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

HOBBS OCD
AUG 13 2014
RECEIVED

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 **Robert McNeil**
Address **600 West Illinois Avenue Midland, Texas 79701**	Telephone No. **(432) 230-0077**
Facility Name **Mesa Verde 15 Federal #001**	Facility Type **Tank Battery**

Surface Owner: Federal	Mineral Owner	Lease No. (API#) 30-025-36836

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	15	21S	32E					Lea

Latitude N 32.48337° **Longitude** W 103.65727°

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release 7 **bbls oil** 10 bbls produced water	Volume Recovered 6.5 **bbls oil** 10 bbls produced water
Source of Release: Heater Treater	Date and Hour of Occurrence 11-26-213	Date and Hour of Discovery **11-26-2013 06:30 a.m.**
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

A one and a half inch split developed in the sleeve of the main body of the heater treater. Replaced the heater treater.

Describe Area Affected and Cleanup Action Taken.*

Initially 7 bbls of oil and 10 bbls of produced waster were released from a one and a half split that developed in the heater treater. 6.5 bbls of oil and 10 bbls of produced water were recovered using a vacuum truck. The release was contained within the berm. 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: (Agent for COG)	OIL CONSERVATION DIVISION
Printed Name: Ike Tavarez, PG	Approved by ~~District~~ Supervisor: Environmental Specialist
Title: Project Manager	Approval Date: 8-13-14 Expiration Date:
E-mail Address: ike.tavarez@tetratech.com	Conditions of Approval: Attached ☐
Date: 7-24-14 Phone: (432) 687-8110	IRP-3236

Attach Additional Sheets If Necessary

AUG 14 2014

Ogrid 229137
nTO 1422 62 8009
pTO 1422 62 8209

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Mesa Verde 15 Federal #1
Lea County, New Mexico

6	5	4	3	2	1
7	8	9	10 **130**	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 **80**

6	5	4	3	2	1 **21.8**
7	8	9	10	11	12
18 **89**	17	16	15	14	13
19	20	21	22	23	24
30 **9.9**	29	28	27 **12.3**	26	25
31	32	33	34	35	36 **46**

6	5 **325** **278**	4	3	2	1
7	8	9 **Maljamar**	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24 **+300**
30	29	28	27	26	25
31	32	33	34	35	36

21 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

21 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 **630**	15 SITE	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

21 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

22 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 **256**	23	24
30	29	28	27	26	25
31	32	33 **155**	34	35	36

22 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 **448**	15	14	13
19	20 **47**	21	22	23	24
30	29 **413**	28 **444**	27	26	25
31	32	33 **325**	34	35	36

22 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 **382** **350**	13
19 (S) **280**	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

Appendix C

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 13, 2014

IKE TAVAREZ

TETRA TECH

1910 N. BIG SPRING STREET

MIDLAND, TX 79705

RE: MESA VERDE 15 FED #001

Enclosed are the results of analyses for samples received by the laboratory on 05/07/14 16:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TETRA TECH
IKE TAVAREZ
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	05/07/2014	Sampling Date:	05/06/2014
Reported:	05/13/2014	Sampling Type:	Soil
Project Name:	MESA VERDE 15 FED #001	Sampling Condition:	Cool & Intact
Project Number:	112MC06169	Sample Received By:	Jodi Henson
Project Location:	LEA CO., NM		

Sample ID: AH1 1.5' BOTTOMHOLE (H401394-01)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**288**	16.0	05/13/2014	ND	400	100	400	3.92	

Sample ID: AH2 1.5' BOTTOMHOLE (H401394-02)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**336**	16.0	05/13/2014	ND	400	100	400	3.92	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record

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

H401394

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112MC0616 H2MC0616129

PROJECT NAME: COG - Mesa Verde 15 Fed #001 Lea, Co. NM

LAB I.D. NUMBER	DATE 2014	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
1	5/6		S		X	AH 1 1.5' Bottomhole	1				X													X				
2	5/6		S		X	AH 2 1.5' Bottomhole	1				X													X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Adrian Garcia	Date: 5/7/14 Time: 4:45	RECEIVED BY: (Signature) Joel Henson	Date: 5/7/14 Time: 4:45
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) Adrian Garcia Date: 5/7/14 Time:

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

TETRA TECH CONTACT PERSON: Ike Tavarez Adrian.garcia@tetratech.com

Results by:

RUSH Charges Authorized: Yes No

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

SAMPLE CONDITION WHEN RECEIVED: 2.4° C #54

REMARKS:

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

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

May 14, 2014

IKE TAVAREZ

TETRA TECH

1910 N. BIG SPRING STREET

MIDLAND, TX 79705

RE: MESA VERDE 15 FED #001

Enclosed are the results of analyses for samples received by the laboratory on 05/09/14 13:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TETRA TECH
IKE TAVAREZ
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	05/09/2014	Sampling Date:	05/06/2014
Reported:	05/14/2014	Sampling Type:	Soil
Project Name:	MESA VERDE 15 FED #001	Sampling Condition:	** (See Notes)
Project Number:	112MC06169	Sample Received By:	Jodi Henson
Project Location:	LEA CO., NM		

Sample ID: NORTH SIDEWALL (H401416-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1440**	16.0	05/14/2014	ND	400	100	400	0.00	

Sample ID: SOUTH SIDEWALL (H401416-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1100**	16.0	05/14/2014	ND	400	100	400	0.00	

Sample ID: EAST SIDEWALL (H401416-03)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4400**	16.0	05/14/2014	ND	400	100	400	0.00	

Sample ID: WEST SIDEWALL (H401416-04)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1640**	16.0	05/14/2014	ND	416	104	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record

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

H4D14116

CLIENT NAME: COG ~~Mesa Verde 15 Fed~~

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112NC06169

PROJECT NAME: COG - Mesa Verde 15 Fed #001

LAB I.D. NUMBER	DATE 2014	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
1	5/6		S		X	North Sidewall	1					X												X				
2	5/6					South Sidewall	1					X												X				
3	5/6					East sidewall	1					X												X				
4	5/6					West sidewall	1					X												X				

