

SITE INFORMATION

Report Type: Work Plan

General Site Information:

Site:	Dodd Federal Unit Water Flood					
Company:	COG Operating LLC					
Section, Township and Range	Unit I	Sec 15	T17S	R29E		
Lease Number:	API-30-015-02987					
County:	Eddy County					
GPS:		32.83275° N		104.05684° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	In Loco Hills, from the intersection of Hwy 82 and CR 217 travel west on Hwy 82 for 4.3 miles, turn right and travel 100 feet, turn right and travel 0.4 miles, turn left and travel 0.6 miles to site.					

Release Data:

Date Released:	5/6/2011
Type Release:	Produced Water
Source of Contamination:	Produced water overflow tank
Fluid Released:	100 bbls
Fluids Recovered:	98 bbls

Official Communication:

Name:	Pat Ellis	Ike Tavaréz
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) 682-4559
Fax:	(432) 684-7137	
Email:	pellis@conchoresources.com	ike.tavarez@tetrattech.com

Ranking Criteria

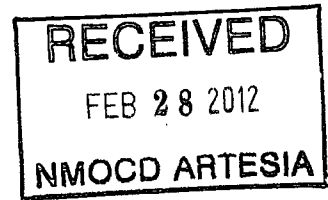
Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	10
>100 ft.	0	
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		10

Acceptable Soil RRAL (mg/kg)

Benzene	Total BTEX	TPH
10	50	1,000



TETRA TECH



February 13, 2012

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., Dodd Federal Unit Water Flood, Unit I, Section 15, Township 17 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Dodd Federal Unit Water Flood located in Unit I, Section 15, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83275°, W 104.05684°. 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 May 6, 2011, and released approximately one hundred (100) barrels of produced fluid from the produced water overflow tank. Ninety Eight (98) barrels of standing fluids were recovered. The spill measured approximately 45' x 85' and was completely contained inside the firewall of the facility. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 17. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 75' below surface. The average depth to groundwater map is shown in Appendix B.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.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 1,000 mg/kg.

Soil Assessment and Analytical Results

On May 31, 2011, Tetra Tech personnel inspected and sampled the spill area. Four (4) auger holes (AH-1, AH-2, AH-3 and AH-4) were installed using a stainless steel hand auger to assess the impacted soils. Due to the tanks, lines and structures, additional auger holes were not installed at the site. 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, all auger holes were below the RRAL for TPH and BTEX. The area of AH-4 showed a shallow chloride impact to the soils, which declined to 237 mg/kg at 2-2.5' below surface. The chloride impact was not vertically defined in auger holes (AH-1, AH-2 and AH-3), with bottom hole samples of 10,100 mg/kg at 1-1.5', 1,560 mg/kg at 9-9.5' and 2,060 mg/kg at 9-9.5', respectively.

On September 23, 2011, Tetra Tech personnel supervised the installation of soil borings (SB-1, SB-2 and SB-3) utilizing an air rotary drilling rig. Soil samples were collected to a depth of 60.0' below surface to define the chloride impact. Referring to Table 1, chloride concentrations declined with depth to <200 mg/kg at 60.0' (SB-1) and <200 mg/kg at 40.0' (SB-2) and <200 mg/kg at 40.0' (SB-3). The soil boring locations are shown on Figure 3.



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Work Plan

Due to the proximity of the tanks, lines and structures, deeper excavation is not practical at this time. COG proposes to remove the impacted soil in accessible areas to a depth of approximately 1.0' to 3.0' below surface to remove a large amount of higher impacted soils and defer the remaining impact until abandonment of the facility. Once excavated to the appropriate depth, clay material will be placed in the bottom of the excavation (6" to 1.0' thick) and compacted to cap the remaining impact and limit vertical penetration of both rainwater and any future surface impact. Then the site will be backfilled to grade. With limited excavation and capping, COG is attempting to limit future residual environmental concerns at the site. The proposed excavation depths are highlighted (green) in Table 1 and shown on Figure 4.

Based on the site formation, the proposed excavation areas or 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 safety concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable.

Upon completion, a final report will be submitted to the NMOCD. 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 Tavares, PG
Senior Project Manager

