

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Amoco Federal #13					
Company:	Cimarex Energy Company					
Section, Township and Range	Unit A	Sec 28	T 26S	R 29E		
Lease Number:	API-30-015-25810					
County:	Eddy County					
GPS:	32.01892° N			103.98275° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of HWY 285 and Whites City Rd (CR 724) in rural Eddy County, travel SOUTH on Hwy 285 for approximately 1.10 miles and turn EAST onto Longhorn Rd. and continue for approximately 7.65 miles, turn WEST onto lease road and continue for approximately 1.2 mile to location in the pasture on the WEST side of the lease road.					

Release Data:

Date Released:	1/10/2014
Type Release:	Produced Water
Source of Contamination:	Poly Flowline
Fluid Released:	11 bbls
Fluids Recovered:	1 bbls

Official Communication:

Name:	Christine Alderman		Ike Tavarez
Company:	Cimarex Energy Company		Tetra Tech
Address:	600 N. Marienfield		4000 N. Big Spring
	Suite 600		Ste 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	432-620-1982		(432) 687-8110
Fax:			
Email:	calderman@cimarex.com		Ike.Tavarez@tetrattech.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:		10

Acceptable Soil RRAL (mg/kg)

Benzene	Total BTEX	TPH
10	50	1,000



TETRA TECH

September 3, 2014

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Closure Report for the Cimarex Energy, Amoco Federal #13, Section 28, Township 26 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Cimarex Energy (Cimarex) to assess a spill from the Amoco Federal #13, Section 28, Township 26 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.01892°, W 103.98275°. 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 January 10, 2014, and released approximately ten (10) barrels of produced water and one (1) barrel of oil from a poly flowline. One (1) barrel of produced water was recovered. The spill affected an area of approximate length of 450' in an erosional ravine (wash area) in the pasture, with a width of 1' to 3'. The initial form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 31. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 55' below surface. The groundwater data is shown in Appendix B.

Tetra Tech

Tel 432.682.4559

Fax

432.682.3946

www.tetratech.com

1910 North Big Spring, Midland, TX 79705



Regulatory

A risk-based evaluation was performed for the Site in accordance with the 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 January 21, 2014, Tetra Tech personnel were onsite to sample the spill area. Eight (8) 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 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 or BTEX RRAL's. The areas of auger holes (AH-1, AH-2, AH-3 and AH-4) detected elevated chlorides from 0-3' below surface and were not vertically defined. Deeper samples could not be collected due to the dense rock formation. In the areas of auger holes (AH-5, AH-6, AH-7, and AH-8), a dense rock formation was encountered in the shallow soils (1') and showed elevated chlorides in the soils.

Additional Evaluation and Conclusion

The release occurred in a wash area located in the pasture. Due to access issues, limited area and the dense formation, the excavation of the impacted soil would not be practicable. Initially, Cimarex had proposed flushing the wash area with fresh water to wash out or dilute some of the salts from the surface. However, after several heavy rains in the area, Cimarex discussed with the BLM and NMOCD to re-evaluate the soils. The BLM and the NMOCD approved the resampling activities.

On July 9, 2014, Tetra Tech returned to site and resampled the area. Eight (8) confirmation samples (CS-1 through CS-8) were collected at 0'-1' below surface. The sampling results are shown in Table 1. The confirmation sample locations are shown on Figure 4.



TETRA TECH

Referring to Table 1, the areas of CS-1, CS-2, CS-3, CS-4, CS-5, and CS-7 showed significant decline in chloride concentrations of 1,160 mg/kg, 386 mg/kg, 48 mg/kg, 1,640 mg/kg, 1,260 mg/kg and 918 mg/kg, respectively. The remaining areas did show a slight decline to 15,600 mg/kg (CS-6) and 3,190 mg/kg (CS-8). These areas show limited impact and should naturally attenuate with additional rainfall in the area.

Based on the confirmation sampling and results, Cimarex requests closure with no further action for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