RELINQUISHED BY: (Signature) Adrian Garcia — Date: 5/9/14 Time: 1345

RECEIVED BY: (Signature) Holly Henderson — Date: 5/9/14 Time: 13:45

SAMPLED BY: (Print & Initial) Adrian Garcia — Date: Time:

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

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

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

RECEIVING LABORATORY: Cardinal Labs

ADDRESS:

CITY: Hobbs STATE: NM ZIP:

CONTACT: PHONE: DATE: TIME:

RECEIVED BY: (Signature)

TETRA TECH CONTACT PERSON: Ike Tavarez
Adrian.garcia@tetratech.com

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 21.8°C #54

REMARKS:

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

Page 4 of 4

Summary Report

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

Report Date: January 8, 2014

Work Order: 13121830

Project Location: Lea CO, NM
Project Name: COG/Mesa Verde 15 Fed #001
Project Number: TBD

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
349403	AH-1 0-1'	soil	2013-12-16	00:00	2013-12-18
349404	AH-1 1-1.5'	soil	2013-12-16	00:00	2013-12-18
349405	AH-1 2-2.5'	soil	2013-12-16	00:00	2013-12-18
349406	AH-1 3-3.5'	soil	2013-12-16	00:00	2013-12-18
349407	AH-1 4-4.5'	soil	2013-12-16	00:00	2013-12-18
349408	AH-1 5-5.5'	soil	2013-12-16	00:00	2013-12-18
349409	AH-2 0-1'	soil	2013-12-16	00:00	2013-12-18
349410	AH-2 1-1.5'	soil	2013-12-16	00:00	2013-12-18
349411	AH-2 2-2.5'	soil	2013-12-16	00:00	2013-12-18
349412	AH-2 3-3.5'	soil	2013-12-16	00:00	2013-12-18
349413	AH-2 4-4.5'	soil	2013-12-16	00:00	2013-12-18

	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)
349403 - AH-1 0-1'	**1.30**	**21.9**	**9.71**	**32.3**	**366**	**927**
349404 - AH-1 1-1.5'	<0.0200	<0.0200	<0.0200	<0.0200		
349409 - AH-2 0-1'	**0.298**	**16.4**	**9.44**	**31.2**	**645**	**915**
349410 - AH-2 1-1.5'	<0.0200	<0.0200	<0.0200	<0.0200		

Sample: 349403 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**4700**	mg/Kg	4

Sample: 349404 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**76.9**	mg/Kg	4

Sample: 349405 - AH-1 2-2.5'

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

Sample: 349406 - AH-1 3-3.5'

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

Sample: 349407 - AH-1 4-4.5'

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

Sample: 349408 - AH-1 5-5.5'

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

Sample: 349409 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**6900**	mg/Kg	4

Sample: 349410 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**563**	mg/Kg	4

Sample: 349411 - AH-2 2-2.5'

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

Sample: 349412 - AH-2 3-3.5'

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

Sample: 349413 - AH-2 4-4.5'

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

SITE INFORMATION

Report Type: Closure Report

HOBBS OCD

AUG 13 2014

RECEIVED

General Site Information:					
Site:	Mesa Verde 15 Federal #001				
Company:	COG Operating LLC				
Section, Township and Range	Sec. 15	T 21S	R 32E		
Lease Number:	API-30-025-36836				
County:	Lea County				
GPS:	32.48337° N			103.65727° W	
Surface Owner:	Federal				
Mineral Owner:					
Directions:	From the intersection of Hwy 62 and Hwy 176 in Lea County, travel EAST on 176 for approximately 6.4 miles, turn SOUTH onto lease road and continue for approximately 3.4 miles to the location				

Release Data:	
Date Released:	11/26/2013
Type Release:	Oil and Produced Water
Source of Contamination:	Heater Treater
Fluid Released:	17 bbls
Fluids Recovered:	16 bbls

Official Communication:			
Name:	Robert McNeil		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		4000 N. Big Spring
	600 W. Illinois Ave.		Ste 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 687-8110
Fax:	(432) 684-7137		
Email:	rmcneil@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***	
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

July 24, 2014

Mr. Geoffrey Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Closure Report for the COG Operating LLC., Mesa Verde 15 Federal #1, Unit A, Section 15, Township 21 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Mesa Verde 15 Federal #1, Unit A, Section 15, Township 21 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.48337°, W 103.65727°. 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 November 26, 2013, and released approximately ten (10) barrels of produced water and seven (7) barrels of oil from a heater treater. To alleviate the problem, COG personnel replaced the heater treater. Ten (10) barrels of produced water and six and a half (6.5) barrels of oil were recovered. The spill was contained inside the diked area on the pad affecting an area approximately 30' X 35'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 15. 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 Appendix B.

Tetra Tech
4000 North Big Spring, Ste 401 Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

Regulatory

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

Soil Assessment and Analytical Results

On December 16, 2013, Tetra Tech personnel inspected and sampled the spill area. Two (2) auger holes (AH-1 and AH-2) were installed using a stainless steel hand auger to assess the impacted soils. Selected soil 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 TPH RRAL; however auger holes (AH-1 and AH-2) were above the RRAL for total BTEX at 0'-1 below surface, but all declined at 1-1.5' below surface. Elevated chloride concentrations were detected at 0-1' below surface in auger holes (AH-1 and AH-2) with chloride concentrations of 4,700 mg/kg and 6,900 mg/kg, respectively. The chloride impact significantly declined with depth at 1-1.5' below surface and was vertically defined.

Remediation Activities

On May 6, 2014, Tetra Tech supervised the removal impacted material as highlighted (green) in Table 1 and shown on Figure 4. The area of auger holes (AH-1 and AH-2) were excavated to depths of approximately 1.5' below surface. Bottom hole samples were taken in both areas; AH-1 bottom hole showed a chloride concentration of 288 mg/kg and AH-2 bottom hole showed a chloride concentration of 336 mg/kg.