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

Figures

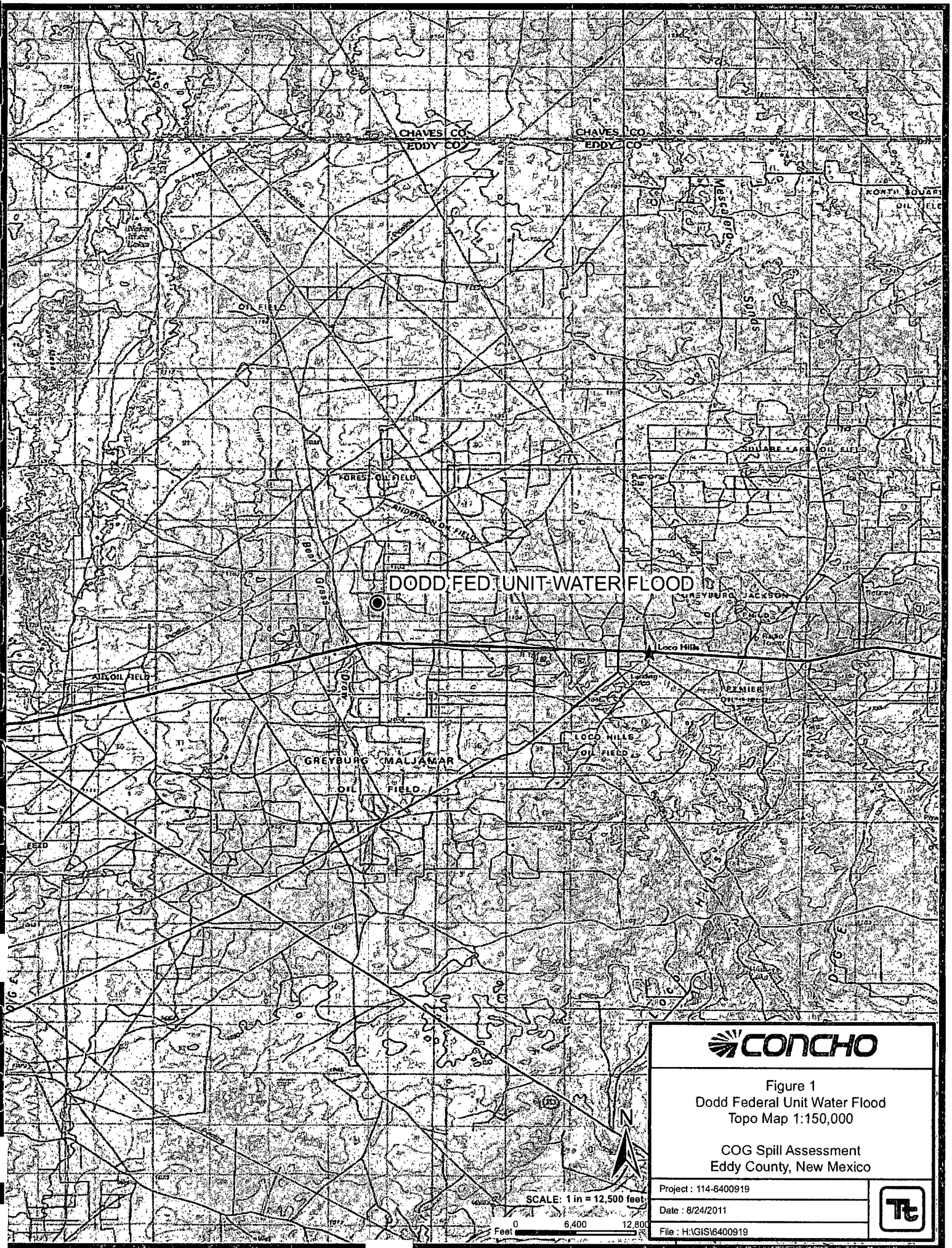


Figure 1
Dodd Federal Unit Water Flood
Topo Map 1:150,000

COG Spill Assessment
Eddy County, New Mexico

Project : 114-6400919

Date : 8/24/2011

File : H:\GIS\6400919



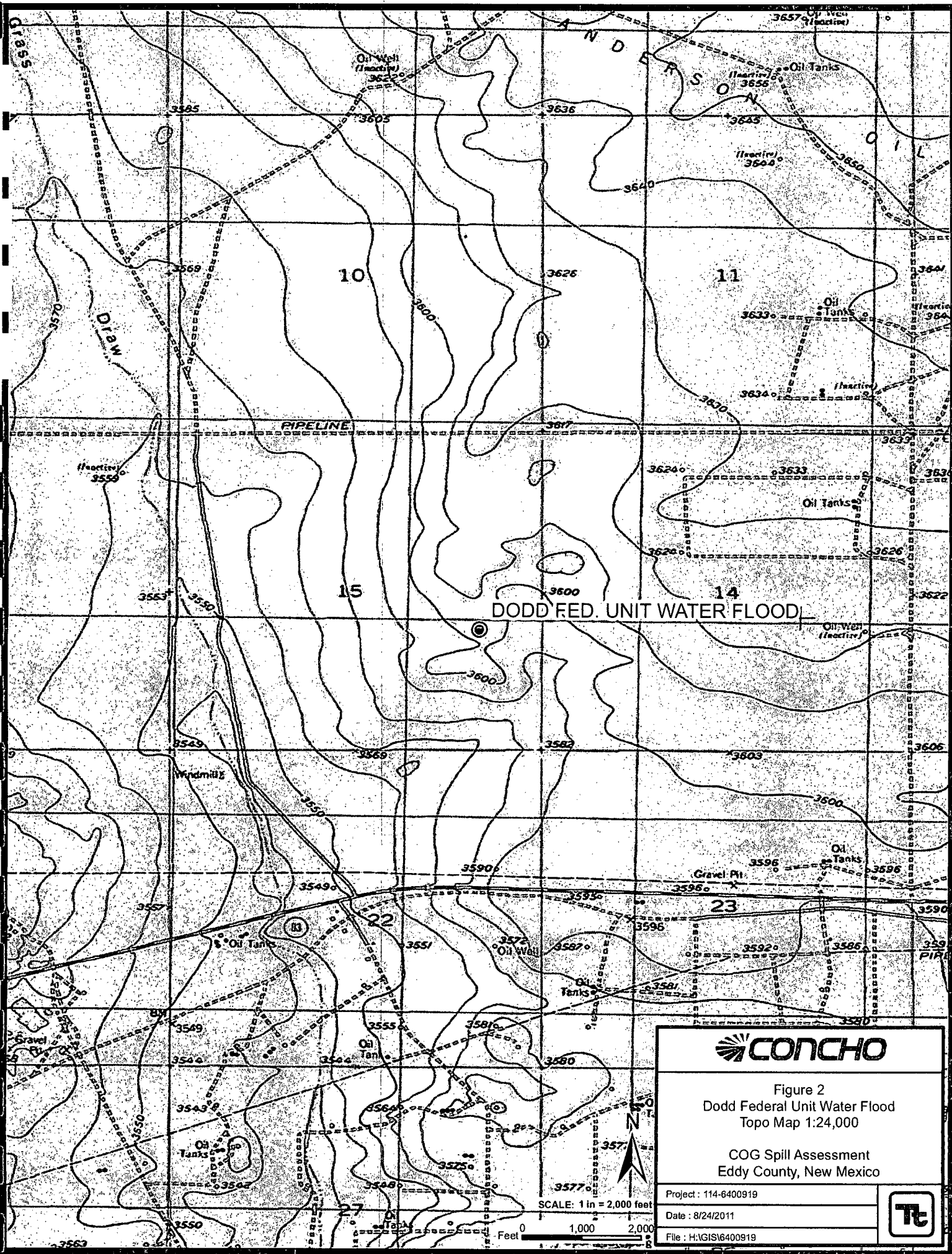


Figure 2
Dodd Federal Unit Water Flood
Topo Map 1:24,000

COG Spill Assessment
Eddy County, New Mexico