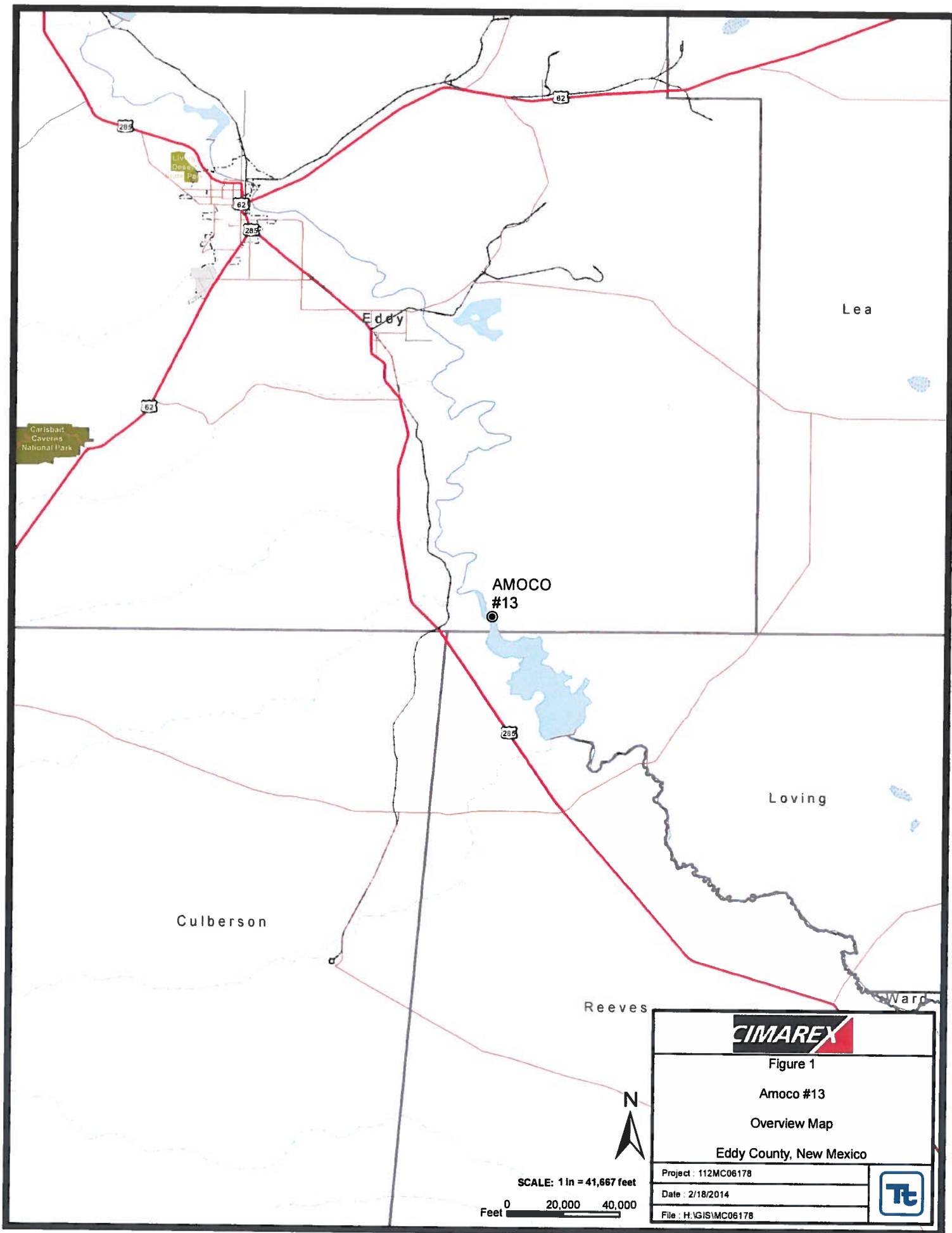
Respectfully submitted,
TETRA TECH

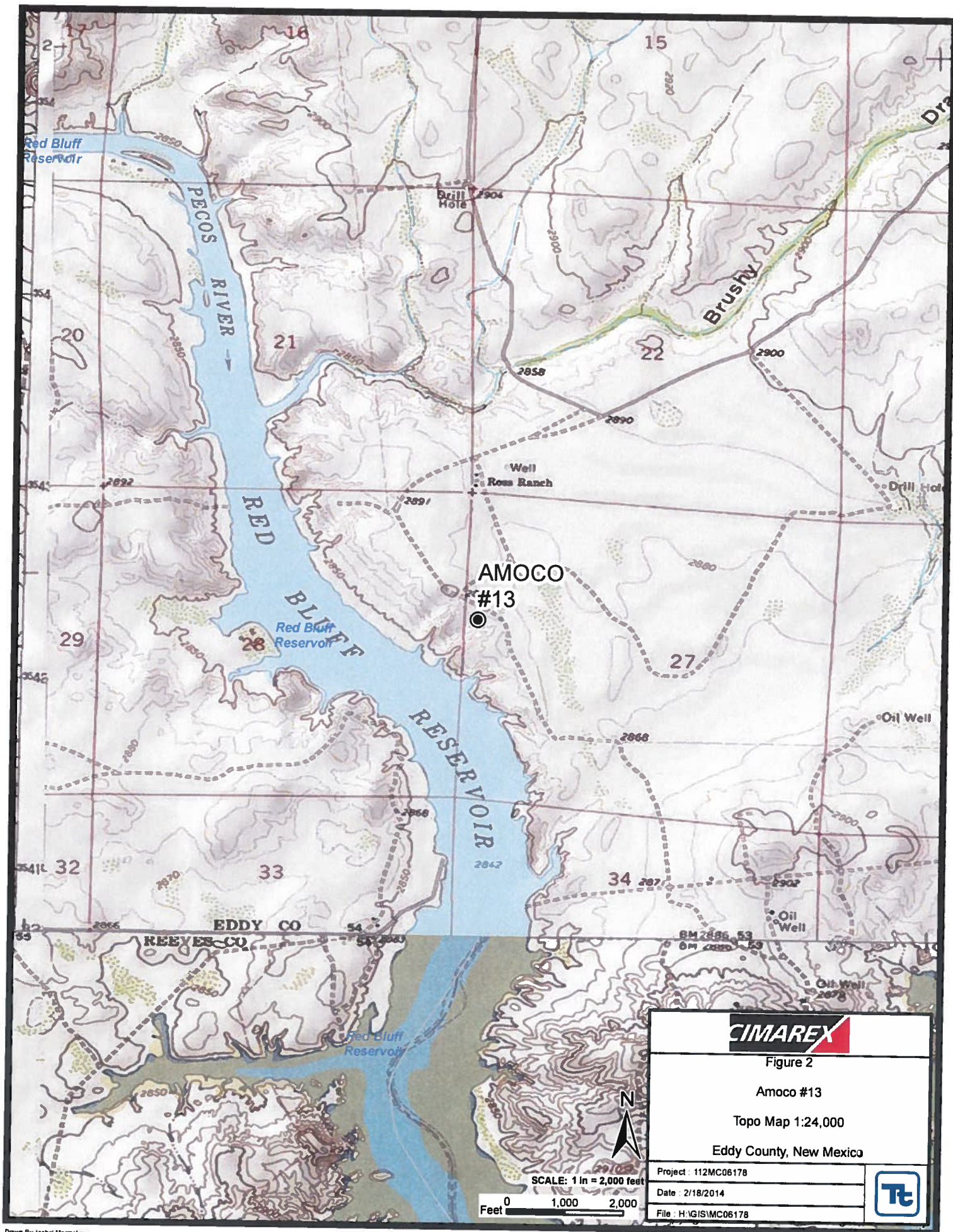


Ike Tavaréz, PG
Senior Project Manager

cc: Christine Alderman - Cimarex
Jim Amos - BLM

Figures





CIMAREX

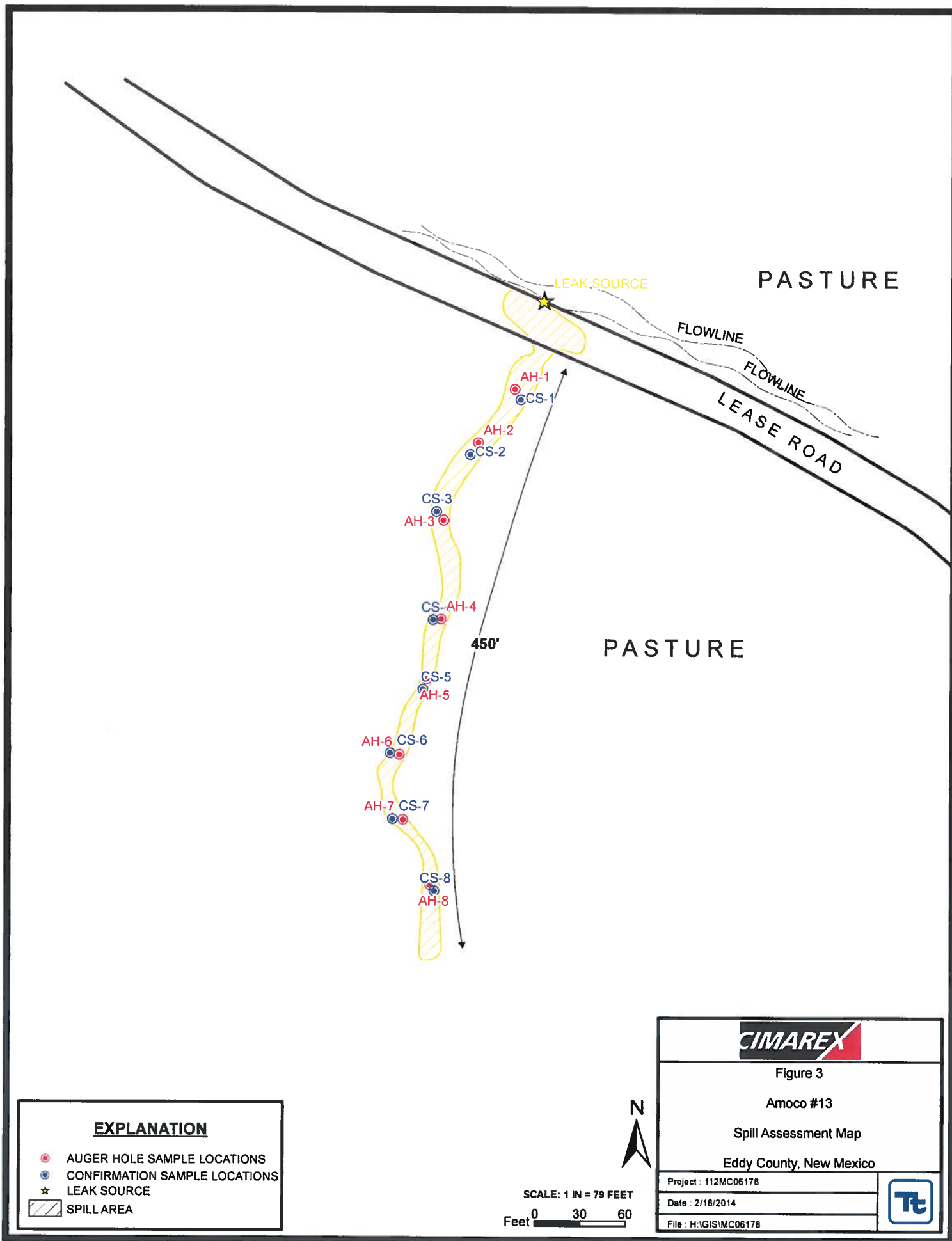
Figure 2

Amoco #13

Topo Map 1:24,000

Eddy County, New Mexico







Tables

Table 1
Cimarex
Amoco Federal #13
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Excavation Bottom Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	1/21/2014	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	8,800
	"	1-1.5	0	X		-	-	-	-	-	-	-	-	6,310
CS-1	7/9/2014	0-1	0	X		-	-	-	-	-	-	-	-	1,160
AH-2	1/21/2014	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	5,890
	"	1-1.5	0	X		-	-	-	-	-	-	-	-	6,050
CS-2	7/9/2014	0-1	0	X		-	-	-	-	-	-	-	-	386
AH-3	1/21/2014	0-1	0	X		<8.00	<50.0	<50.0	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	6,690
	"	1-1.5	0	X		-	-	-	-	-	-	-	-	446
	"	1.5-2	0	X		-	-	-	-	-	-	-	-	2,370
CS-3	7/9/2014	0-1	0	X		-	-	-	-	-	-	-	-	48.0
AH-4	1/21/2014	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	6,690
	"	1-1.5	0	X		-	-	-	-	-	-	-	-	437
	"	2-2.5	0	X		-	-	-	-	-	-	-	-	34.7
