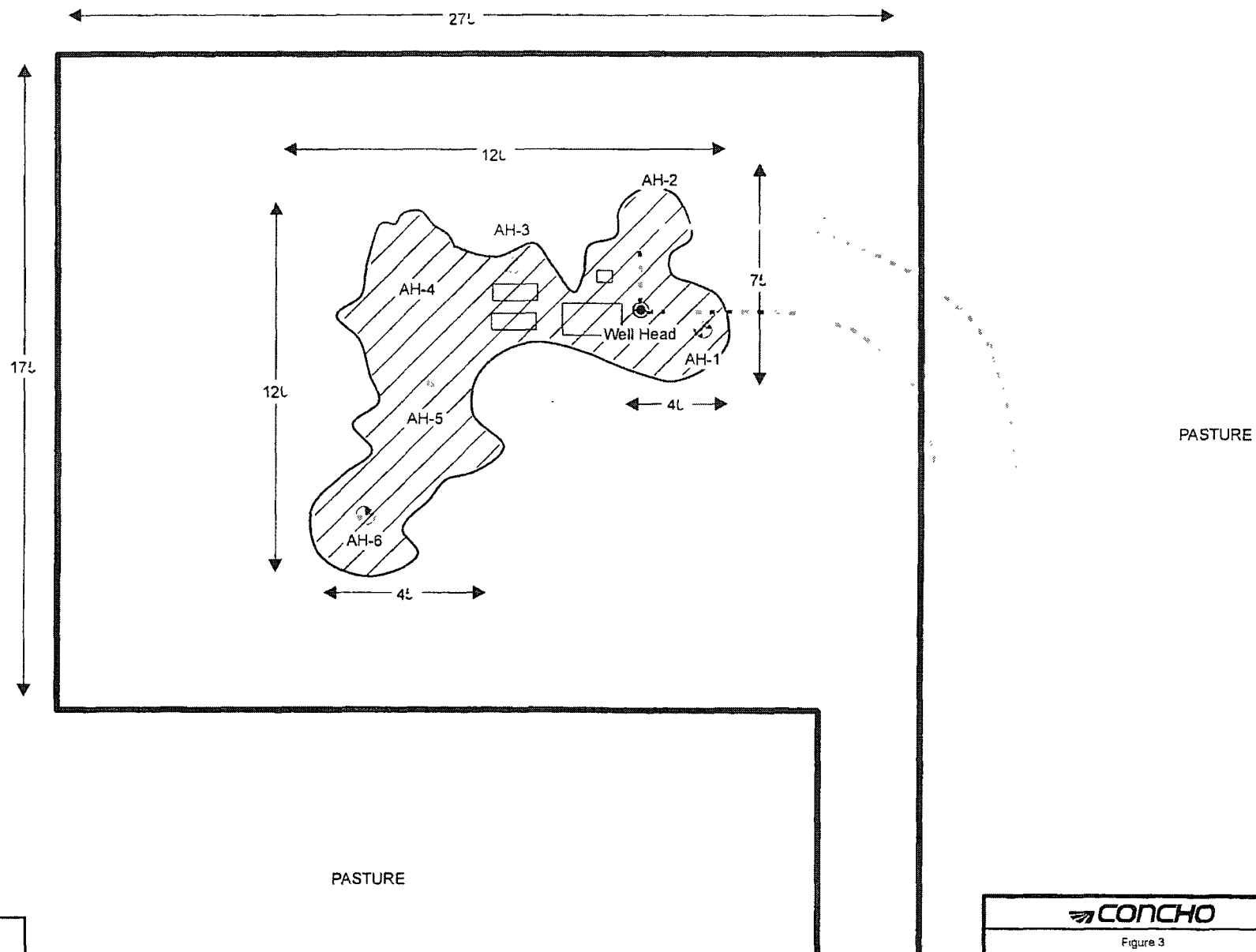
COG Operating, LLC
Eddy County, New Mexico

PROJECT: 114-400627

DATE: 8-23-2010

FILE: H:\GIS\114-400627 T24

1:24,000



Explanation

- Well Head
- Flowlines
- Auger Hole



CONCHO

Figure 3

Tex Mack 11 Fed #35
Site Map

COG Operating LLC
Lea County, New Mexico

PROJECT: 114-6400527

DATE: 8-23-2010

FILE: H:\GIS\114-6400527 T100



Table 1
COG Operating LLC.
TEX-MACK 11 FEDERAL #35
Eddy County, New Mexico

[illegible]