Project: 114-6400919

Date: 8/24/2011

File: H:\GIS\6400919

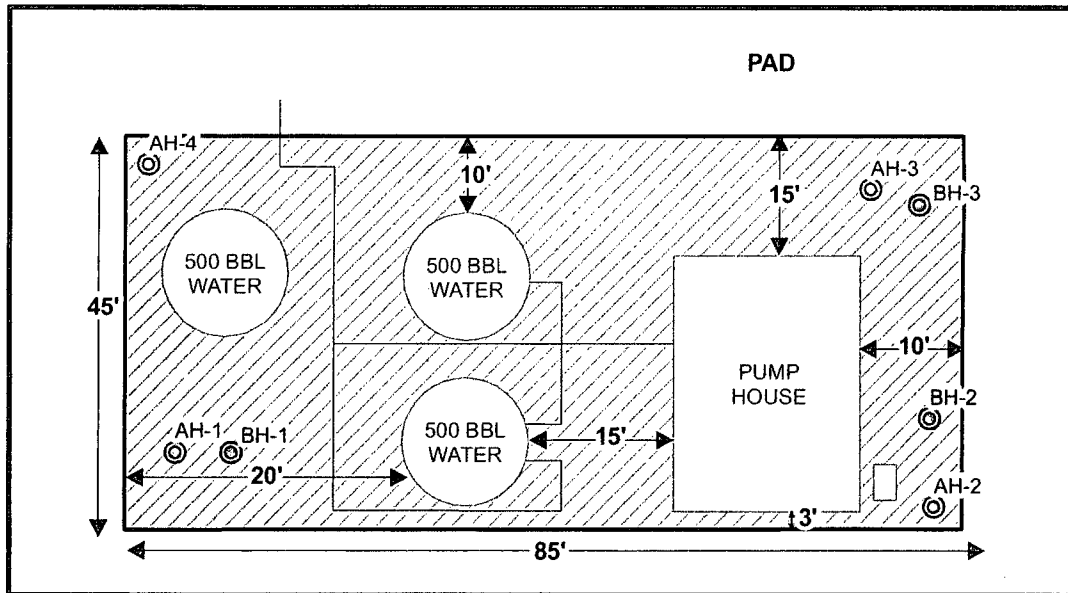


PASTURE

PASTURE

LEASE ROAD

PAD



LEASE ROAD

LEASE ROAD

EXPLANATION

- ⊙ AUGER HOLE SAMPLE LOCATIONS
- ⊙ BORE HOLE SAMPLE LOCATIONS
- ▨ SPILL AREA

SCALE: 1 IN = 23 FT
Feet 0 7.5 15



Figure 3

Dodd Federal Unit Water Flood
Spill Assessment Map

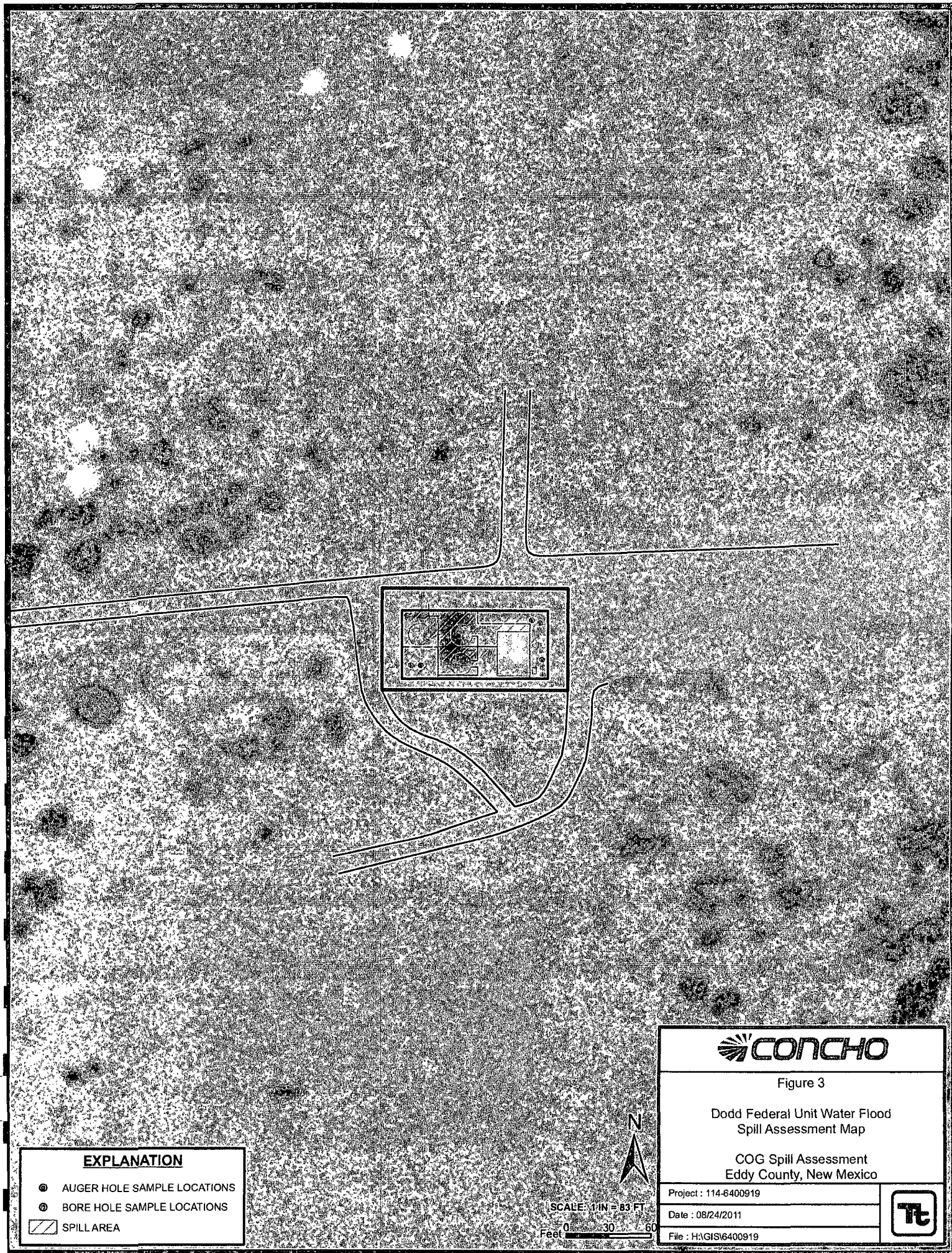
COG Spill Assessment
Eddy County, New Mexico