	"	3-3.5	0	X		-	-	-	-	-	-	-	-	197
CS-4	7/9/2014	0-1	0	X		-	-	-	-	-	-	-	-	1,640
AH-5	1/21/2014	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	10,800
CS-5	7/9/2014	0-1	0	X		-	-	-	-	-	-	-	-	1,260
AH-6	1/21/2014	0-1	0	X		4.87	<50.0	4.87	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	19,800
CS-6	7/9/2014	0-1	0	X		-	-	-	-	-	-	-	-	15,600
AH-7	1/21/2014	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	6,260
CS-7	7/9/2014	0-1	0	X		-	-	-	-	-	-	-	-	918
AH-8	1/21/2014	0-1	0	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	6,300
CS-8	7/9/2014	0-1	0	X		-	-	-	-	-	-	-	-	3,190

Confirmation samples - sampled after heavy rains in the area

(-) Not Analyzed

Photos



View South – Area of AH-1



View South – Area of AH-2



View South – Area of AH-3



View South – Area of AH-4



View South – Area of AH-5



View South – Area of AH-6



View East – Area of AH-7



View South - Area of AH-8

Appendix A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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 August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

X Initial Report ☐ Final Report

Name of Company: Cimarex Energy Company	Contact: Johnny Tittsworth
Address: 600 N. Marienfield, Suite 600, Midland, TX 79701	Telephone No. (432)250-2059
Facility Name: Amoco Federal #13	Facility Type: Well

Surface Owner: Federal	Mineral Owner:	API No. 30-015-25810
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LOCATION OF RELEASE

Unit Letter A	Section 28	Township 26	Range 29	Feet from the 760	North/South Line FNL	Feet from the 660	East/West Line FEL	County Eddy
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Latitude: 32.01892 Longitude: -103.98275

NATURE OF RELEASE

Type of Release: Produced Water / Crude	Volume of Release: 11 BBLS	Volume Recovered: 1 BBL
Source of Release: Poly Flowline	Date & Hour of Occurrence: 1/10/14	Date & Hour of Discovery: 1/10/14
Was Immediate Notice Given? X Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Max Pfaff	
By Whom? Jose Corona	Date and Hour: 11:00 1/10/14	
Was a Watercourse Reached? <input type="checkbox"/> Yes X No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*


2" poly flow line that runs parallel to the lease road was run over, and was split open. The well was not running, but tubing & casing valves were open and fluid was released onto the road way.