Confirmation samples were also taken at the north, south, east and west sidewalls which showed chloride concentrations of 1,440 mg/kg, 1,100 mg/kg, 4,400 mg/kg, and 1,640 mg/kg, respectively. The north, east and south sidewalls could not be excavated any further due to the berms around the location. The west sidewall could not be excavated any further due to location of the heater treater.

Once the area was excavated to the appropriate depths, the excavations were backfilled with clean soil to grade, and approximately 32 cubic yards of excavated material was hauled to proper disposal.

Conclusion

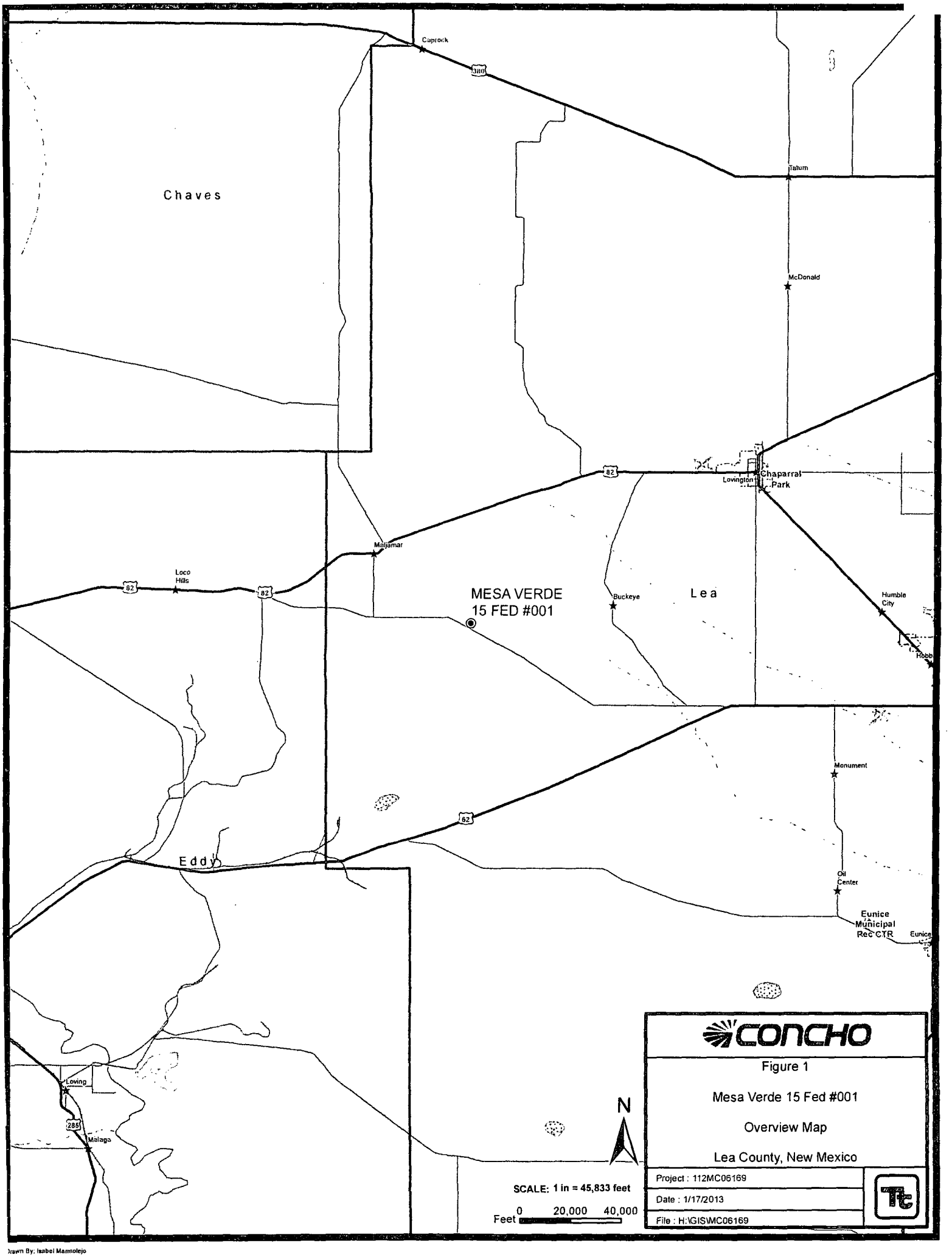
Based on the assessment and work performed at this site, COG requests closure of this spill issue. A final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