Project : 114-6400919

Date : 08/24/2011

File : H:\GIS\6400919





EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- ⊗ BORE HOLE SAMPLE LOCATIONS
- ▨ SPILL AREA



Figure 3

Dodd Federal Unit Water Flood
Spill Assessment Map

COG Spill Assessment
Eddy County, New Mexico

Project : 114-6400919

Date : 08/24/2011

File : H:\GIS\6400919



PASTURE

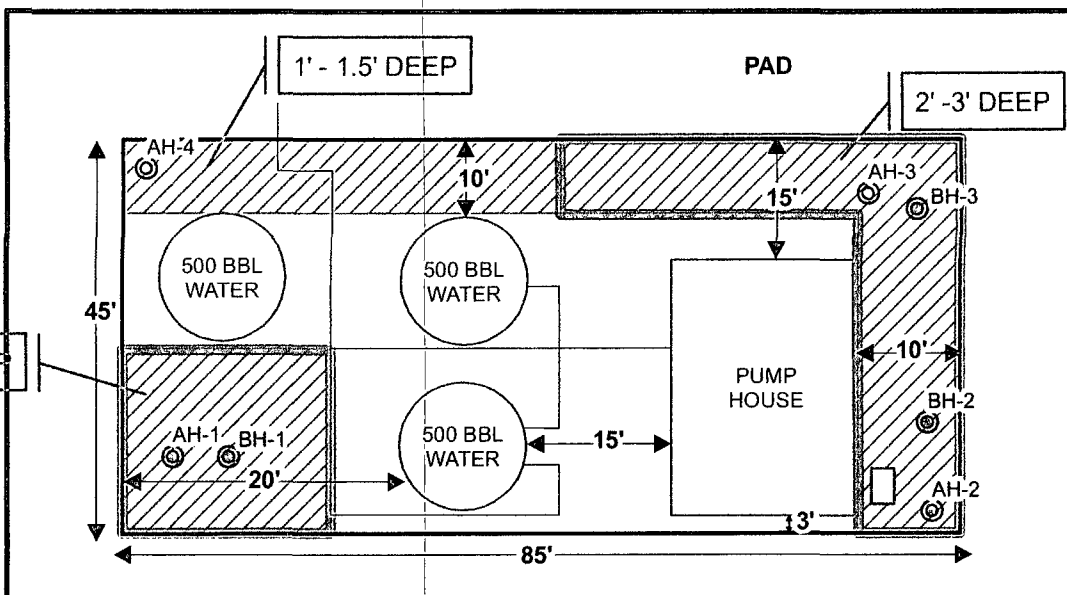
PASTURE

LEASE ROAD

PAD

1' - 1.5' DEEP

2' - 3' DEEP



2' - 3' DEEP

LEASE ROAD

LEASE ROAD

EXPLANATION

- ① AUGER HOLE SAMPLE LOCATIONS
- ② BORE HOLE SAMPLE LOCATIONS
- PROPOSED CLAY
- PROPOSED EXCAVATION AREA

SCALE: 1 IN = 23 FT

Feet 0 10 20



Figure 4

Dodd Federal Unit Water Flood
Proposed Excavation Area & Depths Map

COG Spill Assessment
Eddy County, New Mexico

Project : 114-6400919

Date : 08/24/2011

File : H:\GIS\6400919



Tables

Table 1
COG Operating LLC.

[illegible]

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COG Operating LLC.

[illegible]

Table 1
COG Operating LLC.
DODD FEDERAL UNIT WATER FLOOD
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total					
AH-3	5/31/2011	0-1'	X		3.14	<50.0	3.14	<0.0200	<0.0200	<0.0200	<0.0200	1,370
		1-1.5'	X		-	-	-	-	-	-	-	865
		2-2.5'	X		-	-	-	-	-	-	-	1,050
		3-3.5'	X		-	-	-	-	-	-	-	2,070
		4-4.5'	X		-	-	-	-	-	-	-	1,840
		5-5.5'	X		-	-	-	-	-	-	-	1,560
		6-6.5'	X		-	-	-	-	-	-	-	1,440
		7-7.5'	X		-	-	-	-	-	-	-	1,630
		8-8.5'	X		-	-	-	-	-	-	-	4,920
		9-9.5'	X		-	-	-	-	-	-	-	2,060
BH-3	9/23/2011	10'	X		-	-	-	-	-	-	-	1,900
		15'	X		-	-	-	-	-	-	-	3,730
		20'	X		-	-	-	-	-	-	-	2,740
		25'	X		-	-	-	-	-	-	-	1,160
		30'	X		-	-	-	-	-	-	-	203
		40'	X		-	-	-	-	-	-	-	<200
		50'	X		-	-	-	-	-	-	-	<200
		60'	X		-	-	-	-	-	-	-	<200
AH-4	5/31/2011	0-1'	X		22.5	<50.0	22.5	<0.0200	<0.0200	<0.0200	<0.0200	5,280
		1-1.5'	X		-	-	-	-	-	-	-	3,990
		2-2.5'	X		-	-	-	-	-	-	-	237
Background	5/31/2011	1-1.5'	X		-	-	-	-	-	-	-	<200
	"	3-3.5'	X		-	-	-	-	-	-	-	989

