SITE INFORMATION

Report Type: Closure Report 1RP-4544

General Site Information:						
Site:	**Mallon 34 Federal 1 SWD**					
Company:	**Cimarex Energy**					
Section, Township and Range	**Unit D**	**Sec. 34**	**T 19S**	**R 34E**		
Lease Number:	**API No. 30-025-32605**					
County:	**Lea County**					
GPS:	**32.62222° N**			**103.55352° W**		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From intersection of Co Rd 27-A and HWY 62/180 and travel west on HWY 62/180 for 2.50 mi, turn north onto lease road for 0.25 mi to location.					

Release Data:	
Date Released:	12/10/2016
Type Release:	Produced Water
Source of Contamination:	Pump
Fluid Released:	25 barrels
Fluids Recovered:	15 barrels

Official Communication:			
Name:	Gloria Garza		Clair Gonzales
Company:	Cimarex Energy		Tetra Tech
Address:	600 N. Marienfield St.		901 W. Wall St.
	Ste 400		Ste 100
City:	Midland Texas, 79701		Midland, Texas 79701
Phone number:	(432) 234-3204		(432) 260-8634
Fax:			
Email:	ggarza@cimarex.com		clair.gonzales@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	***0***	*150'-175'*
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

August 13, 2018

Gloria Garza
ESH Specialist – Permian Basin
Cimarex Energy
600 N. Marienfeld St.
Midland, Texas 79701

Re: Closure Report for the Cimarex Energy, Mallon 34 Federal 1 SWD, Unit D, Section 34, Township 19 South, Range 34 East, Lea County, New Mexico. 1RP-4544.

Ms. Garza:

Tetra Tech, Inc. (Tetra Tech) was contacted by Cimarex Energy (Cimarex) to evaluate a release that occurred at the Mallon 34 Federal 1 SWD, Unit D, Section 34, Township 19 South, Range 34 East, Lea County, New Mexico (site). The spill site coordinates are N 32.62222 º, W 103.55352 º. The site location is shown on Maps 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the release was discovered on December 10, 2016, and released approximately twenty-five (25) barrels of produced water due to a pump failure. Approximately fifteen (15) barrels of produced water was recovered. The release occurred inside the bermed facility and impacted an area measuring approximately 25' x 30'. The initial C-141 Form is included in Appendix A.

Groundwater

No water wells were listed within Section 34 on the New Mexico Office of the State Engineer's website, the USGS National Water Information System, or the Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6). The nearest well is listed on the USGS National Water Information System in Township 20 South, Range 34 East, Section 04, approximately 1.80 miles South-Southwest of the site with a reported depth to groundwater of 125 feet below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in this area is approximately 150'-175' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine

recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On November 9, 2017, Tetra Tech personnel were onsite to evaluate and sample the release area. One (1) backhoe trench (T-1) was installed in the spill footprint to a total depth of 12.0' below surface. Selected samples were analyzed chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included. The results of the sampling are summarized in Table 1. The sample locations are shown in Plat 3.

Referring to Table 1, minimal chloride concentrations were detected in the shallow soils, however, a chloride high of 1,730 mg/kg was detected at 10.0' below surface, which declined with depth to 664 mg/kg at 11.0' and 986 mg/kg at 12.0' below surface.