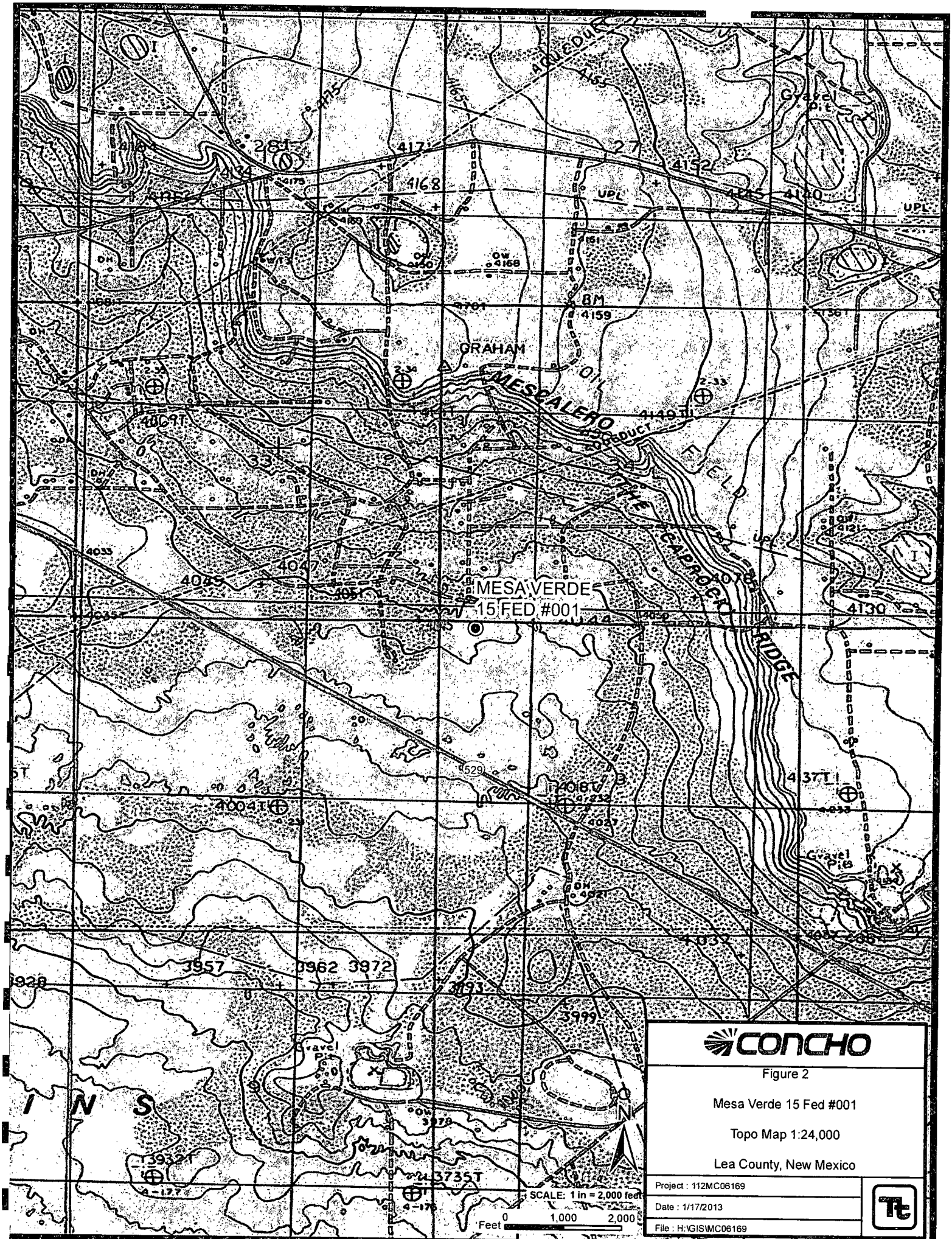
Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Senior Project Manager

cc: Robert McNeil – COG
cc: Mike Burton – BLM
Jeff Robertson - BLM

Figures


Caprock
Tatum
Chaves
McDonald
Lovington
Chaparral Park
Maljamar
Loco Hills
MESA VERDE
15 FED #001
Buckeye
Lea
Humble City
Hobb
Monument
Eddy
Oil Center
Eunice Municipal Rec CTR
Eunice
Loving
Malaga
N
SCALE: 1 in = 45,833 feet
0 20,000 40,000
Feet
CONCHO
Figure 1
Mesa Verde 15 Fed #001
Overview Map
Lea County, New Mexico
Project : 112MC06169
Date : 1/17/2013
File : H:\GIS\MC06169
Drawn By: Isabel Marmolejo



