ConocoPhillips

Ike Tavarez
ConocoPhillips
600 W. Illinois Avenue
Midland, TX 79701
+1-432-701-8630

October 28, 2022

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Subject: **SRO State Com #018H Flowline Release**
Unit Letter A, Section 17, Township 26 South, Range 28 East
Eddy County, New Mexico
INCIDENT ID nAB1730649817
2RP-4468

Sir or Madam:

ConocoPhillips Company("COPC") entered into an Agreed Compliance Order ("ACO") with the New Mexico Oil Conservation Division ("NMOCD") on December 15, 2021, related to unresolved releases from COPC's predecessor-in-interest ("COG"). The ACO required COPC to submit characterization and/or remediation plans with proposed timeframes for the ongoing corrective actions or remediations identified to the NMOCD no later than March 31, 2022. As of March 11, 2022, COPC has submitted characterization and remediation plans for all of the properties identified and owned. All documentation was submitted in accordance with ACO terms. These documents have been submitted to the NMOCD via CentreStack, a Secure Access & File Sharing platform, at the direction of Mr. Bradford Billings, NMOCD.

Enclosed is a copy of the Work Plan for the subject line incident. This Work Plan has been previously submitted in its entirety via the CentreStack platform. It is now duly submitted separately via the NMOCD Fee Application portal.

This incident footprint is located adjacent to another COG release footprint (ID nAB1719137895). The Work Plan for the 2RP-4288 (ID nAB1719137895) release has been previously submitted to NMOCD and approved by OCD under separate cover, on October 3, 2017. As the two footprints are adjacent, COPC requests that NMOCD expedite their review of this Work Plan and allow the opportunity to remediate both release extents concurrently with the approval of this Work Plan.

If you have any questions, please contact me at 432-701-8630.

Sincerely,

Ike Tavarez, P.G.
Program Manager – RMR

cc: Site Files

Attachments: Work Plan, SRO State Com #018H Release, 2RP-4468

SITE INFORMATION

Report Type: Work Plan 2RP-4468

General Site Information:						
Site:	SRO State Com #018H					
Company:	COG Operating LLC					
Section, Township and Range	Unit A	Sec. 17	T 26S	R 28E		
Lease Number:	API No. 30-015-39999					
County:	Eddy County					
GPS:	32.004957			104.10095		
Surface Owner:	State					
Mineral Owner:	State					
Directions:	West of Mile marker 5 off 285 two miles, turn left just before the third cattle guard, go 3/4 mile take first right, op. 1/4 mile to trunk line crossing to battery take road to north tin horn at leak					

Release Data:	
Date Released:	10/27/2017
Type Release:	Produced Water
Source of Contamination:	Flowline
Fluid Released:	20 bbl water
Fluids Recovered:	0 bbls water

Official Communication:			
Name:	Sheldon Hitchcock		Clair Gonzales
Company:	COG Operating, LLC		Tetra Tech
Address:	2407 Pecos Ave.		901 West Wall Street
			Suite 100
City:	Artesia, NM 88210		Midland, Texas
Phone number:	(575) 746-2010		(432) 687-8110
Fax:			
Email:	shitchcock@conchoresources.com		Clair.Gonzales@tetratech.com

Site Characterization	
Depth to Groundwater:	*Less than 50' below surface*
Karst Potential:	*Medium*

Recommended Remedial Action Levels (RRALs)				
Benzene	*Total BTEX*	*TPH (GRO+DRO)*	*TPH (GRO+DRO+MRO)*	*Chlorides*
10 mg/kg	*50 mg/kg*	*100 mg/kg*	*100 mg/kg*	*600 mg/kg*

TETRA TECH

November 8, 2018

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
1301 West Grand Avenue
Artesia, New Mexico 88210

Re: Work Plan for the COG Operating LLC., SRO State Unit Com #0018, Unit A, Section 17, Township 26 South, Range 28 East, Eddy County, New Mexico. (2RP-4468)

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a release at the SRO State Unit Com #0018, Unit A, Section 17, Township 26 South, Range 28 East, Eddy County, New Mexico. (Site). The spill site coordinates are N 32.04957º, W 104.10095 º. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico Oil Conservation Division Form C-141 Initial Report, the leak was discovered on October 27, 2017, and released approximately 20 barrels of produced water due to a hole in the poly flowline. None of the produced water was recovered. The release occurred in the pasture along a pipeline right- of-way and measured approximately 160' x 30'. The initial Form C-141 is enclosed in Appendix A.