Table 1
COG Operating LLC.
TEX-MACK 11 FEDERAL #35
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)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-4	8/12/2010	0-1'		X		1,910	4,580	6,490	1.15	14.6	26.8	33.3	731
	"	1-1.5'		X		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
AH-5	8/12/2010	0-1'		X		2,720	2,590	5,310	6.43	36.0	32.0	36.5	1,620
	"	1-1.5'		X		4,320	6,940	11,260	22.4	104	81.8	95.6	704
	"	2-2.5'		X		2,610	4,470	7,080	7.78	67.6	58.1	67.6	307
	"	3-3.5'		X		2,940	3,430	6,370	4.16	60.8	58.8	67.2	302
	"	4-4.5'		X		1,060	4,040	5,100	1.71	22.2	22.1	24.9	222
	"	5-5.5'		X		2,310	4,460	6,770	12.0	86.9	77.6	83.1	<200
	"	6-6.5'		X		2.40	<50.0	2.40	<0.0200	<0.0200	<0.0200	<0.0200	291
	"	7-7.5'		X		-	-	-	-	-	-	-	1,220
	"	8-8.5'		X		-	-	-	-	-	-	-	1,360
	"	9-9.5'		X		-	-	-	-	-	-	-	1,060
AH-6	8/12/2010	0-1'		X		<2.00	<50.0	<50.0	-	-	-	-	1,280
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200

BEB Below Excavation Bottom

(--) Not Analyzed

☐ Proposed Excavation Depths

District I
1625 N. French Dr., Hobbs NM 88240
District II
1301 W. Grand Avenue, Artesia NM 88210
District III
1600 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 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Tex Mack 11 Federal #35	Facility Type	Well
Surface Owner	Federal	Mineral Owner	
		Lease No. (API#)	30-015-37667

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	11	17S	31E	920	SOUTH	1024	WEST	RODDY

Latitude 32 50.659 Longitude 103 50.721

NATURE OF RELEASE

Type of Release	Produced Fluid	Volume of Release	70bbls	Volume Recovered	60bbls
Source of Release	Wellbore (casing)	Date and Hour of Occurrence	07/27/2010	Date and Hour of Discovery	07/27/2010 1:00 p.m.
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Mike Bratcher—OCD		
By Whom?	Josh Russo	Date and Hour	07/28/2010	10:52 a.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.*

The well was flowing up the backside and a shallow hole in the 5 1/2 casing allowed fluid to escape into the 8 5/8 casing. The fluid in the 8 5/8 casing then escaped into the wellbore due to an improper seal between the 5 1/2 and 8 5/8 casing. The well is in the process of being repaired and put back into service.

Describe Area Affected and Cleanup Action Taken.*

Initially 70bbls of produced fluid escaped from the wellbore covering roughly 40% of the well pad in fluid. We were able to recover 60bbls of fluid with a vacuum truck. All released fluid remained on the well pad location. 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/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.

OIL CONSERVATION DIVISION

Signature:

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: 08/03/2010 Phone: 432-212-2399

Attach Additional Sheets If Necessary

Water Well Data
Average Depth to Groundwater (ft)
COG - Tex Mack 11 Federal #35
Eddy County, New Mexico

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

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

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

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

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

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

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

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

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

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

Summary Report

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

Report Date: August 27, 2010

Work Order: 10081616



Project Location: Eddy County, NM
Project Name: COG/Tex-Mark 11 Fed. #35
Project Number: 114-6400627

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
241117	AH-1 0-1'	soil	2010-08-12	00:00	2010-08-13
241118	AH-1 1-1.5'	soil	2010-08-12	00:00	2010-08-13
241119	AH-1 2-2.5'	soil	2010-08-12	00:00	2010-08-13
241120	AH-1 3-3.5'	soil	2010-08-12	00:00	2010-08-13
241121	AH-1 4-4.5'	soil	2010-08-12	00:00	2010-08-13
241122	AH-2 0-1'	soil	2010-08-12	00:00	2010-08-13
241123	AH-2 1-1.5'	soil	2010-08-12	00:00	2010-08-13
241124	AH-2 2-2.5'	soil	2010-08-12	00:00	2010-08-13
241125	AH-2 3-3.5'	soil	2010-08-12	00:00	2010-08-13
241126	AH-2 4-4.5'	soil	2010-08-12	00:00	2010-08-13
241127	AH-2 5-5.5'	soil	2010-08-12	00:00	2010-08-13
241128	AH-2 6-6.5'	soil	2010-08-12	00:00	2010-08-13
241129	AH-2 6.5-7'	soil	2010-08-12	00:00	2010-08-13
241130	AH-3 0-1'	soil	2010-08-12	00:00	2010-08-13
241131	AH-3 1-1.5'	soil	2010-08-12	00:00	2010-08-13
241132	AH-3 2-2.5'	soil	2010-08-12	00:00	2010-08-13
241133	AH-3 3-3.5'	soil	2010-08-12	00:00	2010-08-13
241134	AH-3 4-4.5'	soil	2010-08-12	00:00	2010-08-13
241135	AH-4 0-1'	soil	2010-08-12	00:00	2010-08-13
241136	AH-4 1-1.5'	soil	2010-08-12	00:00	2010-08-13
241137	AH-4 2-2.5'	soil	2010-08-12	00:00	2010-08-13
241138	AH-4 3-3.5'	soil	2010-08-12	00:00	2010-08-13
241139	AH-4 4-4.5'	soil	2010-08-12	00:00	2010-08-13
241140	AH-5 0-1'	soil	2010-08-12	00:00	2010-08-13
241141	AH-5 1-1.5'	soil	2010-08-12	00:00	2010-08-13
241142	AH-5 2-2.5'	soil	2010-08-12	00:00	2010-08-13
241143	AH-5 3-3.5'	soil	2010-08-12	00:00	2010-08-13
241144	AH-5 4-4.5'	soil	2010-08-12	00:00	2010-08-13
241145	AH-5 5-5.5'	soil	2010-08-12	00:00	2010-08-13
241146	AH-5 6-6.5'	soil	2010-08-12	00:00	2010-08-13