(--) Not Analyzed



Proposed Excavated Depths



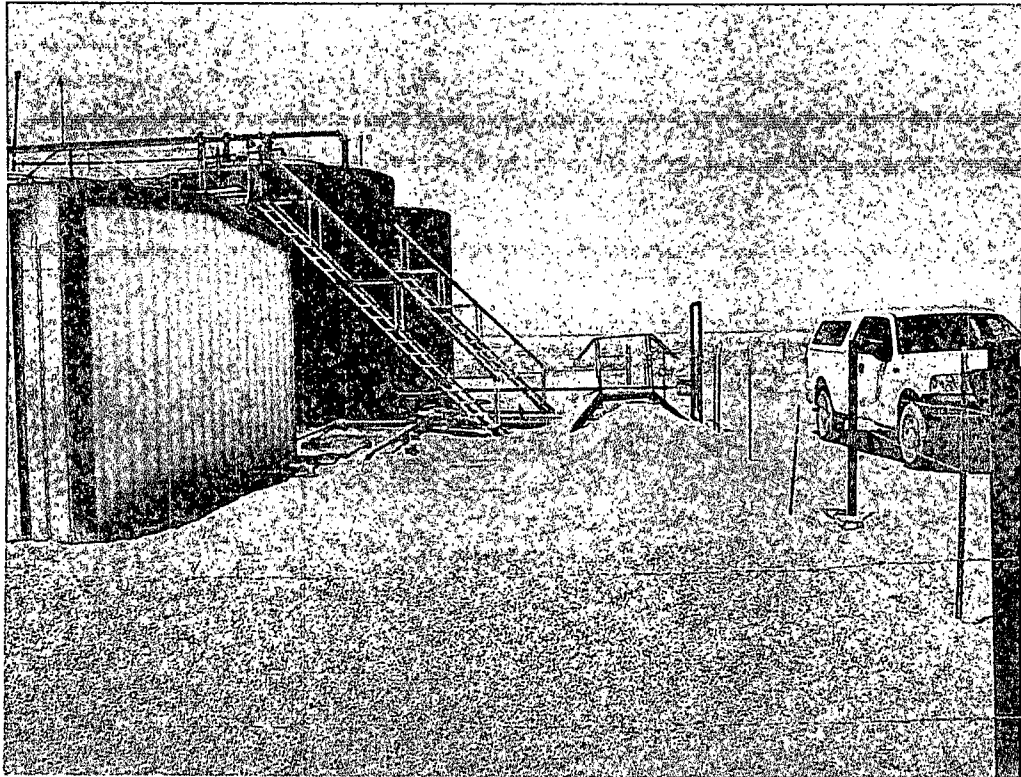
Clay Material

Photos

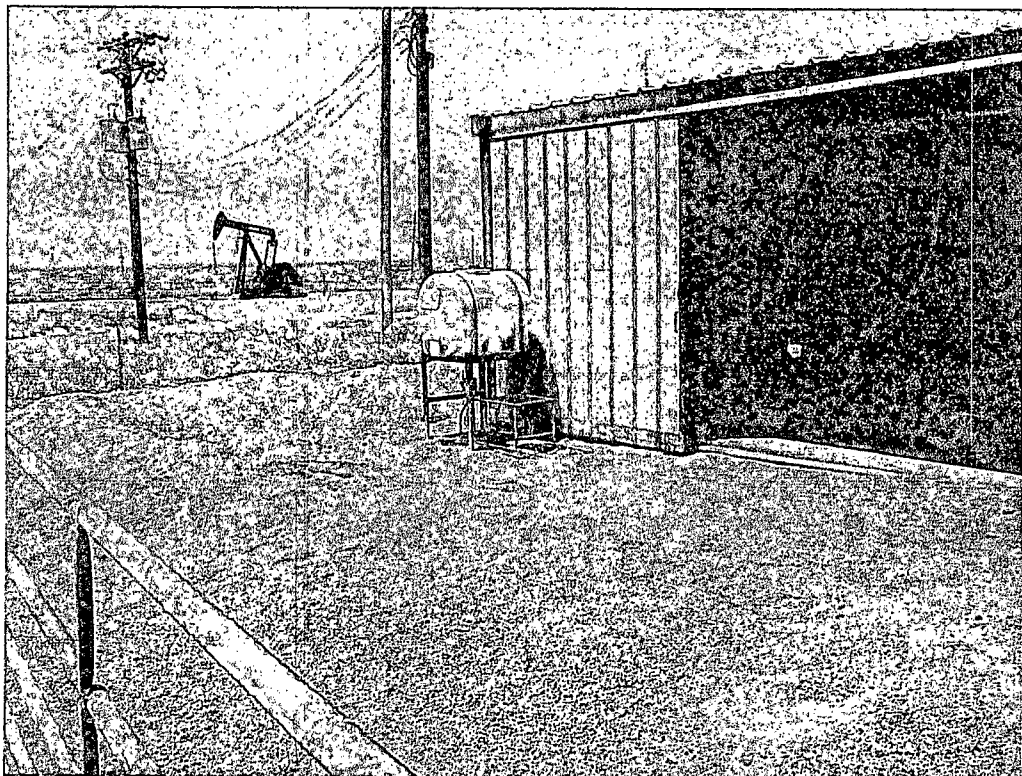
COG Operating LLC
Dodd Fed Unit Water Flood
Eddy County, New Mexico