Describe Area Affected and Cleanup Action Taken.*

The fluid filled a depression on the lease road & ran off the road into an erosional ravine, and traveled approximately 480 feet. Tetra Tech will assess the spill. Crude = 1 BBLS / 0 BBLS Produced Water = 10 BBLS / 1 BBLS

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC 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 NMOC 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, NMOC 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: 	Approved by Environmental Specialist:	
Printed Name: Johnny Tittsworth		
Title: Environmental Compliance Coordinator	Approval Date:	Expiration Date:
E-mail Address: jtittsworth@cimarex.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1/15/14 Phone: (432)-250-2059		

* Attach Additional Sheets If Necessary

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

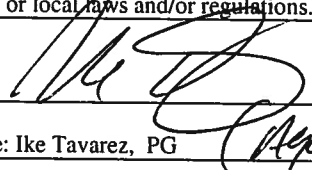
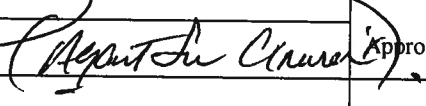
Name of Company Cimarex Energy Company	Contact Christine Alderman
Address 600 Marienfield, Suite 600 Midland, Texas 79701	Telephone No. (432) 620-1982
Facility Name Amoco Federal #13	Facility Type Well
Surface Owner: Federal	Mineral Owner
Lease No. (API #) 30-015-25810	

LOCATION OF RELEASE

Unit Letter A	Section 28	Township 26S	Range 29E	Feet from the 760	North/South Line FNL	Feet from the 660	East/West Line FEL	County Eddy
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Latitude N 32.01892° Longitude W 103.98275°

NATURE OF RELEASE

Type of Release: Produced Water/Crude	Volume of Release: 10bbls produced water 1 bbls crude	Volume Recovered: 1 bbls produced water 0 bbls crude
Source of Release: Poly Flowline	Date and Hour of Occurrence 01/10/2014	Date and Hour of Discovery 01/10/2014
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Max Pfaff	
By Whom? Jose Corona	Date and Hour 11:00 01/10/2014	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.* 2" poly flowline that runs parallel to the lease road was run over, and was split open. The well was not running, but tubing and casing valves were open and fluid was released onto the roadway.		
Describe Area Affected and Cleanup Action Taken.* Release migrated on the lease road and ran off approximately 480' into an erosional ravine (wash area). The width of the wash area measured approximately 1' to 3'. Tetra Tech inspected and collected samples to assess and define extents. After a heavy rain, Tetra Tech collected additional samples to re-evaluate the spill area. Based on the results, the heavy rains had washed out majority of the chlorides from the soils. Due to access issue and limited impact, no further action was proposed. Tetra Tech prepared closure report and submitted to NMOCD and BLM for review.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez, PG	Approved by District Supervisor: 	
Title: Senior Project Manager	Approval Date:	Expiration Date:
Date: 9-3-14	Conditions of Approval:	Attached <input type="checkbox"/>
Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Cimarex - Amoco Federal #13
Eddy County, New Mexico

25 South				28 East		
6	5	4	35	3	32	2
	59					1
7	8	9		10	11	12
18	17	16		15	48	14
67				49		13
19	20	21		22	23	24
	96					
30	29	28		27	26	40
	15	90				
31	32	33		34	35	36
						40

25 South				29 East		
6	5	4	3	2	1	
7	8	9		10	11	12
18	17	16		15		
				40		
19	20	21		22	23	24
				60		
30	29	28		27	26	25
31	32	115	33	34	35	36

25 South				30 East		
6	5	4	3	2	295	1
7	264	8	9	295	10	11
18						12
						390
19	20	21	265	22	23	24
			268			
30	29	28		27	26	25
31	32	33	34	35	36	

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

26 South				29 East		
6	5	78	4	3	2	1
7	8		9	10	11	12
18	17		16	15	14	13
			125			
19	20	21	22	57	23	24
			69			
30	29	28		27	26	25
31	32	33	34	35	36	