CONCHO

Figure 2

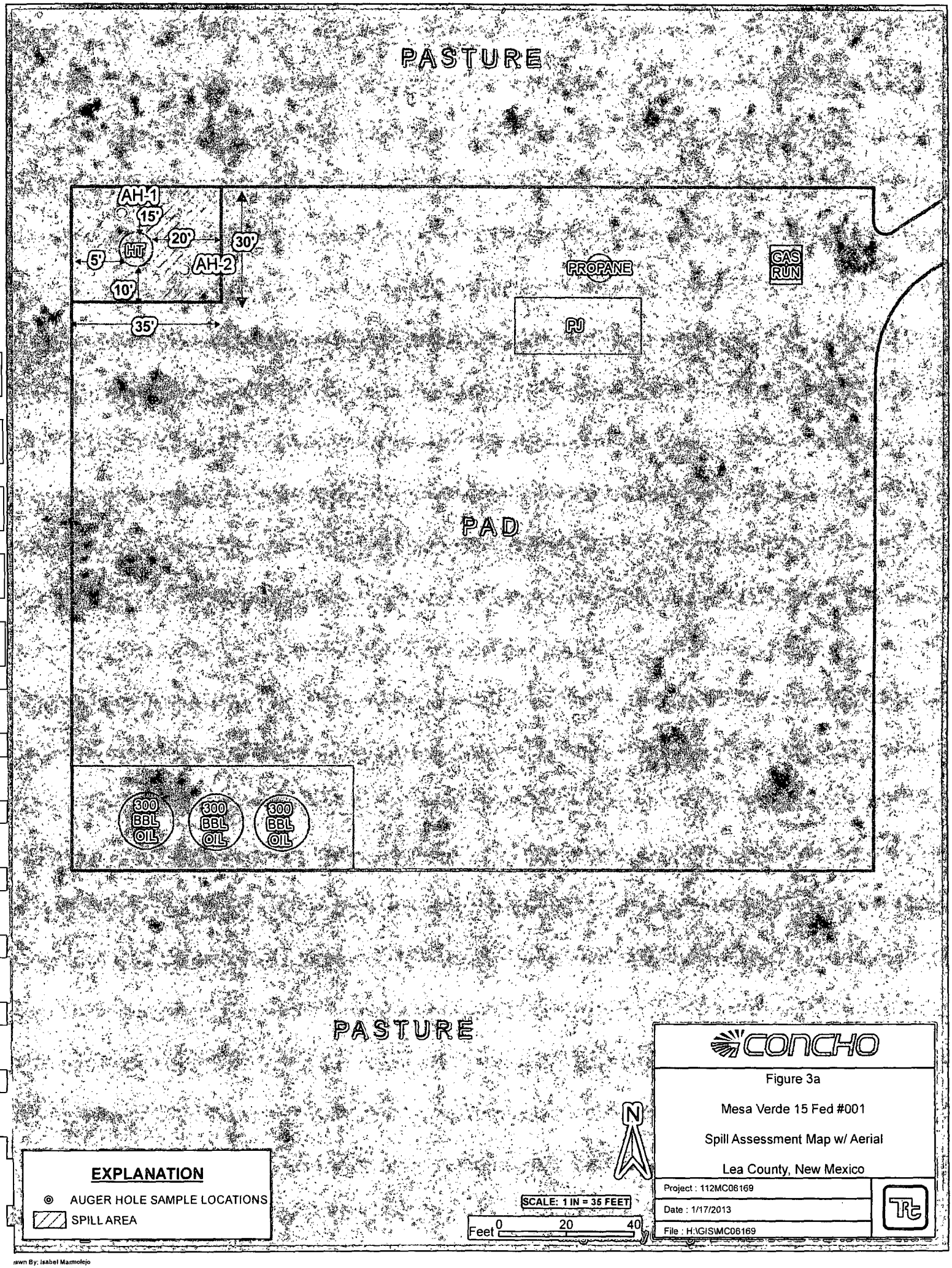
Mesa Verde 15 Fed #001

Topo Map 1:24,000

Lea County, New Mexico

Project : 112MC06169	
Date : 1/17/2013	
File : H:\GIS\MC06169	

Drawn By: Isabel Marmolejo



CONCHO

Figure 3a

Mesa Verde 15 Fed #001

Spill Assessment Map w/ Aerial

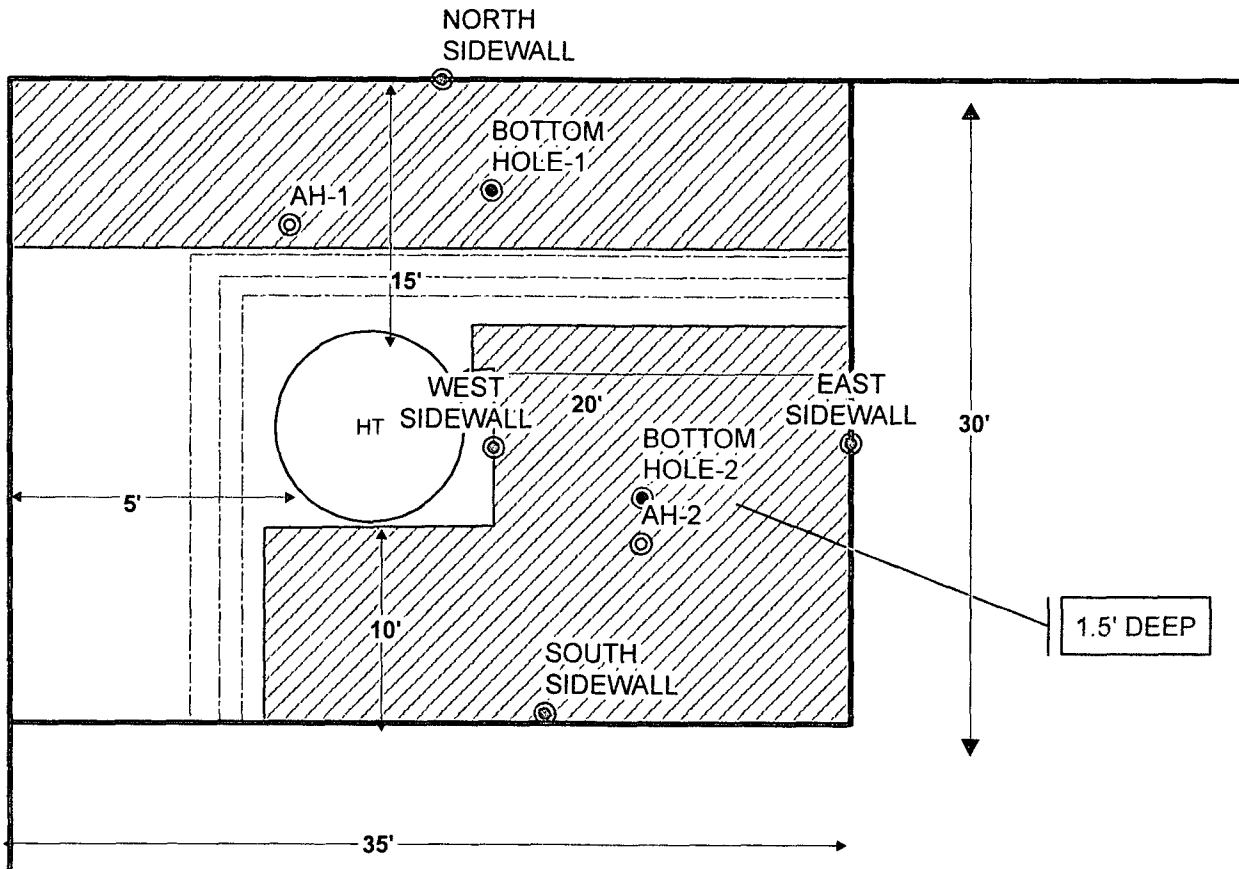
Lea County, New Mexico

Project : 112MC06169

Date : 1/17/2013

File : H:\GIS\MC06169

Drawn By: Isabel Marmolejo



EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- BOTTOM HOLE SAMPLE LOCATIONS
- SIDEWALL SAMPLE LOCATIONS
- EXCAVATED AREA