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View West – AH-3 and 4

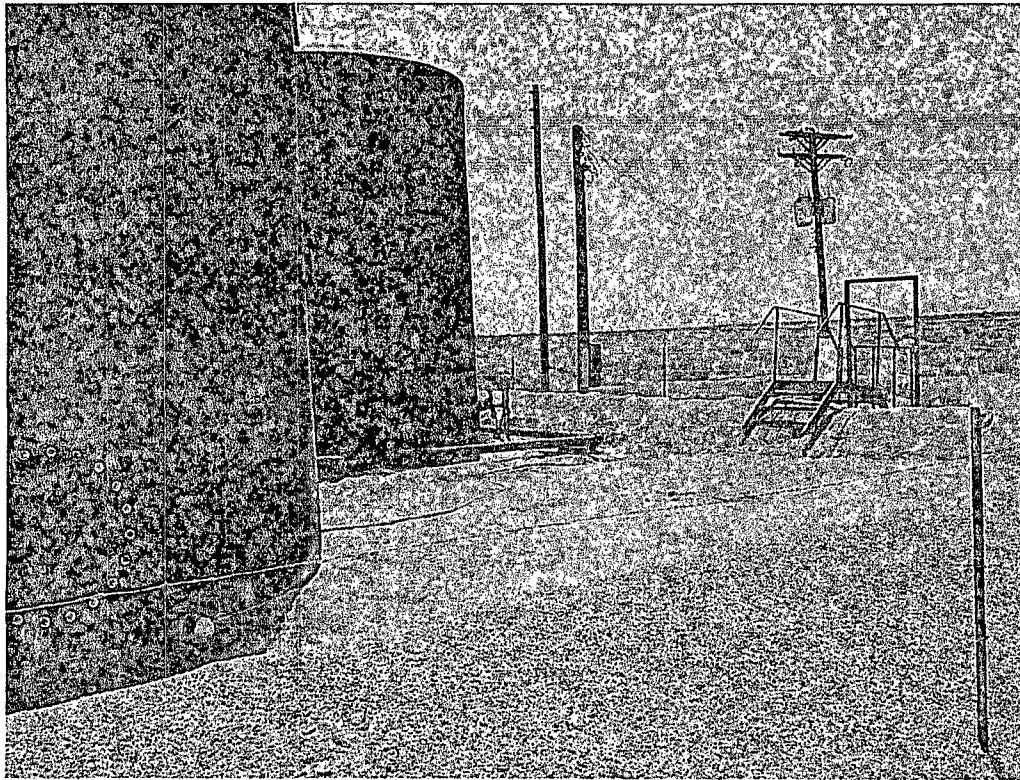


View South – AH-2

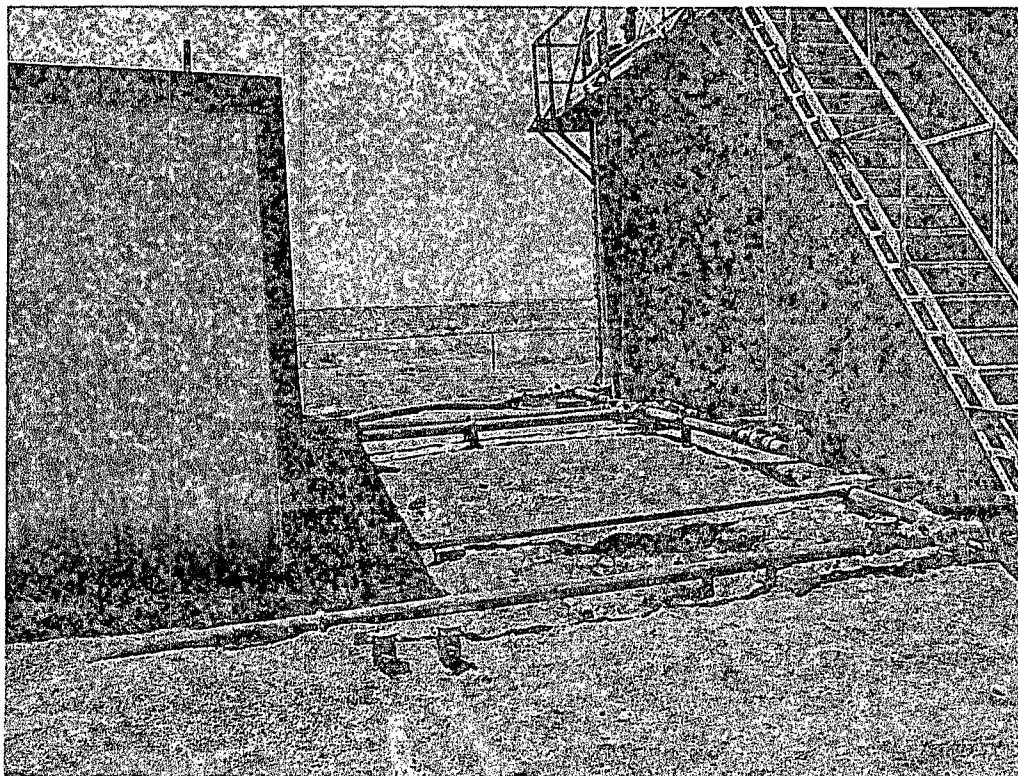
COG Operating LLC
Dodd Fed Unit Water Flood
Eddy County, New Mexico



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View South East – AH-4



View South

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

0919
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

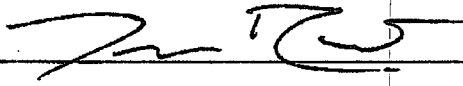
Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Dodd Federal Unit Water Flood	Facility Type	Water Flood TB
Surface Owner	Federal	Mineral Owner	Lease No. (API#) 30-015-02987

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	15	17S	29E					Eddy

Latitude 32.83275 Longitude 104.05684

NATURE OF RELEASE

Type of Release	Produced water	Volume of Release	100bbls	Volume Recovered	98bbls
Source of Release	Produced water overflow tank	Date and Hour of Occurrence	05/06/2011	Date and Hour of Discovery	05/06/2011 8:00 a.m.
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Mike Bratcher-OCD Jim Amos-BLM Terry Gregston-BLM		
By Whom?	Josh Russo	Date and Hour	05/09/2011 7:52 p.m.		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted, Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken.* A hole developed in the side of an overflow tank at the Dodd Federal Unit Water Flood TB. The faulty tank has been removed and replaced.					
Describe Area Affected and Cleanup Action Taken.* Initially 100bbls of produced water was released from the overflow tank and we were able to recover 98bbls with a vacuum truck. All released fluid was completely contained inside the dike walls of the facility. All standing fluid has been removed and the spill area has been scraped with a backhoe. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan 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 <input type="checkbox"/>	
Date: 05/12/2011 Phone: 432-212-2399					