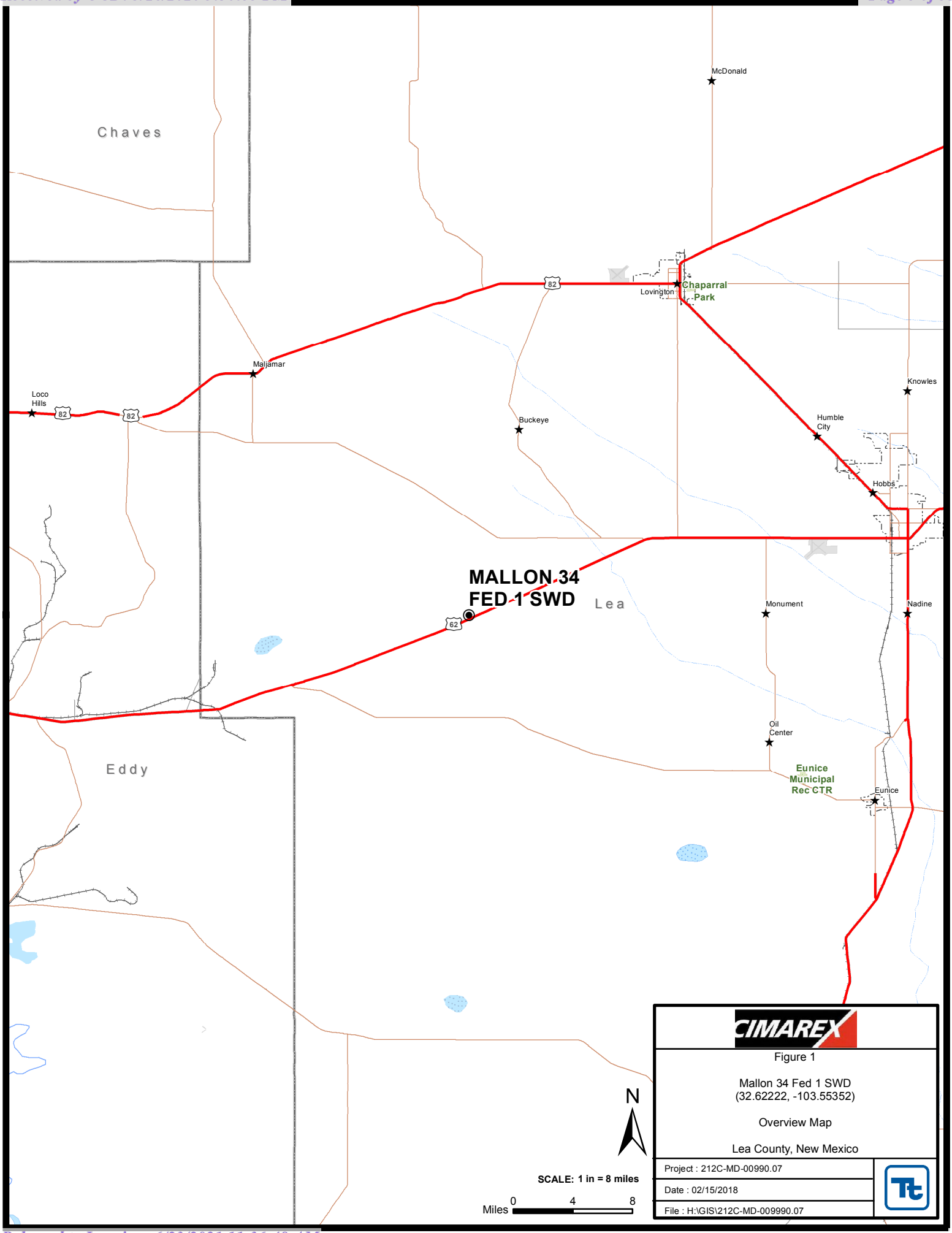
Conclusion and Recommendations

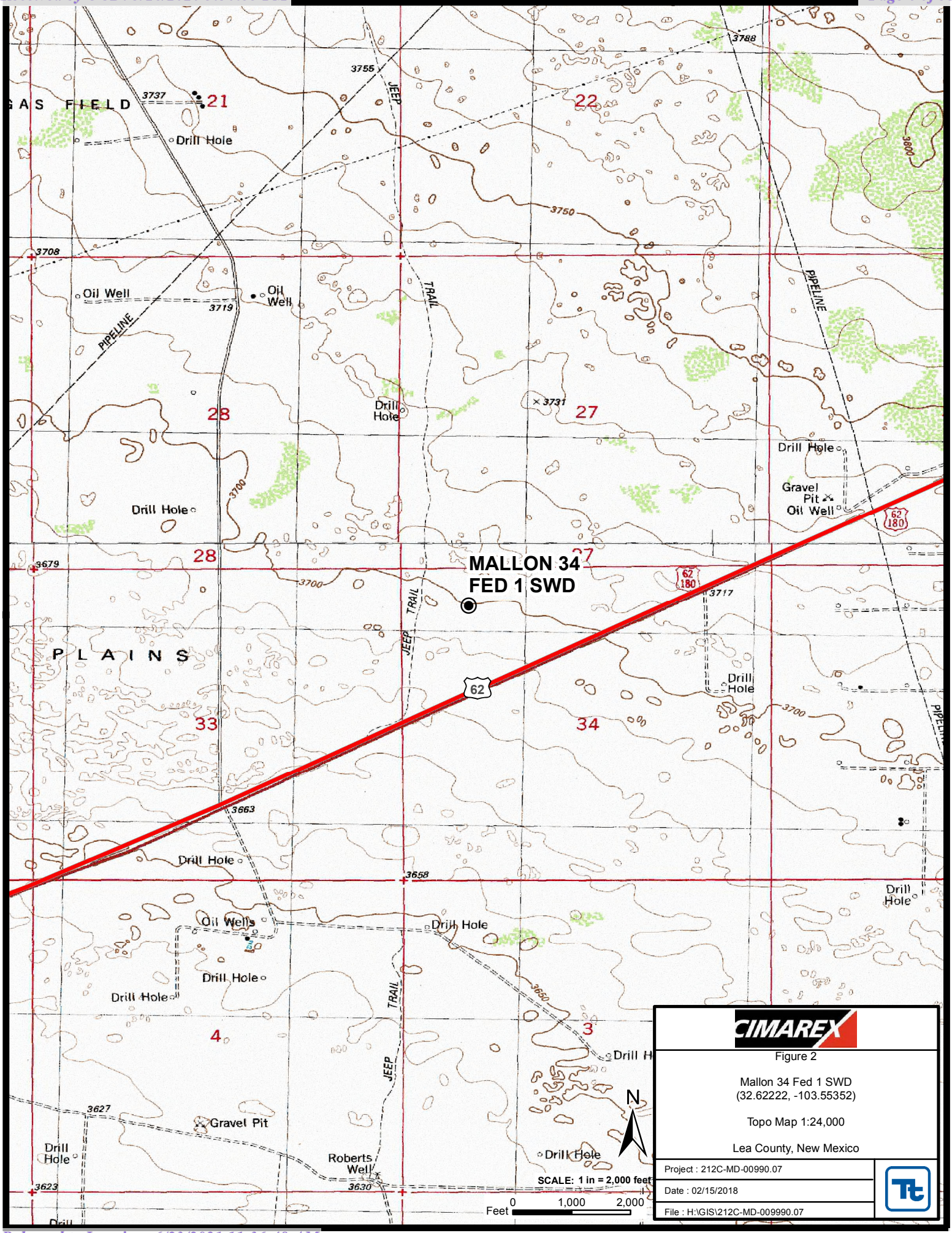
Insignificant chloride concentrations were detected in the shallow soils, however a chloride high of 1,730 mg/kg was detected at 10.0' below surface. Due to the limited size of the release area as well as the onsite equipment and above ground lines, excavation or removal of the impacted soils is not feasible due to safety concerns. Based on the limited area, onsite equipment and lines, the depth to groundwater in the area, and the chloride concentrations detected, Cimarex requests closure of this spill issue. The final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales,
Project Manager

Maps/Plats


McDonald
Chaves
82
Lovington
Chaparral Park
Maljamar
Loco Hills
82
82
Buckeye
Knowles
Humble City
Hobbs
MALLON 34
FED 1 SWD
62
Lea
Monument
Nadine
Oil Center
Eddy
Eunice Municipal Rec CTR
Eunice
N
SCALE: 1 in = 8 miles
Miles 0 4 8
CIMAREX
Figure 1
Mallon 34 Fed 1 SWD
(32.62222, -103.55352)
Overview Map
Lea County, New Mexico
Project : 212C-MD-00990.07
Date : 02/15/2018
File : H:\GIS\212C-MD-009990.07