N

SCALE: 1 IN = 10 FEET

Feet 0 5 10

CONCHO

Figure 4

Mesa Verde 15 Fed #001

Excavation Area & Depth Map

Lea County, New Mexico

Project : 112MC06169	
Date : 05/29/2014	
File : H:\GIS\MC06169	

Drawn By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Mesa Verde 15 Federal #1
Lea 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)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	12/16/2013	0-1		X	927	366	1,293	**1.30**	**21.9**	**9.71**	**32.3**	**65.2**	**4,700**
	"	1-1.5	X		-	-	-	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	76.9
	"	2-2.5	X		-	-	-	-	-	-	-	-	<20.0
	"	3-3.5	X		-	-	-	-	-	-	-	-	<20.0
	"	4-4.5	X		-	-	-	-	-	-	-	-	<20.0
	"	5-5.5	X		-	-	-	-	-	-	-	-	<20.0
AH-1 Bottom Hole	5/6/2014	1.5	X		-	-	-	-	-	-	-	-	288
AH-2	12/16/2013	0-1		X	915	645	1,560	**0.298**	**16.4**	**9.44**	**31.2**	**57.3**	**6,900**
	"	1-1.5	X		-	-	-	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	563
	"	2-2.5	X		-	-	-	-	-	-	-	-	<20.0
	"	3-3.5	X		-	-	-	-	-	-	-	-	<20.0
	"	4-4.5	X		-	-	-	-	-	-	-	-	<20.0
AH-2 Bottom Hole	5/6/2014	1.5	X		-	-	-	-	-	-	-	-	336
North Sidewall	5/6/2014	-	X		-	-	-	-	-	-	-	-	**1,440**
South Sidewall	"	-	X		-	-	-	-	-	-	-	-	**1,100**
East Sidewall	"	-	X		-	-	-	-	-	-	-	-	**4,400**
West Sidewall	"	-	X		-	-	-	-	-	-	-	-	**1,640**