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Dodd Federal Unit Water Flood
Eddy County, New Mexico

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

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

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

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





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

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

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

18 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	23	24
30	29	28	27	26	25
31	32	33	34	35	36

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

-  New Mexico State Engineers Well Reports
-  USGS Well Reports
-  Geology and Groundwater Conditions in Southern Eddy, County, NM
-  NMOCD - Groundwater Data

Appendix C

Summary Report

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

Report Date: June 14, 2011

Work Order: 11060239



Project Location: Eddy Co., NM
Project Name: COG/Dodd Federal Unit Water Flood
Project Number: 114-6400919

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
268053	AH-1 0-1'	soil	2011-05-31	00:00	2011-06-02
268054	AH-1 1-1.5'	soil	2011-05-31	00:00	2011-06-02
268055	AH-1 1.5-2'	soil	2011-05-31	00:00	2011-06-02
268056	AH-2 0-1'	soil	2011-05-31	00:00	2011-06-02
268057	AH-2 1-1.5'	soil	2011-05-31	00:00	2011-06-02
268058	AH-2 2-2.5'	soil	2011-05-31	00:00	2011-06-02
268059	AH-2 3-3.5'	soil	2011-05-31	00:00	2011-06-02
268060	AH-2 4-4.5'	soil	2011-05-31	00:00	2011-06-02
268061	AH-2 5-5.5'	soil	2011-05-31	00:00	2011-06-02
268062	AH-2 6-6.5'	soil	2011-05-31	00:00	2011-06-02
268063	AH-2 7-7.5'	soil	2011-05-31	00:00	2011-06-02
268064	AH-2 8-8.5'	soil	2011-05-31	00:00	2011-06-02
268065	AH-2 9-9.5'	soil	2011-05-31	00:00	2011-06-02
268066	AH-3 0-1'	soil	2011-05-31	00:00	2011-06-02
268067	AH-3 1-1.5'	soil	2011-05-31	00:00	2011-06-02
268068	AH-3 2-2.5'	soil	2011-05-31	00:00	2011-06-02
268069	AH-3 3-3.5'	soil	2011-05-31	00:00	2011-06-02
268070	AH-3 4-4.5'	soil	2011-05-31	00:00	2011-06-02
268071	AH-3 5-5.5'	soil	2011-05-31	00:00	2011-06-02
268072	AH-3 6-6.5'	soil	2011-05-31	00:00	2011-06-02
268073	AH-3 7-7.5'	soil	2011-05-31	00:00	2011-06-02
268074	AH-3 8-8.5'	soil	2011-05-31	00:00	2011-06-02
268075	AH-3 9-9.5'	soil	2011-05-31	00:00	2011-06-02
268076	AH-4 0-1'	soil	2011-05-31	00:00	2011-06-02
268077	AH-4 1-1.5'	soil	2011-05-31	00:00	2011-06-02
268078	AH-4 2-2.5'	soil	2011-05-31	00:00	2011-06-02
268079	Background 1-1.5'	soil	2011-05-31	00:00	2011-06-02
268080	Background 3-3.5'	soil	2011-05-31	00:00	2011-06-02

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)
268053 - AH-1 0-1'	<0.0200	0.192	0.147	0.492	61.9	77.2
268056 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	11.3
268066 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	3.14
268076 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	0.374	<50.0	22.5

Sample: 268053 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		8190	mg/Kg	4

Sample: 268054 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		9490	mg/Kg	4

Sample: 268055 - AH-1 1.5-2'

Param	Flag	Result	Units	RL
Chloride		10100	mg/Kg	4

Sample: 268056 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		9540	mg/Kg	4

Sample: 268057 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1570	mg/Kg	4

Sample: 268058 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		2640	mg/Kg	4

Sample: 268059 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		4590	mg/Kg	4

Sample: 268060 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		2430	mg/Kg	4

Sample: 268061 - AH-2 5-5.5'

Param	Flag	Result	Units	RL
Chloride		1800	mg/Kg	4

Sample: 268062 - AH-2 6-6.5'

Param	Flag	Result	Units	RL
Chloride		2140	mg/Kg	4

Sample: 268063 - AH-2 7-7.5'

Param	Flag	Result	Units	RL
Chloride		2580	mg/Kg	4

Sample: 268064 - AH-2 8-8.5'

Param	Flag	Result	Units	RL
Chloride		2060	mg/Kg	4

Sample: 268065 - AH-2 9-9.5'

Param	Flag	Result	Units	RL
Chloride		1560	mg/Kg	4

Sample: 268066 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		1370	mg/Kg	4

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Sample: 268067 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		865	mg/Kg	4

Sample: 268068 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		1050	mg/Kg	4

Sample: 268069 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		2070	mg/Kg	4

Sample: 268070 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		1840	mg/Kg	4

Sample: 268071 - AH-3 5-5.5'

Param	Flag	Result	Units	RL
Chloride		1560	mg/Kg	4

Sample: 268072 - AH-3 6-6.5'

Param	Flag	Result	Units	RL
Chloride		1440	mg/Kg	4

Sample: 268073 - AH-3 7-7.5'

Param	Flag	Result	Units	RL
Chloride		1630	mg/Kg	4

Sample: 268074 - AH-3 8-8.5'

Param	Flag	Result	Units	RL
Chloride		4920	mg/Kg	4

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Sample: 268075 - AH-3 9-9.5'

Param	Flag	Result	Units	RL
Chloride		2060	mg/Kg	4

Sample: 268076 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		5280	mg/Kg	4

Sample: 268077 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		3990	mg/Kg	4

Sample: 268078 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		237	mg/Kg	4

Sample: 268079 - Background 1-1.5'

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

Sample: 268080 - Background 3-3.5'

Param	Flag	Result	Units	RL
Chloride		989	mg/Kg	4

Summary Report

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

Report Date: October 6, 2011

Work Order: 11092631



Project Location: Eddy Co., NM
Project Name: COG/Dodd Federal Unit Water Flood
Project Number: 114-6400919