CIMAREX

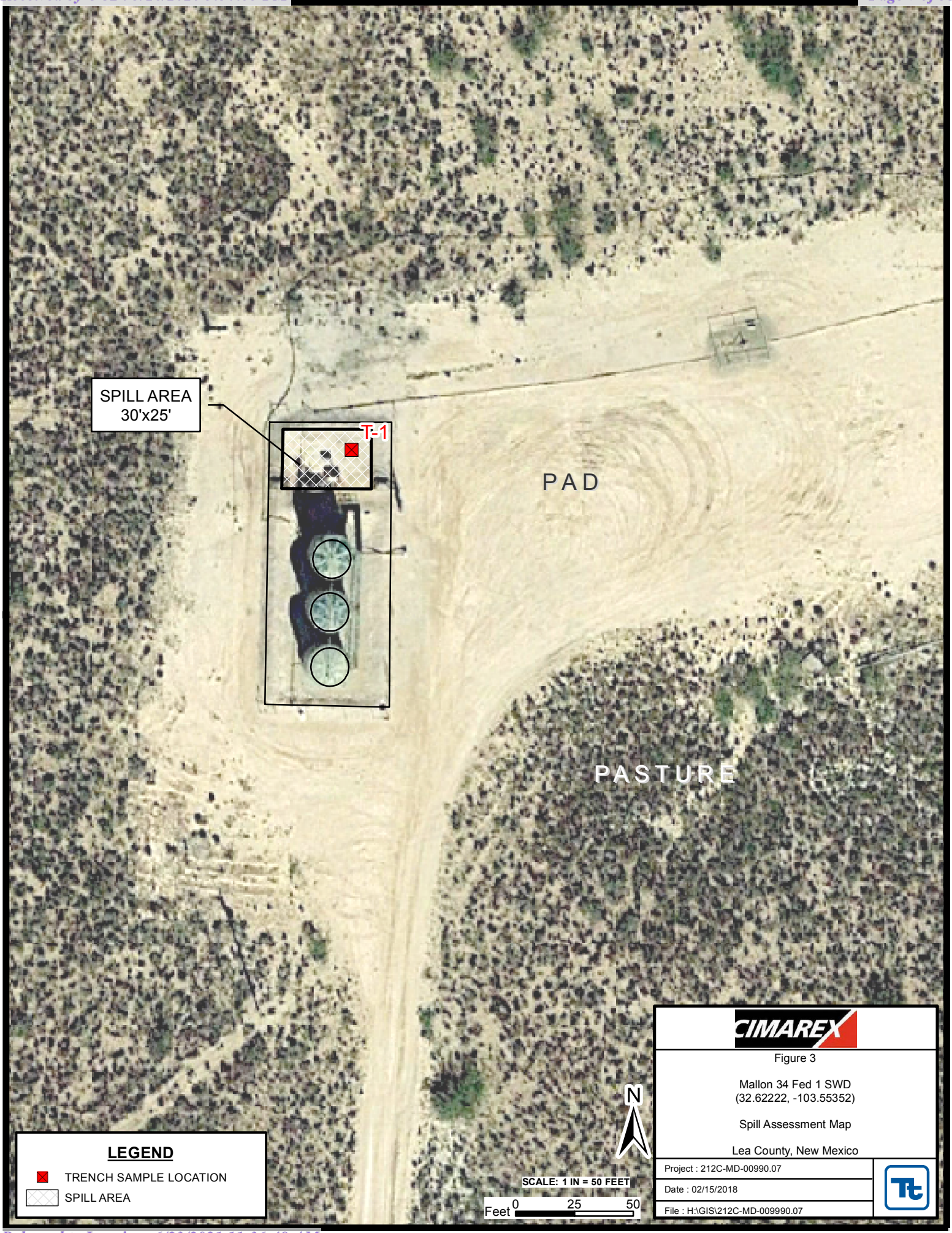
Figure 2

Mallon 34 Fed 1 SWD
(32.62222, -103.55352)

Topo Map 1:24,000

Lea County, New Mexico

Project : 212C-MD-00990.07	
Date : 02/15/2018	
File : H:\GIS\212C-MD-009990.07	


SPILL AREA
30'x25'
T-1
PAD
PASTURE
LEGEND
TRENCH SAMPLE LOCATION
SPILL AREA
N
SCALE: 1 IN = 50 FEET
Feet 0 25 50
CIMAREX
Figure 3
Mallon 34 Fed 1 SWD
(32.62222, -103.55352)
Spill Assessment Map
Lea County, New Mexico
Project : 212C-MD-00990.07
Date : 02/15/2018
File : H:\GIS\212C-MD-009990.07

Lab Analysis

Table 1
Cimarex Energy
Mallon 34 Fed 1 SWD
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		Chloride (mg/kg)
			In-Situ	Removed	
T-1	11/9/2017	0-1	X		55.9
	"	2	X		125
	"	3	X		272
	"	4	X		**841**
	"	5	X		342
	"	6	X		146
	"	7	X		273
	"	8	X		77.8
	"	9	X		128
	"	10	X		**1,730**
	"	11	X		664
	"	12	X		**986**

Analytical Report 568801

for

Tetra Tech- Midland

Project Manager: Clair Gonzales

Mallon 34 Fed 1 SWD

212C-MD-00990.07

28-NOV-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

28-NOV-17

Project Manager: **Clair Gonzales**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **568801**
Mallon 34 Fed 1 SWD
Project Address: Lea County, New Mexico

Clair Gonzales:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 568801. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 568801 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Mike Kimmel
Client Services Manager

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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample Cross Reference 568801

Tetra Tech- Midland, Midland, TX

Mallon 34 Fed 1 SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1 0-1'	S	11-09-17 00:00		568801-001
T-1 2'	S	11-09-17 00:00		568801-002
T-1 3'	S	11-09-17 00:00		568801-003
T-1 4'	S	11-09-17 00:00		568801-004
T-1 5'	S	11-09-17 00:00		568801-005
T-1 6'	S	11-09-17 00:00		568801-006
T-1 7'	S	11-09-17 00:00		568801-007
T-1 8'	S	11-09-17 00:00		568801-008
T-1 9'	S	11-09-17 00:00		568801-009
T-1 10'	S	11-09-17 00:00		568801-010
T-1 11'	S	11-09-17 00:00		568801-011
T-1 12'	S	11-09-17 00:00		568801-012