Groundwater

According to the New Mexico Office of the State Engineer (NMOSE) database, no water wells are listed in Section 17. The closest water well listed on the NMOSE is reported in Section 14, with a groundwater depth of 120'. However, the USGS National Water Information System lists a well in Section 18 .55 miles Southwest of the site with a reported depth to groundwater of 16.35 feet below surface. According to the Chevron Texaco Depth to Groundwater Trend map, the depth to groundwater in the area shows to be less than 50' below surface. The groundwater data is shown in Appendix B.

Tetra Tech
901 West Wall St., Midland, TX 79701
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

TETRA TECH

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. 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 high karst area, the proposed RRAL for TPH is 100 mg/kg (GRO + DRO + ORO). Additionally, based on the reported depth to groundwater in the area, the proposed RRAL for chlorides is 600 mg/kg.

Soil Assessment

On February 13, 2018, Tetra Tech personnel were on-site to inspect and sample the spill area. Three (3) auger holes (AH-1, AH-2, and AH-3) were installed 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. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix D.

Referring to Table 1, all of the samples analyzed showed benzene, total BTEX, and TPH concentrations below the RRAL's. The area of auger hole (AH-2) showed a chloride concentration of 172 mg/kg at 0-1.0' below surface and 190 mg/kg at 1.0-1.5' below surface. However, elevated chloride concentrations were detected in the areas of auger holes (AH-1 and AH-3), with chloride highs of 1,780 mg/kg and 4,080 mg/kg at 0-1.0' below surface, respectively. The chloride concentrations then declined with depth and showed bottom hole concentrations of 1,530 mg/kg at 1.0-1.5' (AH-1) and 651 mg/kg at 1.5'-2.0' (AH-3) and the areas were not vertically defined.

Work Plan

COG will return to the site to vertically define the areas of auger holes (AH-1 and AH-3) using a backhoe. Once the laboratory data is completed, the results will be provided to the NMOCD and NMSLO for review. However, once approved, COG proposes to begin excavation activities in these areas to the appropriate depths. Once completed, the excavated areas will then be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal. Approximately 240-300 cubic yards will be excavated depending on the vertical extent of the spill and will be completed within ninety (90) days of the work plan being approved.

TETRA TECH

Sampling Plan

COG will collect five-point composite confirmation samples every 200 square feet in order to ensure proper removal of the impacted areas. The proposed excavation depths may not be reached due to wall cave-ins and safety concerns for onsite personnel. Also, impacted soil around oil and gas equipment, structures or lines may not be viable or practicable to be removed due to safely concerns for on-site personnel. As such, COG will excavate the impacted soils to the maximum extent practicable.

Restoration/Reclamation

The backfilled areas will be seeded June 2019 in order to coincide with the rainy season in New Mexico to aid in revegetation. Based on the soils at the site, the Loamy (L) NMSLO seed mixture seed will be selected and the appropriate pounds pure live seed per acre will be used. The seed mixture will be spread by a drill equipped with a depth regulator or a hand-held broadcaster and raked. If a hand-held broadcaster is used for dispersal, the pounds pure live seed per acre will be doubled. Site inspections will be performed to assess the revegetation progress and evaluate the site for the presence of primary or secondary noxious weeds. If noxious weeds are identified, the NMSLO will be contacted to determine an effective method for eradication. If the site does not show revegetation after one growing season, the area will be reseeded as appropriate. The NMSLO seed mixture details and corresponding pounds pure live seed per acre are included in Appendix C.

A work plan dated November 27, 2017 for a release 2RP-4288 adjacent to this spill has been submitted and approved. The remediation activities for 2RP-4288 and 2RP-4468 will be performed concurrently.