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
278367	BH-1 0-1'	soil	2011-09-23	00:00	2011-09-26
278368	BH-1 3'	soil	2011-09-23	00:00	2011-09-26
278369	BH-1 5'	soil	2011-09-23	00:00	2011-09-26
278370	BH-1 7'	soil	2011-09-23	00:00	2011-09-26
278371	BH-1 10'	soil	2011-09-23	00:00	2011-09-26
278372	BH-1 15'	soil	2011-09-23	00:00	2011-09-26
278373	BH-1 20'	soil	2011-09-23	00:00	2011-09-26
278374	BH-1 25'	soil	2011-09-23	00:00	2011-09-26
278375	BH-1 30'	soil	2011-09-23	00:00	2011-09-26
278376	BH-1 40'	soil	2011-09-23	00:00	2011-09-26
278377	BH-1 50'	soil	2011-09-23	00:00	2011-09-26
278378	BH-1 60'	soil	2011-09-23	00:00	2011-09-26
278381	BH-2 0-1'	soil	2011-09-23	00:00	2011-09-26
278382	BH-2 3'	soil	2011-09-23	00:00	2011-09-26
278383	BH-2 5'	soil	2011-09-23	00:00	2011-09-26
278384	BH-2 7'	soil	2011-09-23	00:00	2011-09-26
278385	BH-2 10'	soil	2011-09-23	00:00	2011-09-26
278386	BH-2 15'	soil	2011-09-23	00:00	2011-09-26
278387	BH-2 20'	soil	2011-09-23	00:00	2011-09-26
278388	BH-2 25'	soil	2011-09-23	00:00	2011-09-26
278389	BH-2 30'	soil	2011-09-23	00:00	2011-09-26
278390	BH-2 40'	soil	2011-09-23	00:00	2011-09-26
278391	BH-2 50'	soil	2011-09-23	00:00	2011-09-26
278392	BH-2 60'	soil	2011-09-23	00:00	2011-09-26
278397	BH-3 10'	soil	2011-09-23	00:00	2011-09-26
278398	BH-3 15'	soil	2011-09-23	00:00	2011-09-26
278399	BH-3 20'	soil	2011-09-23	00:00	2011-09-26
278400	BH-3 25'	soil	2011-09-23	00:00	2011-09-26
278401	BH-3 30'	soil	2011-09-23	00:00	2011-09-26
278402	BH-3 40'	soil	2011-09-23	00:00	2011-09-26

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Sample	Description	Matrix	Date Taken	Time Taken	Date Received
278403	BH-3 50'	soil	2011-09-23	00:00	2011-09-26
278404	BH-3 60'	soil	2011-09-23	00:00	2011-09-26

Sample: 278367 - BH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		3570	mg/Kg	4

Sample: 278368 - BH-1 3'

Param	Flag	Result	Units	RL
Chloride		3650	mg/Kg	4

Sample: 278369 - BH-1 5'

Param	Flag	Result	Units	RL
Chloride		6140	mg/Kg	4

Sample: 278370 - BH-1 7'

Param	Flag	Result	Units	RL
Chloride		3110	mg/Kg	4

Sample: 278371 - BH-1 10'

Param	Flag	Result	Units	RL
Chloride		3640	mg/Kg	4

Sample: 278372 - BH-1 15'

Param	Flag	Result	Units	RL
Chloride		2780	mg/Kg	4

Sample: 278373 - BH-1 20'*continued ...*

sample 278373 continued ...

Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		2170	mg/Kg	4

Sample: 278374 - BH-1 25'

Param	Flag	Result	Units	RL
Chloride		4910	mg/Kg	4

Sample: 278375 - BH-1 30'

Param	Flag	Result	Units	RL
Chloride		1150	mg/Kg	4

Sample: 278376 - BH-1 40'

Param	Flag	Result	Units	RL
Chloride		952	mg/Kg	4

Sample: 278377 - BH-1 50'

Param	Flag	Result	Units	RL
Chloride		849	mg/Kg	4

Sample: 278378 - BH-1 60'

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

Sample: 278381 - BH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		5150	mg/Kg	4

Sample: 278382 - BH-2 3'

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Param	Flag	Result	Units	RL
Chloride		7250	mg/Kg	4

Sample: 278383 - BH-2 5'

Param	Flag	Result	Units	RL
Chloride		1410	mg/Kg	4

Sample: 278384 - BH-2 7'

Param	Flag	Result	Units	RL
Chloride		4510	mg/Kg	4

Sample: 278385 - BH-2 10'

Param	Flag	Result	Units	RL
Chloride		1920	mg/Kg	4

Sample: 278386 - BH-2 15'

Param	Flag	Result	Units	RL
Chloride		1490	mg/Kg	4

Sample: 278387 - BH-2 20'

Param	Flag	Result	Units	RL
Chloride		1490	mg/Kg	4

Sample: 278388 - BH-2 25'

Param	Flag	Result	Units	RL
Chloride		1050	mg/Kg	4

Sample: 278389 - BH-2 30'

Param	Flag	Result	Units	RL
Chloride		236	mg/Kg	4

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Sample: 278390 - BH-2 40'

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

Sample: 278391 - BH-2 50'

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

Sample: 278392 - BH-2 60'

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

Sample: 278397 - BH-3 10'

Param	Flag	Result	Units	RL
Chloride		1900	mg/Kg	4

Sample: 278398 - BH-3 15'

Param	Flag	Result	Units	RL
Chloride		3730	mg/Kg	4

Sample: 278399 - BH-3 20'

Param	Flag	Result	Units	RL
Chloride		2740	mg/Kg	4

Sample: 278400 - BH-3 25'

Param	Flag	Result	Units	RL
Chloride		1160	mg/Kg	4

Sample: 278401 - BH-3 30'

Param	Flag	Result	Units	RL
Chloride		203	mg/Kg	4

Sample: 278402 - BH-3 40'

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

Sample: 278403 - BH-3 50'

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

Sample: 278404 - BH-3 60'

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