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: Mallon 34 Fed 1 SWD

Project ID: *212C-MD-00990.07*
Work Order Number(s): *568801*

Report Date: *28-NOV-17*
Date Received: *11/17/2017*

Sample receipt non conformances and comments:

1' depth samples not submitted.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3034266 Inorganic Anions by EPA 300/300.1

Lab Sample ID 568801-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 568801-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 568801

Tetra Tech- Midland, Midland, TX

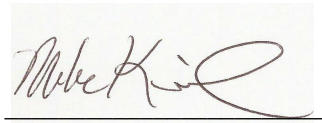
Project Name: Mallon 34 Fed 1 SWD

Project Id: 212C-MD-00990.07
Contact: Clair Gonzales
Project Location: Lea County, New Mexico

Date Received in Lab: Fri Nov-17-17 09:00 am
Report Date: 28-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568801-001		568801-002		568801-003		568801-004		568801-005		568801-006	
	Field Id:	T-1 0-1'		T-1 2'		T-1 3'		T-1 4'		T-1 5'		T-1 6'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-27-17 16:20		Nov-27-17 16:20		Nov-27-17 16:20		Nov-27-17 16:20		Nov-27-17 16:20		Nov-27-17 16:20	
	Analyzed:	Nov-28-17 00:32		Nov-28-17 00:37		Nov-28-17 00:43		Nov-28-17 00:49		Nov-28-17 01:07		Nov-28-17 01:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		55.9	4.94	125	4.95	272	4.95	841	4.92	342	4.94	146	4.93

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi



Mike Kimmel
Client Services Manager

Final 1.000

Certificate of Analysis Summary 568801

Tetra Tech- Midland, Midland, TX

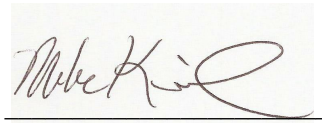
Project Name: Mallon 34 Fed 1 SWD

Project Id: 212C-MD-00990.07
Contact: Clair Gonzales
Project Location: Lea County, New Mexico

Date Received in Lab: Fri Nov-17-17 09:00 am
Report Date: 28-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568801-007		568801-008		568801-009		568801-010		568801-011		568801-012	
	Field Id:	T-1 7'		T-1 8'		T-1 9'		T-1 10'		T-1 11'		T-1 12'	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-27-17 16:20		Nov-27-17 16:20		Nov-27-17 16:20		Nov-27-17 16:20		Nov-27-17 16:20		Nov-27-17 16:20	
	Analyzed:	Nov-28-17 01:19		Nov-28-17 01:25		Nov-28-17 01:31		Nov-28-17 01:54		Nov-28-17 01:37		Nov-28-17 02:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		273	4.97	77.8	4.93	128	4.94	1730	24.7	664	4.97	986	4.92

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi



Mike Kimmel
Client Services Manager

Final 1.000

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

BS / BSD Recoveries

Project Name: Mallon 34 Fed 1 SWD

Work Order #: 568801 **Project ID:** 212C-MD-00990.07

Analyst: MNV **Date Prepared:** 11/27/2017 **Date Analyzed:** 11/28/2017

Lab Batch ID: 3034266 **Sample:** 7634981-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	258	103	250	245	98	5	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Mallon 34 Fed 1 SWD

Work Order # : 568801 **Project ID:** 212C-MD-00990.07

Lab Batch ID: 3034266 **QC- Sample ID:** 568780-041 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/28/2017 **Date Prepared:** 11/27/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1130	246	1230	41	246	1250	49	2	90-110	20	X

Lab Batch ID: 3034266 **QC- Sample ID:** 568801-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/28/2017 **Date Prepared:** 11/27/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	664	249	874	84	249	905	97	3	90-110	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

568801

Client Name: Cimarex	Site Manager: Clair Gonzales
Project Name: Mallon 34 Fed 1 SWD	
Project Location: (county, state) Lea County, New Mexico	Project #: 212C-MD-00990.07
Invoice to: Cimarex	
Receiving Laboratory: Xenco	Sampler Signature: Mat McDaniel
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)
	T-1 0-1'	11/9/2017			X				X			1	
	T-1 1'	11/9/2017			X				X			1	
	T-1 2'	11/9/2017			X				X			1	
	T-1 3'	11/9/2017			X				X			1	
	T-1 4'	11/9/2017			X				X			1	
	T-1 5'	11/9/2017			X				X			1	
	T-1 6'	11/9/2017			X				X			1	
	T-1 7'	11/9/2017			X				X			1	
	T-1 8'	11/9/2017			X				X			1	
	T-1 9'	11/9/2017			X				X			1	