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

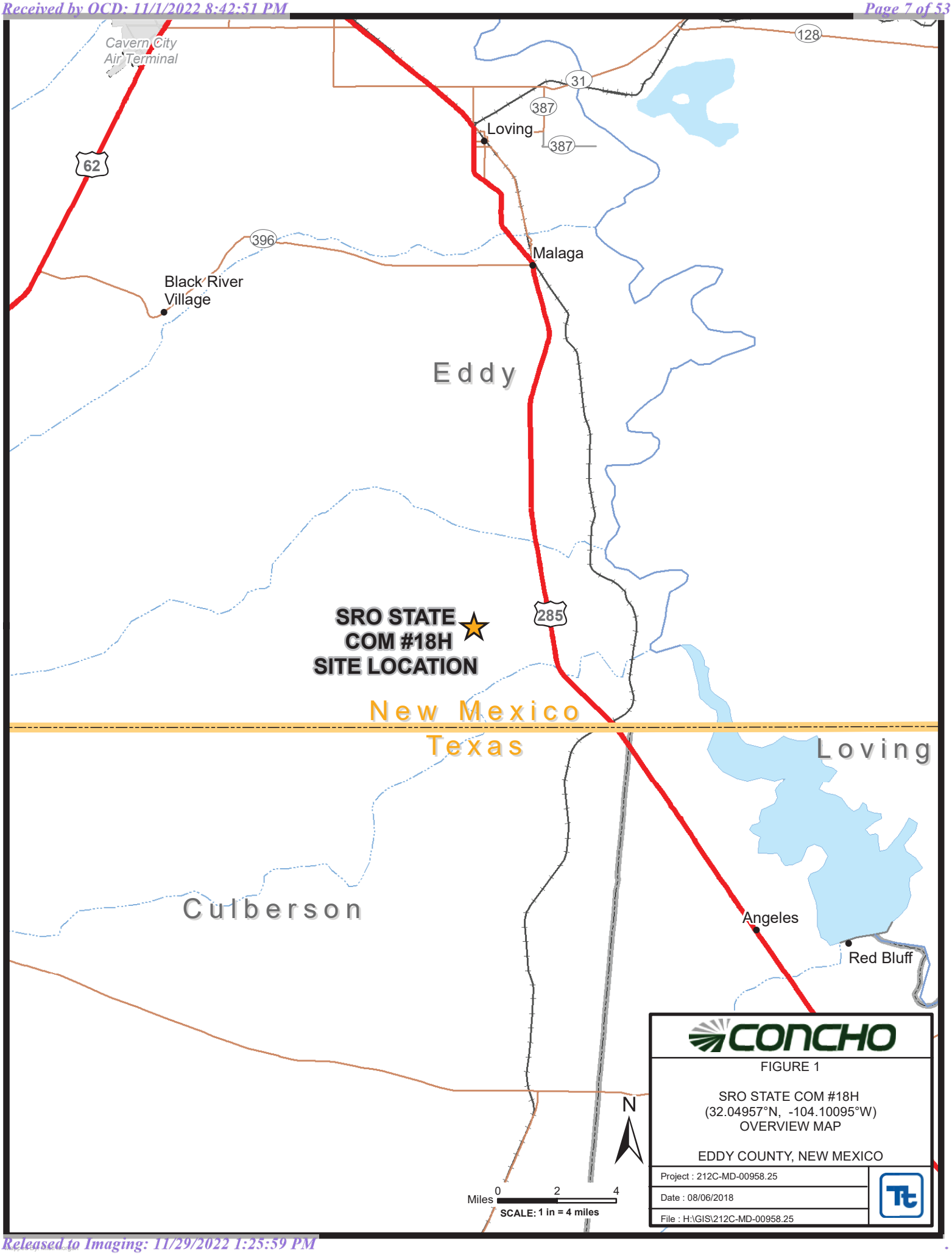
Respectfully submitted,
TETRA TECH

Clair Gonzales,
Project Manager

Mike Carmona,
Geologist

cc Rebecca Haskell – COG
Ike Tavarez – COG
Deann Grant - COG
Dakota Neel - COG
Ryan Mann – SLO
Maria Pruett- NMOCD