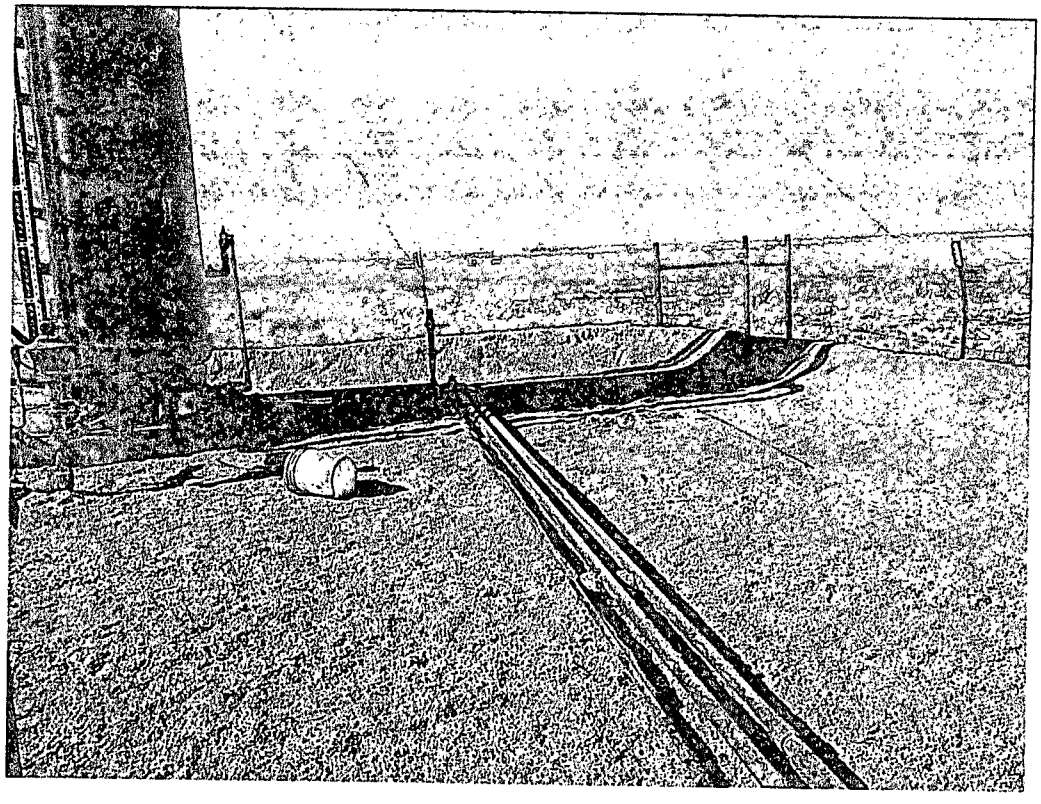
(-) Not Analyzed

Excavated Depths

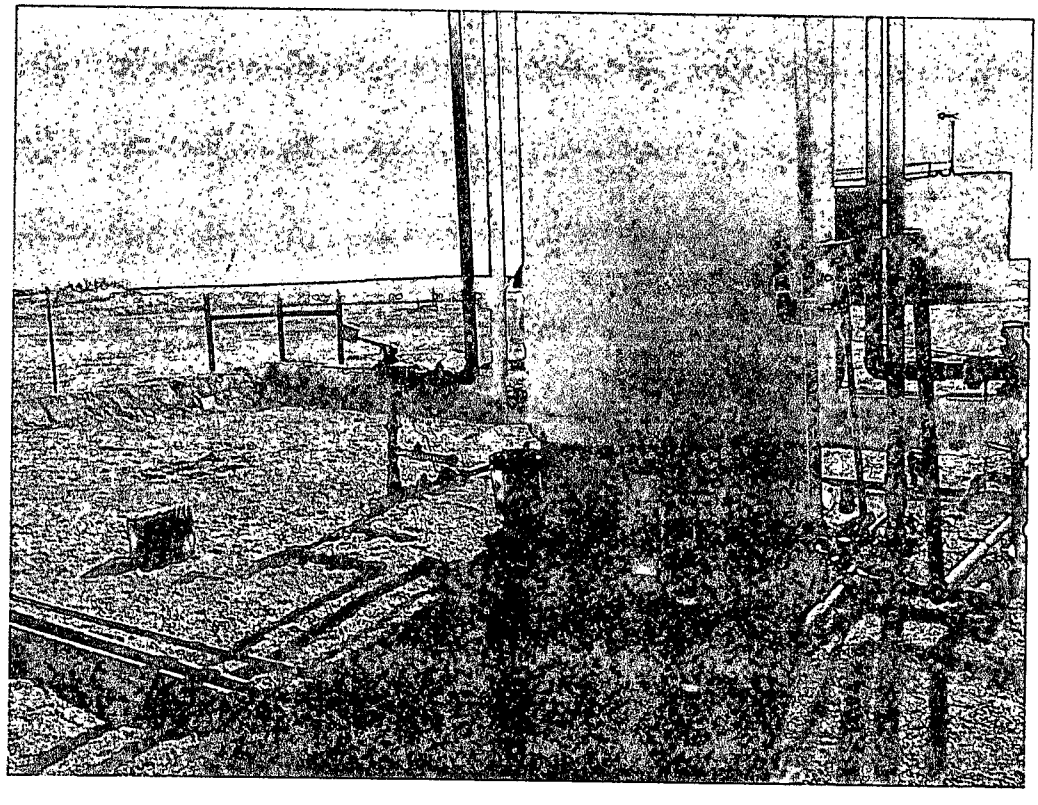
Photos

COG Operating LLC
Mesa Verde 15 Federal #1
Lea County, New Mexico

TETRA TECH



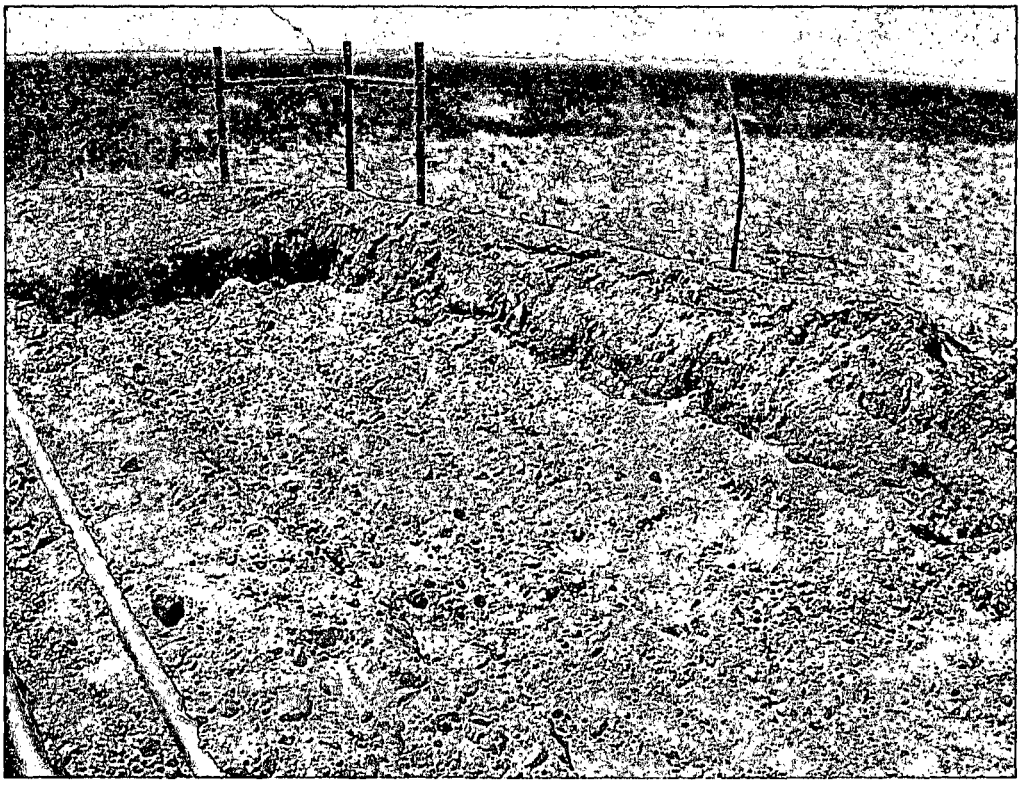
View North – Area of AH-1



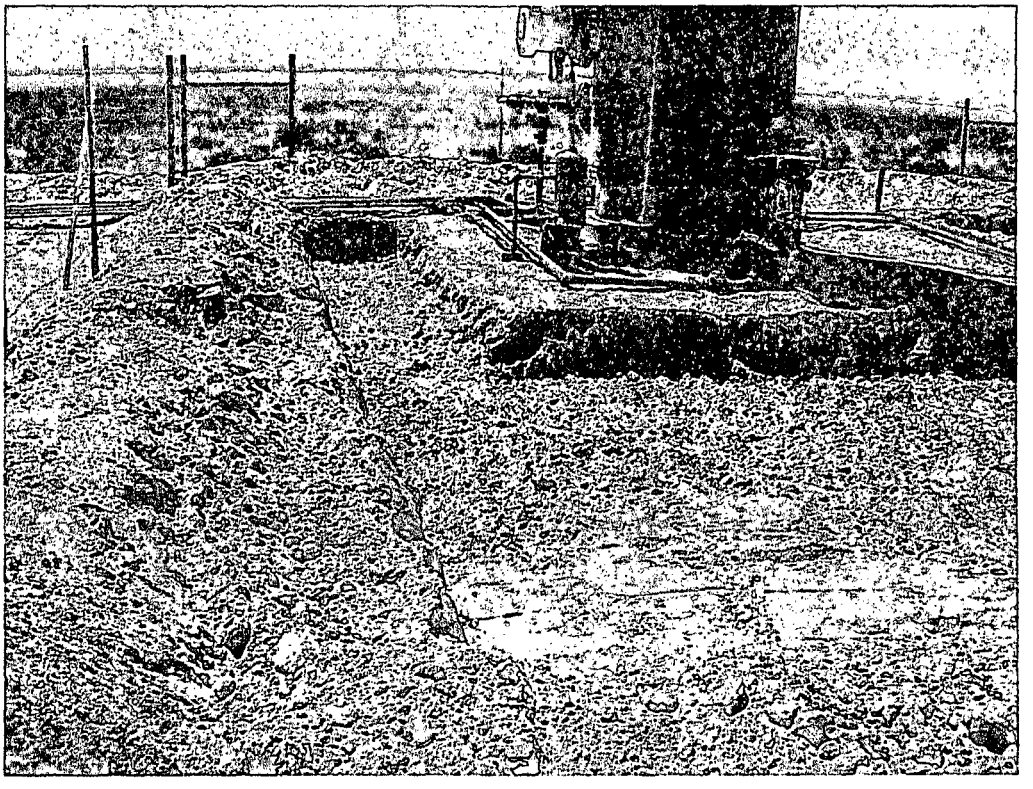
View South – Area of AH-2

COG Operating LLC
Mesa Verde 15 Federal #1