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
														X							
														X							
														X							
														X							
														X							
														X							
														X							
														X							
														X							
														X							

Relinquished by: Date: Time:

Received by: Date: 11/17 Time: 09:00

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

Temp: 2.5 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.3

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

568801

Client Name: Cimarex

Site Manager: Clair Gonzales

Project Name: Mallon 34 Fed 1 SWD

Project Location: (county, state) Lea County, New Mexico

Project #: 212C-MD-00990.07

Invoice to: Cimarex

Receiving Laboratory: Xenco

Sampler Signature: Mat McDaniel

Comments:

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	# CONTAINERS	FILTERED (Y/N)
	T-1 10'	11/9/2017			X			X	1	
	T-1 11'	11/9/2017			X			X	1	
	T-1 12'	11/9/2017			X			X	1	

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
														X				
														X				
														X				

Relinquished by: Date: Time:

Received by: Date: Time: 11/17 09:00

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature

Temp: 2.5 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.3

REMARKS:

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
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568801

Client Name: Cimarex	Site Manager: Clair Gonzales
Project Name: Mallon 34 Fed 1 SWD	
Project Location: (county, state) Lea County, New Mexico	Project #: 212C-MD-00990.07
Invoice to: Cimarex	
Receiving Laboratory: Xenco	Sampler Signature: Mat McDaniel
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: DATE	TIME	MATRIX WATER	SOIL		PRESERVATIVE METHOD HCL	HNO_3	ICE			# CONTAINERS	FILTERED (Y/N)
	T-1 0-1'	11/9/2017			X				X			1	
	T-1 1'	11/9/2017			X				X			1	
	T-1 2'	11/9/2017			X				X			1	
	T-1 3'	11/9/2017			X				X			1	
	T-1 4'	11/9/2017			X				X			1	
	T-1 5'	11/9/2017			X				X			1	
	T-1 6'	11/9/2017			X				X			1	
	T-1 7'	11/9/2017			X				X			1	
	T-1 8'	11/9/2017			X				X			1	
	T-1 9'	11/9/2017			X				X			1	

ANALYSIS REQUEST
(Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
														X								
														X								
														X								
														X								
														X								
														X								
														X								
														X								
														X								
														X								

Relinquished by: Date: Time:
Received by: Date: Time: 11/17 09:00

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

LAB USE ONLY
Sample Temperature

REMARKS:
- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

Temp: 2.5 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.3

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

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568801

Client Name: Cimarex	Site Manager: Clair Gonzales
Project Name: Mallon 34 Fed 1 SWD	
Project Location: (county, state) Lea County, New Mexico	Project #: 212C-MD-00990.07
Invoice to: Cimarex	
Receiving Laboratory: Xenco	Sampler Signature: Mat McDaniel
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	# CONTAINERS	FILTERED (Y/N)
	T-1 10'	11/9/2017			X			X	1	
	T-1 11'	11/9/2017			X			X	1	
	T-1 12'	11/9/2017			X			X	1	

ANALYSIS REQUEST (Circle or Specify Method No.)

	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
																X				
																X				
																X				

Relinquished by:	Date:	Time:	Received by: Date: Time: 11/17 09:00
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

Temp: 2.5 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.3

Photos

Cimarex Energy
Mallon 34 Federal 1 SWD
Lea County, New Mexico

TETRA TECH

View South – Area of T-1

View South – Area of T-1

Appendix A: Agency Forms

District I
625 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

☒ Initial Report ☐ Final Report

Name of Company Cimarex Energy	Contact Christine Alderman
Address 600 N Marienfeld Ste 600 Midland TX	Telephone No. 432-853-7059
Facility Name Mallon 34 Fed 1 SWD	Facility Type SWD

Surface Owner BLM	Mineral Owner	API No. 30-025-32605

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	34	19S	34E	660	N	990	W	Lea

Latitude 32.62222 Longitude -103.55352

NATURE OF RELEASE

Type of Release produced water	Volume of Release 25 bbls	Volume Recovered 15 bbls
Source of Release pump	Date and Hour of Occurrence 12/10/2016	Date and Hour of Discovery 12/10/2016
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Shelly Tucker, Kristen Lynch	
By Whom? Gloria Garza	Date and Hour 12/10/2016	
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 rig gasket in a triplex pump failed due to corrosion. The rig gasket has been replaced.