Figures



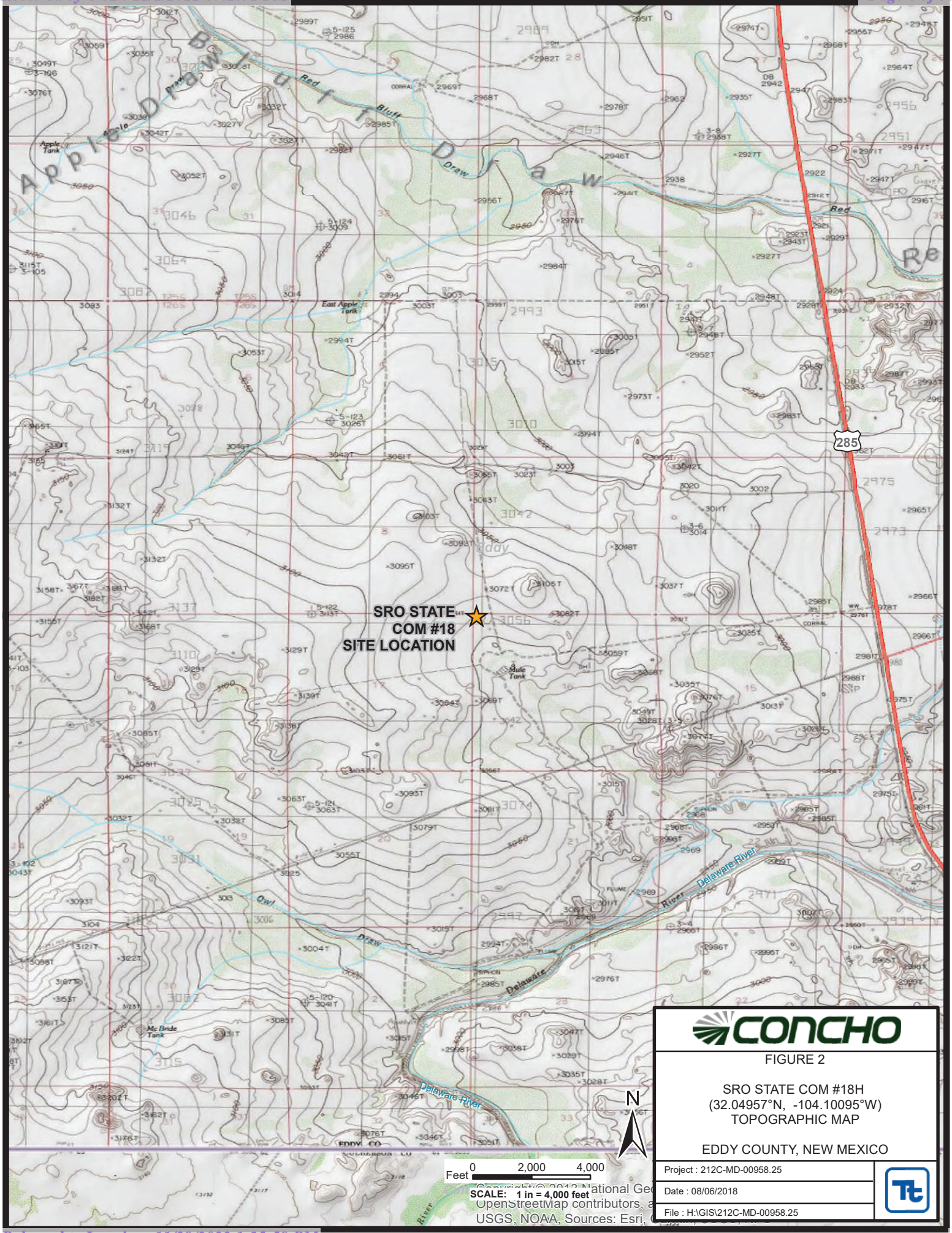
CONCHO

FIGURE 1

SRO STATE COM #18H
(32.04957°N, -104.10095°W)
OVERVIEW MAP

EDDY COUNTY, NEW MEXICO