Lea County, New Mexico

TETRA TECH



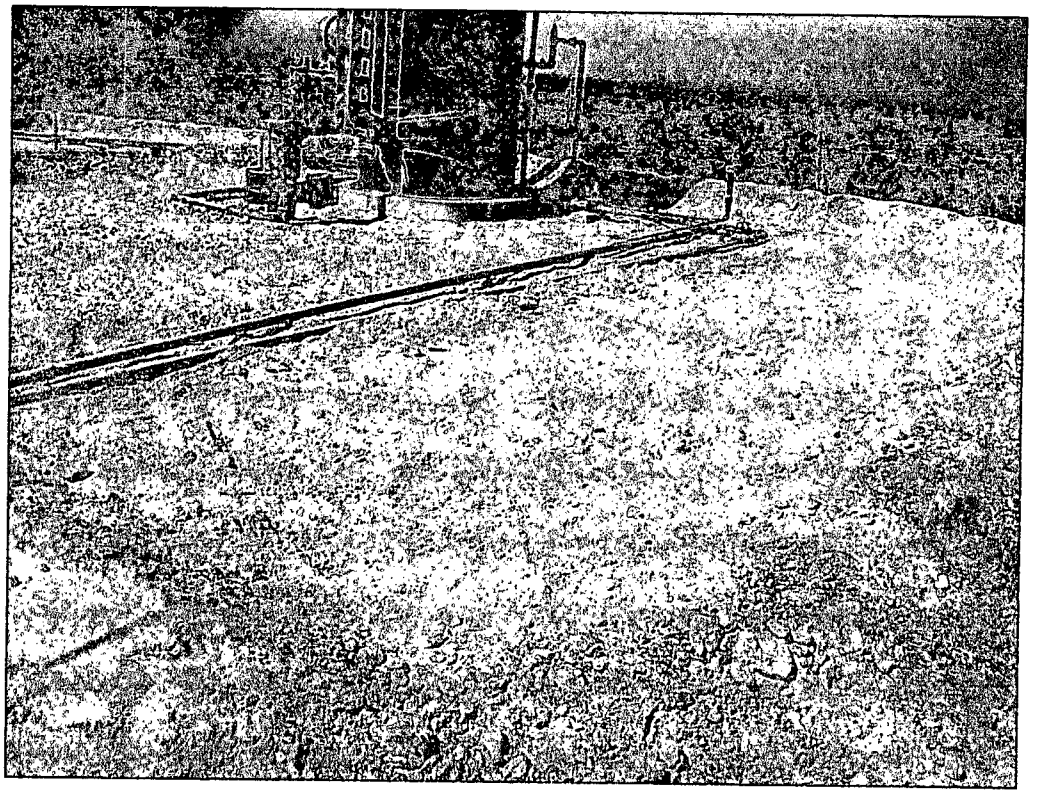
View West – Excavation area of AH-1



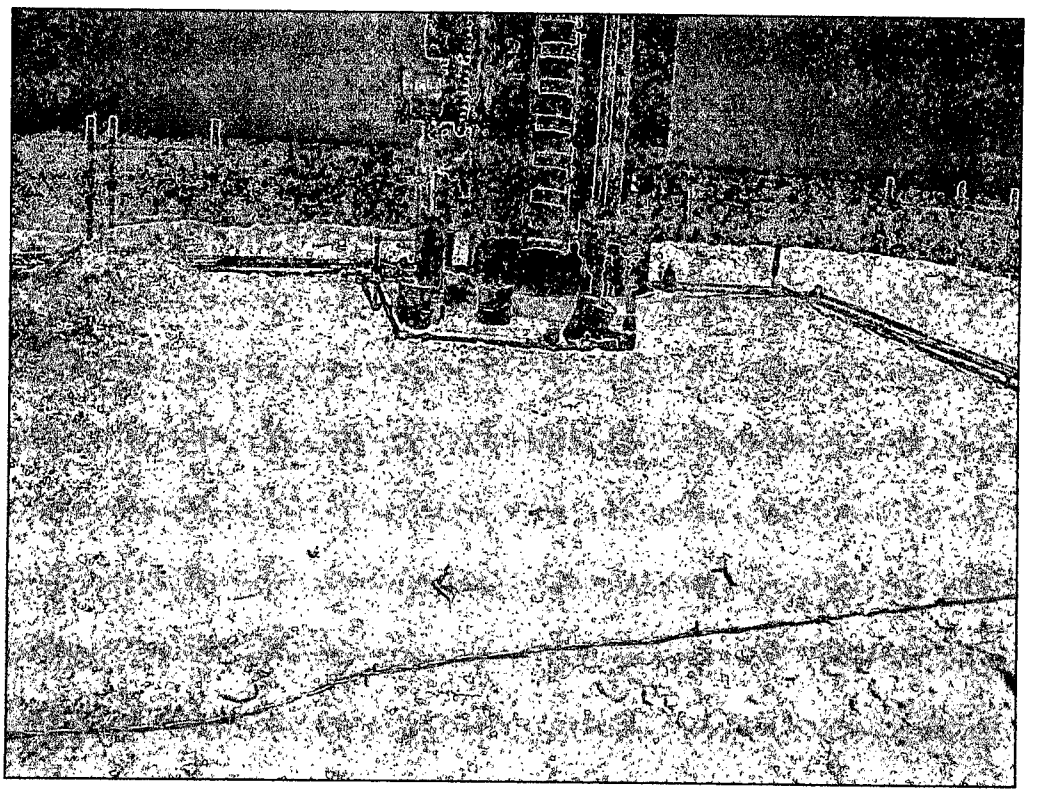
View West – Excavation area of AH-2

COG Operating LLC
Mesa Verde 15 Federal #1
Lea County, New Mexico

TETRA TECH



View West – Backfilled area of AH-1



View North – Backfilled area of AH-2

Appendix A