26 South				30 East		
6	5	179	4	3	2	1
	180					
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

Appendix C

Summary Report

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

Report Date: January 30, 2014

Work Order: 14012135



Project Location: Eddy Co, NM
Project Name: Cimarex/Amoco Federal #13
Project Number: 112MC06178

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
352039	AH-1 0-1'	soil	2014-01-21	00:00	2014-01-21
352040	AH-1 1-1.5'	soil	2014-01-21	00:00	2014-01-21
352041	AH-2 0-1'	soil	2014-01-21	00:00	2014-01-21
352042	AH-2 1-1.5'	soil	2014-01-21	00:00	2014-01-21
352043	AH-3 0-1'	soil	2014-01-21	00:00	2014-01-21
352044	AH-3 1-1.5'	soil	2014-01-21	00:00	2014-01-21
352045	AH-3 1.5-2'	soil	2014-01-21	00:00	2014-01-21
352046	AH-4 0-1'	soil	2014-01-21	00:00	2014-01-21
352047	AH-4 1-1.5'	soil	2014-01-21	00:00	2014-01-21
352048	AH-4 2-2.5'	soil	2014-01-21	00:00	2014-01-21
352049	AH-4 3-3.5'	soil	2014-01-21	00:00	2014-01-21
352050	AH-5 0-1'	soil	2014-01-21	00:00	2014-01-21
352051	AH-6 0-1'	soil	2014-01-21	00:00	2014-01-21
352052	AH-7 0-1'	soil	2014-01-21	00:00	2014-01-21
352053	AH-8 0-1'	soil	2014-01-21	00:00	2014-01-21

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)
352039 - AH-1 0-1'	<0.0200 _{Qr}	<0.0200 _{Qr}	<0.0200 _{Qr}	<0.0200 _{Qr}	<50.0 _{Qp}	<4.00
352041 - AH-2 0-1'	<0.0200 _{Qr}	<0.0200 _{Qr}	<0.0200 _{Qr}	<0.0200 _{Qr}	<50.0 _{Qp}	<4.00
352043 - AH-3 0-1'	<0.0400 ¹ _{Qr}	<0.0400 _{Qr}	<0.0400 _{Qr}	<0.0400 _{Qr}	<50.0 _{Qp}	<8.00 ²
352046 - AH-4 0-1'	<0.0200 _{Qr}	<0.0200 _{Qr}	<0.0200 _{Qr}	<0.0200 _{Qr}	<50.0 _{Qp}	<4.00
352050 - AH-5 0-1'	<0.0200 _{Qr}	<0.0200 _{Qr}	<0.0200 _{Qr}	<0.0200 _{Qr}	<50.0 _{Qp}	<4.00
352051 - AH-6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 _{Qp}	4.87
352052 - AH-7 0-1'	<0.0200 _{Qr}	<0.0200 _{Qr}	<0.0200 _{Qr}	<0.0200 _{Qr}	<50.0 _{Qp}	<4.00

continued ...

¹Dilution due to surfactants.²Dilution due to surfactants.

... continued

Sample - Field Code	BTEX				TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)		
352053 - AH-8 0-1'	<0.0200 Qr	<0.0200 Qr	<0.0200 Qr	<0.0200 Qr	<50.0 Qs	<4.00

Sample: 352039 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		8800	mg/Kg	4

Sample: 352040 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		6310	mg/Kg	4

Sample: 352041 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		5890	mg/Kg	4

Sample: 352042 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		6050	mg/Kg	4

Sample: 352043 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		6690	mg/Kg	4

Sample: 352044 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		446	mg/Kg	4

Sample: 352045 - AH-3 1.5-2'

continued ...

sample 352045 continued ...

Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		2370	mg/Kg	4

Sample: 352046 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		6690	mg/Kg	4

Sample: 352047 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		437	mg/Kg	4

Sample: 352048 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		34.7	mg/Kg	4

Sample: 352049 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		197	mg/Kg	4

Sample: 352050 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		10800	mg/Kg	4

Sample: 352051 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		19800	mg/Kg	4

Sample: 352052 - AH-7 0-1'

Report Date: January 30, 2014

Work Order: 14012135

Page Number: 4 of 4

Param	Flag	Result	Units	RL
Chloride		6260	mg/Kg	4

Sample: 352053 - AH-8 0-1'

Param	Flag	Result	Units	RL
Chloride		6300	mg/Kg	4

14012135

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2



ETRA TECH

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

CLIENT NAME: Cinara SITE MANAGER: V. T. GARCIA
PROJECT NO.: 112000-10-18 PROJECT NAME: Amoco Federal #13
LAB I.D. NUMBER: 2014 DATE: 2014 TIME:
SAMPLE IDENTIFICATION: Fdd, Co. NIK