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296

This is only a summary. Please, refer to the complete report package for quality control data.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
241147	AH-5 7-7.5'	soil	2010-08-12	00:00	2010-08-13
241148	AH-5 8-8.5'	soil	2010-08-12	00:00	2010-08-13
241149	AH-5 9-9.5'	soil	2010-08-12	00:00	2010-08-13
241150	AH-6 0-1'	soil	2010-08-12	00:00	2010-08-13
241151	AH-6 1-1.5'	soil	2010-08-12	00:00	2010-08-13
241152	AH-6 2-2.5'	soil	2010-08-12	00:00	2010-08-13
241153	AH-6 3-3.5'	soil	2010-08-12	00:00	2010-08-13
241154	AH-6 4-4.5'	soil	2010-08-12	00:00	2010-08-13

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
241117 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	51.6	3.01
241122 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	9.77
241130 - AH-3 0-1'					<50.0	<2.00
241135 - AH-4 0-1'	1.15	14.6	26.8	33.3	4580	1910
241136 - AH-4 1-1.5'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
241140 - AH-5 0-1'	6.43	36.0	32.0	36.5	2590	2720
241141 - AH-5 1-1.5'	22.4	104	81.8	95.6	6940	4320
241142 - AH-5 2-2.5'	7.78	67.6	58.1	67.6	4470	2610
241143 - AH-5 3-3.5'	4.16	60.8	58.8	67.2	3430	2940
241144 - AH-5 4-4.5'	1.71	22.2	22.1	24.9	4040	1060
241145 - AH-5 5-5.5'	12.0	86.9	77.6	83.1	4460	2310
241146 - AH-5 6-6.5'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	2.40
241150 - AH-6 0-1'					<50.0	<2.00

Sample: 241117 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		1520	mg/Kg	4.00

Sample: 241118 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		317	mg/Kg	4.00

Sample: 241119 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		206	mg/Kg	4.00

Sample: 241120 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		212	mg/Kg	4.00

Sample: 241121 - AH-1 4-4.5'

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

Sample: 241122 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		3320	mg/Kg	4.00

Sample: 241123 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		808	mg/Kg	4.00

Sample: 241124 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		351	mg/Kg	4.00

Sample: 241125 - AH-2 3-3.5'

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

Sample: 241126 - AH-2 4-4.5'

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

Sample: 241127 - AH-2 5-5.5'

Param	Flag	Result	Units	RL
Chloride		1890	mg/Kg	4.00

Sample: 241128 - AH-2 6-6.5'

Param	Flag	Result	Units	RL
Chloride		351	mg/Kg	4.00

Sample: 241129 - AH-2 6.5-7'

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

Sample: 241130 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		2100	mg/Kg	4.00

Sample: 241131 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		233	mg/Kg	4.00

Sample: 241132 - AH-3 2-2.5'

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

Sample: 241133 - AH-3 3-3.5'

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

Sample: 241134 - AH-3 4-4.5'

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

Sample: 241135 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		731	mg/Kg	4.00

Sample: 241136 - AH-4 1-1.5'

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

Sample: 241137 - AH-4 2-2.5'

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

Sample: 241138 - AH-4 3-3.5'

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

Sample: 241139 - AH-4 4-4.5'

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

Sample: 241140 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		1620	mg/Kg	4.00

Sample: 241141 - AH-5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		704	mg/Kg	4.00

Sample: 241142 - AH-5 2-2.5'

Param	Flag	Result	Units	RL
Chloride		307	mg/Kg	4.00

Sample: 241143 - AH-5 3-3.5'

Param	Flag	Result	Units	RL
Chloride		302	mg/Kg	4.00

Sample: 241144 - AH-5 4-4.5'

Param	Flag	Result	Units	RL
Chloride		222	mg/Kg	4.00

Sample: 241145 - AH-5 5-5.5'

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

Sample: 241146 - AH-5 6-6.5'

Param	Flag	Result	Units	RL
Chloride		291	mg/Kg	4.00

Sample: 241147 - AH-5 7-7.5'

Param	Flag	Result	Units	RL
Chloride		1220	mg/Kg	4.00

Sample: 241148 - AH-5 8-8.5'

Param	Flag	Result	Units	RL
Chloride		1360	mg/Kg	4.00

Sample: 241149 - AH-5 9-9.5'

Param	Flag	Result	Units	RL
Chloride		1060	mg/Kg	4.00

Sample: 241150 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		1280	mg/Kg	4.00

Sample: 241151 - AH-6 1-1.5'

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

Sample: 241152 - AH-6 2-2.5'

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

Sample: 241153 - AH-6 3-3.5'

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

Sample: 241154 - AH-6 4-4.5'

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