Describe Area Affected and Cleanup Action Taken. All fluids were contained in an unlined berm.

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: Christine Alderman

Printed Name: Christine Alderman

Title: ESH Supervisor

E-mail Address: calderman@cimarex.com

Date: 12/15/2016 Phone: 432-853-7059

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: Expiration Date:

Conditions of Approval: Attached ☐

Attach Additional Sheets If Necessary

Jaime Castillo 575-200-4885

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**	Contact **Christine Alderman**
Address **600 N. Marienfeld Ste 600, Midland, TX**	Telephone No. **(432) 853-7059**
Facility Name: **Mallon 34 Fed 1 SWD**	Facility Type **SWD**

Surface Owner: Federal	Mineral Owner:	API No. 30-025-32605

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	34	19S	34E	660	N	990	W	Lea

Latitude N 32.62222° **Longitude** W 103.55352°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 25 bbls	Volume Recovered: 15 bbls
Source of Release: Pump	Date and Hour of Occurrence 12/10/16	Date and Hour of Discovery 12/10/16
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Shelly Tucker, Kristen Lynch	
By Whom? Gloria Garza	Date and Hour 12/10/16	
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.*

The rig gasket on a triplex pump failed due to corrosion. All fluids were contained inside the unlined berm.

Describe Area Affected and Cleanup Action Taken.*

The site was inspected and soil samples were collected to define the spills extent. The samples collected showed slightly elevated chloride concentrations at depth and cannot be safely removed. Tetra Tech prepared a 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:	OIL CONSERVATION DIVISION
Printed Name: Ike Tavarez	Approved by District Supervisor: Karen Collins EnSpec
Title: Project Manager	Approval Date: 6/23/2021 Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval: None Attached ☐
Date: 02/13/18 Phone: (432) 682-4559	

* Attach Additional Sheets If Necessary

Appendix B: Groundwater Data

Water Well Data
Average Depth to Groundwater (ft)
Cimarex - Mallon 34 Federal 1 SWD
Lea County, New Mexico

18 South 33 East

6	5	4	3 60	2	1
7	8 100	9	10 62	11 46	12 143 140
18	17 85	16	15	14 36	13 60
19 >140	20	21	22	23	24 195
30 35	29	28	27	26	25
31	32	33 177	34	35	36

18 South 34 East

6 130	5 105	4	3 87	2 102	1 107
7 83	8 148	9	10 148	11 110	12 115 92
18 125	17	16 108	15 114 110	14 103	13 96
19 105	20 125	21	22	23	24
30	29	28	27 112	26	25 117
31	32	33	34	35 118	36

18 South 35 East

Buckeye

6 89	5 69	4 58	3 62	2 55 51	1
7 85	8	9 72	10 49	11 59 48	12
18 90	17 90 124	16 75	15	14 90	13 135
19 74 70	20 85 50	21	22 70	23	24
30	29 95	28	27 68	26 60	25
31	32 58	33 80	34	35 58	36

19 South 33 East

6	5	4	3	2	1
7	8	9	10	11	12
18 340	17 116	16	15	14	13
19	20	21	22	23	24
30	29	28 130 dry	27	26 92 85	25
31	32 185	33	34	35	36

19 South 34 East

6 244	5	4	3	2 100	1
7	8	9 29 28.6	10	11 123	12 60
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25 28
31 65 110	32	33	34	35	36

19 South 35 East

6 61 58	5 63	4 70	3	2	1 63
7 51	8 18	9 20	10 53	11	12
18	17 26 80	16	15 26	14 27	13 27
19	20	21	22 27	23	24 20
30	29	28	27	26	25
31	32	33	34	35	36

20 South 33 East

6	5 325 278	4	3	2	1
7	8	9	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

20 South 34 East

6	5	4 125	3	2	1
7	8	9	10	11	12
18	17 128 140	16	15	14 150	13
19	20	21	22	23	24 270
30	29	28	27	26	25
31	32	33	34 82	35	36