PRESERVATIVE METHOD
HNO3
ICE
NONE

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	NUMBER OF CONTAINERS	PAH 8270	TCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCRP Metals Ag As Ba Cd Vt Pd Hg Se	TCRP Volatiles	TCRP Semi Volatiles	RCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 8080/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
352039	11/21		3	X		1	X														
040																					
041																					
042																					
043																					
044																					
045																					
046																					
047																					
048																					

RECEIVED BY: (Signature) [Signature] DATE: 11/21/14 TIME: 15:52
RECEIVED BY: (Signature) [Signature] DATE: 11/23/14 TIME: 15:50
RECEIVED BY: (Signature) [Signature] DATE: 11/23/14 TIME: 15:50
RECEIVED BY: (Signature) [Signature] DATE: 11/23/14 TIME: 15:50

RECEIVING LABORATORY: TA
ADDRESS: 112000-10-18
CITY: Midland STATE: TX ZIP: 79705
CONTACT: TA PHONE: 1123/14 DATE: 11/23/14 TIME: 9:30

REMARKS: Run deeper 15 Benzene exceeds 10, total BTEX exceeds 50, 0.10 PH exceeds 1000
PH del BTEX 1000
PH del BTEX 1000

SAMP E CONDITION WHEN RECEIVED: 68 11/23 3:37/35
Please fill out all copies Laboratory retains Yellow copy - Return original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

SAMPLED BY: (Print & Initial) RG RR DATE: 11/21/14 TIME:
SAMPLE SHIPPED BY: (Circle) BUS
FEDEX HAND DELIVERED UPS
AIRBILL #: OTHER:
TETRA TECH CONTACT PERSON: LS. Q. 808072 Results by:
RUSH Charges Authorized: Yes No

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

OF: 2

ANALYSIS REQUEST

(Circle or Specify Method No.)



TETRA TECH

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

CLIENT NAME:		PROJECT NAME:		SITE MANAGER:		PRESERVATIVE METHOD	
PROJECT NO.:		PROJECT NAME:		SITE MANAGER:		PRESERVATIVE METHOD	
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS
049	2014				X	AH-4 3-3.5	
050						AH-5 0-1	
051						AH 6 0 1	
052						AH-7 0-1	
053						AH-8 0-1	

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<i>[Signature]</i>	1/21/14	1557	<i>[Signature]</i>	1/21/14	1557
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RELINQUISHED BY: (Signature)	DATE:	TIME:	RECEIVED BY: (Signature)	DATE:	TIME:

RECEIVING LABORATORY:	STATE	PHONE:	Z P:	DATE:	TIME:
ADDRESS					
CITY:					
CONTACT:					
SAMPLE CONDITION WHEN RECEIVED:					

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<i>[Signature]</i>	1/21/14	1557
RECEIVED BY: (Signature)	DATE:	TIME:
RECEIVED BY: (Signature		

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

Summary Report

Ike Tavaraz
Tetra Tech
1901 N. Big Spring St.
Midland, TX 79705

Report Date: July 11, 2014

Work Order: 14071034



Project Location: Eddy Co, NM
Project Name: Cimarex/Amoco Federal #13
Project Number: 112MC06178

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
367982	CS-1 (AH-1) 0-1'	soil	2014-07-09	00:00	2014-07-10
367983	CS-2 (AH-2) 0-1'	soil	2014-07-09	00:00	2014-07-10
367984	CS-3 (AH-3) 0-1'	soil	2014-07-09	00:00	2014-07-10
367985	CS-4 (AH-4) 0-1'	soil	2014-07-09	00:00	2014-07-10
367986	CS-5 (AH-5) 0-1'	soil	2014-07-09	00:00	2014-07-10
367987	CS-6 (AH-6) 0-1'	soil	2014-07-09	00:00	2014-07-10
367988	CS-7 (AH-7) 0-1'	soil	2014-07-09	00:00	2014-07-10
367989	CS-8 (AH-8) 0-1'	soil	2014-07-09	00:00	2014-07-10

Sample: 367982 - CS-1 (AH-1) 0-1'

Param	Flag	Result	Units	RL
Chloride		1160	mg/Kg	4

Sample: 367983 - CS-2 (AH-2) 0-1'

Param	Flag	Result	Units	RL
Chloride		386	mg/Kg	4

Sample: 367984 - CS-3 (AH-3) 0-1'

Param	Flag	Result	Units	RL
Chloride		48.0	mg/Kg	4

Sample: 367985 - CS-4 (AH-4) 0-1'

Param	Flag	Result	Units	RL
Chloride		1640	mg/Kg	4

Sample: 367986 - CS-5 (AH-5) 0-1'

Param	Flag	Result	Units	RL
Chloride		1260	mg/Kg	4

Sample: 367987 - CS-6 (AH-6) 0-1'