20 South 35 East

6 56 64	5 64	4	3	2	1
7	8	9	10	11	12 49
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31 65	32	33 89	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00683 POD1		CP	LE	3	3	4	25	19S	34E	639530	3610685*	120	28	92
CP 00806 POD1		CP	LE			4	04	19S	34E	635109	3617151*	50		
CP 00811 POD1		CP	LE			4	09	19S	34E	635132	3615542*	50		
CP 00875		CP	LE	3	4	3	05	19S	34E	632592	3617013*	200		
CP 01672 POD1		CP	LE	1	3	1	36	19S	34E	638736	3610009	100		
L 04059		L	LE			4	1	12	19S	34E	639146	3616412*	125	60	65
L 04723		L	LE	1	1	1	11	19S	34E	637026	3616880*	145	123	22
L 06731		L	LE	3	2	2	12	19S	34E	639844	3616727*	120	80	40
L 07213		L	LE	4	1	4	31	19S	34E	631700	3609351*	160	110	50
L 10347		L	LE			2	3	03	19S	34E	635909	3617566*	130		
L 10380		L	LE	4	4	4	02	19S	34E	638428	3617102*	153	100	53
L 12103 POD1		L	LE	3	3	4	02	19S	34E	637920	3617173	120		

Average Depth to Water: **83 feet**

Minimum Depth: **28 feet**

Maximum Depth: **123 feet**

Record Count: 12

PLSS Search:

Township: 19S **Range:** 34E

***UTM location was derived from PLSS - see Help**

National Water Information System: Web Interface

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

site_no list =

- 323529103332501

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

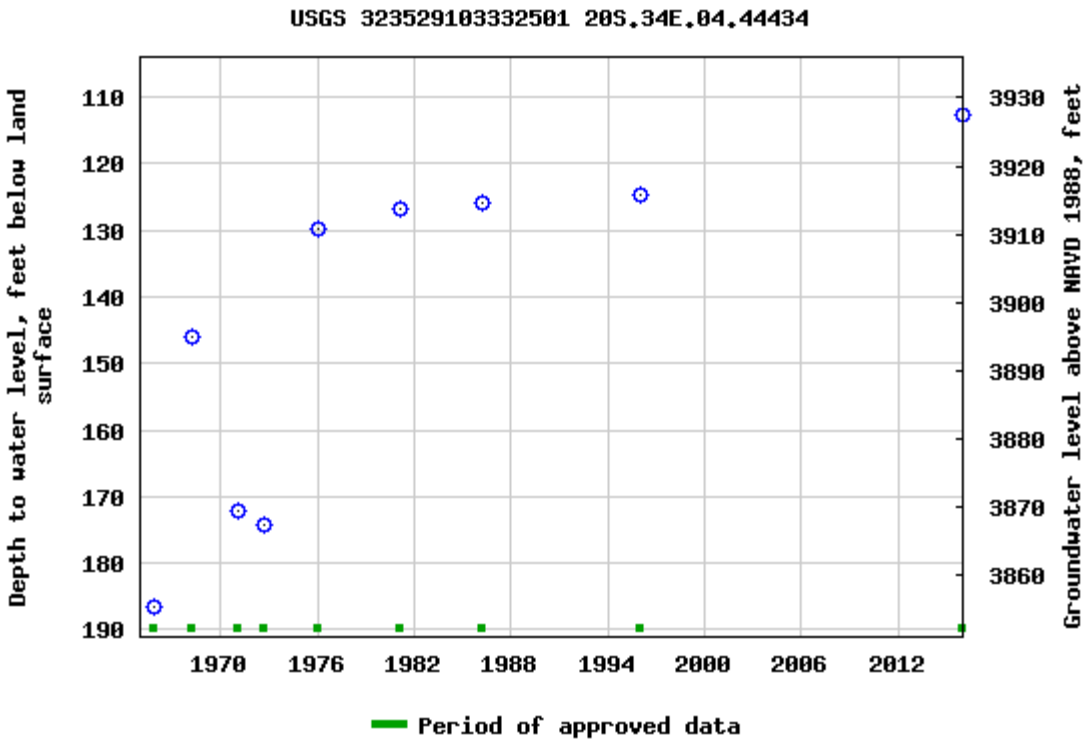
USGS 323529103332501 20S.34E.04.44434

Available data for this site Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°45'44.9", Longitude 103°33'27.8" NAD83
Land-surface elevation 4,041 feet above NAVD88
The depth of the well is 200 feet below land surface.
This well is completed in the Chinle Formation (231CHNL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Title: Groundwater for New Mexico: Water Levels
URL: https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?

Page Contact Information: New Mexico Water Data Maintainer
Page Last Modified: 2018-03-12 12:59:57 EDT
1.13 0.99 nadww01

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Operator: CIMAREX ENERGY CO. OF COLORADO 600 N. Marienfeld Street Midland, TX 79701	OGRID: 162683
	Action Number: 4545
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
kcollins	None	6/23/2021