Param	Flag	Result	Units	RL
Chloride		15600	mg/Kg	4

Sample: 367988 - CS-7 (AH-7) 0-1'

Param	Flag	Result	Units	RL
Chloride		918	mg/Kg	4

Sample: 367989 - CS-8 (AH-8) 0-1'

Param	Flag	Result	Units	RL
Chloride		3190	mg/Kg	4

14071034

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

ANALYSIS REQUEST
(Circle or Specify Method No.)**TETRA TECH**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: CIMAREX		SITE MANAGER: IKE TAVAREZ	
PROJECT NO.: 112MC06178		PROJECT NAME: AMACO #13	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
367982	7/9		CS-1 (AH-1) 0'-1'
983			CS-1 (AH-1) 0'-1'
984			CS-2 (AH-2) 0'-1'
985			CS-3 (AH-3) 0'-1'
986			CS-4 (AH-4) 0'-1'
987			CS-5 (AH-5) 0'-1'
988			CS-6 (AH-6) 0'-1'
989			CS-7 (AH-7) 0'-1'
			CS-8 (AH-8) 0'-1'

NUMBER OF CONTAINERS	PRESERVATIVE METHOD			
	HCL	HNO3	ICE	NONE
1W			X	

TPH 8015 MOD. TX1005 (Ext to C35)	
PAH 8270	
HCRA Metals Ag As Ba Cd Cr Pb Hg Se	
TCLP Metals Ag As Ba Cd Cr Pb 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	
Chlordane	X
Gamma Spec.	
Alpha Beta (Air)	
PLM (Asbestos)	
Major Anions/Cations, pH, TDS	

RELINQUISHED BY: (Signature) <i>[Signature]</i>	Date: 7/10/04	RECEIVED BY: (Signature) Allison Johnson	Date: 7-10-04
RELINQUISHED BY: (Signature)	Time: 13:04	RECEIVED BY: (Signature)	Time: 13:04
RELINQUISHED BY: (Signature)	Date: _____	RECEIVED BY: (Signature)	Date: _____
RELINQUISHED BY: (Signature)	Time: _____	RECEIVED BY: (Signature)	Time: _____
RELINQUISHED BY: (Signature)	Date: _____	RECEIVED BY: (Signature)	Date: _____
RELINQUISHED BY: (Signature)	Time: _____	RECEIVED BY: (Signature)	Time: _____

RECEIVING LABORATORY: **TRACE**

ADDRESS: **MIDLAND** STATE: _____ ZIP: _____

CITY: _____ PHONE: _____ DATE: _____

SAMPLE CONDITION WHEN RECEIVED: **5.2**

REMARKS:

TETRA TECH CONTACT PERSON: **IKE TAVAREZ**

Results by:

RUSH Charges Authorized: Yes No

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

Analysis Request of Chain of Custody Record



CLIENT NAME:	IMAREX	SITE MANAGER:	IKE TAVAREZ
PROJECT NO.:		PROJECT NAME:	

PROJECT NO:	112 MC 06178	PROJECT NAME:	ARMED #13
			AVAREZ

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CO	FILTERED (Y/N)	HCL	HNO3	ICE	NONE
990	7/9		S		X	CS-1 (AH-1) 1'-1.5'	1	W			X	
991						CS-2 (AH-2) 1'-1.5'						
992						CS-2 (AH-2) 1.5'-2'						
993						CS-3 (AH-3) 1'-1.5'						
994						CS-3 (AH-3) 2'-2.5'						

RELINQUISHED BY: (Signature) 7/10/14
Date: _____
Time: _____
RELINQUISHED BY: (Signature) 13:04
Date: _____
Time: _____
RELINQUISHED BY: (Signature) _____
Date: _____
Time: _____
RECEIVING LABORATORY: _____

Date: 7/10/14	RECEIVED BY: (Signature) Allison Johnson
Time: 13:04	RECEIVED BY: (Signature)
Date:	RECEIVED BY: (Signature)
Time:	RECEIVED BY: (Signature)

RECEIVING LABORATORY: _____
ADDRESS: _____
RECEIVED BY: (Signature) *TRAC*
/ mib: _____

PHONE	REMARKS:
	SAMPLE CONDITION WHEN RECEIVED:
	29

TETRA TECH CONTACT PERSON: IKE TAVAREZ

Results by:	RUSH Charges Authorized:
-------------	-----------------------------

SAMPLED BY: (Print & Initial)
 KVAZ/ALAN
 Date: 7/17/94
 Time: _____
 AIRBILL #: _____
 OTHER: _____
 FEDEX
 HAND DELIVERED
 BUS
 UPS

PAGE: 2 OF: 2

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