Project : 212C-MD-00958.25	
Date : 08/06/2018	
File : H:\GIS\212C-MD-00958.25	



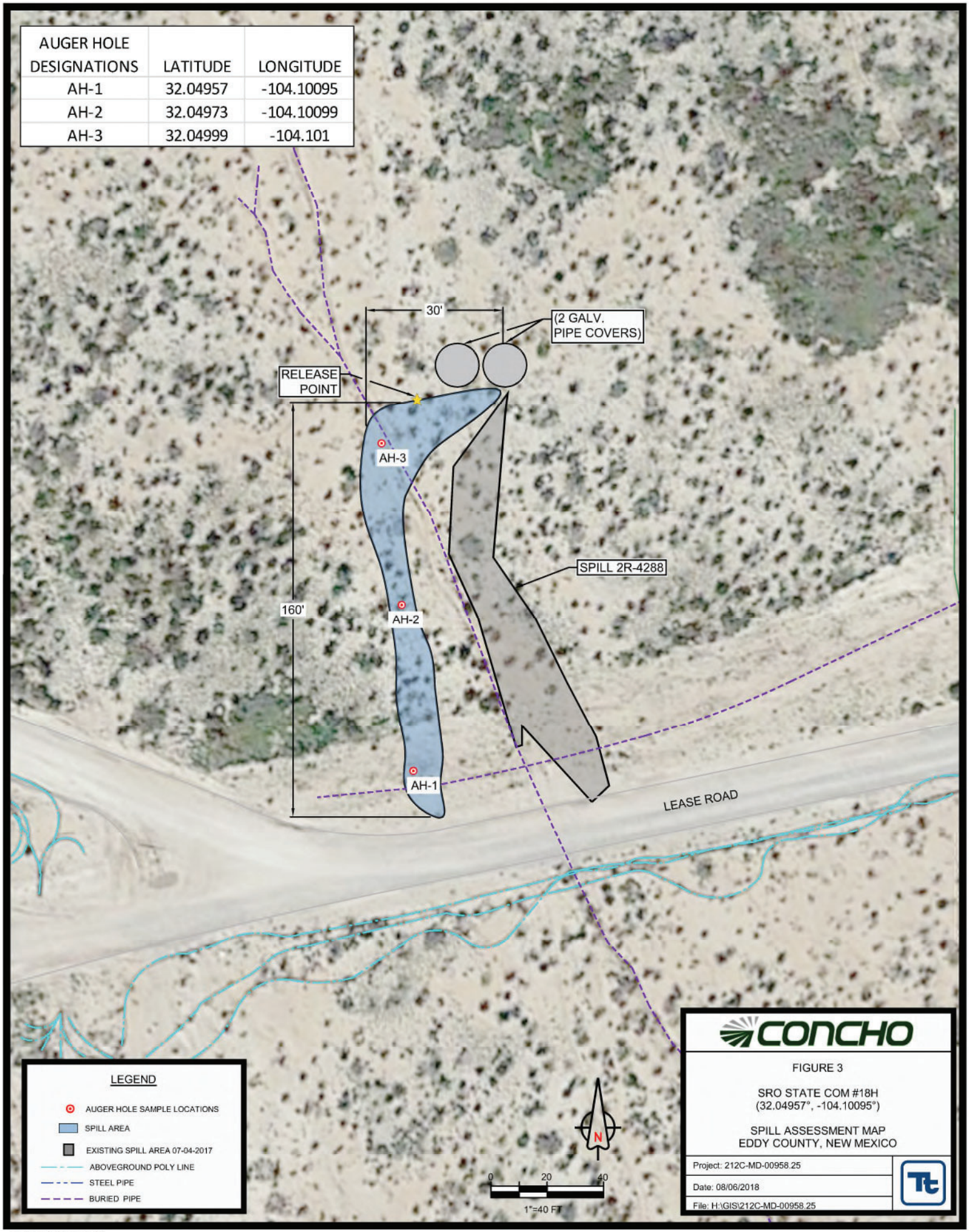
CONCHO

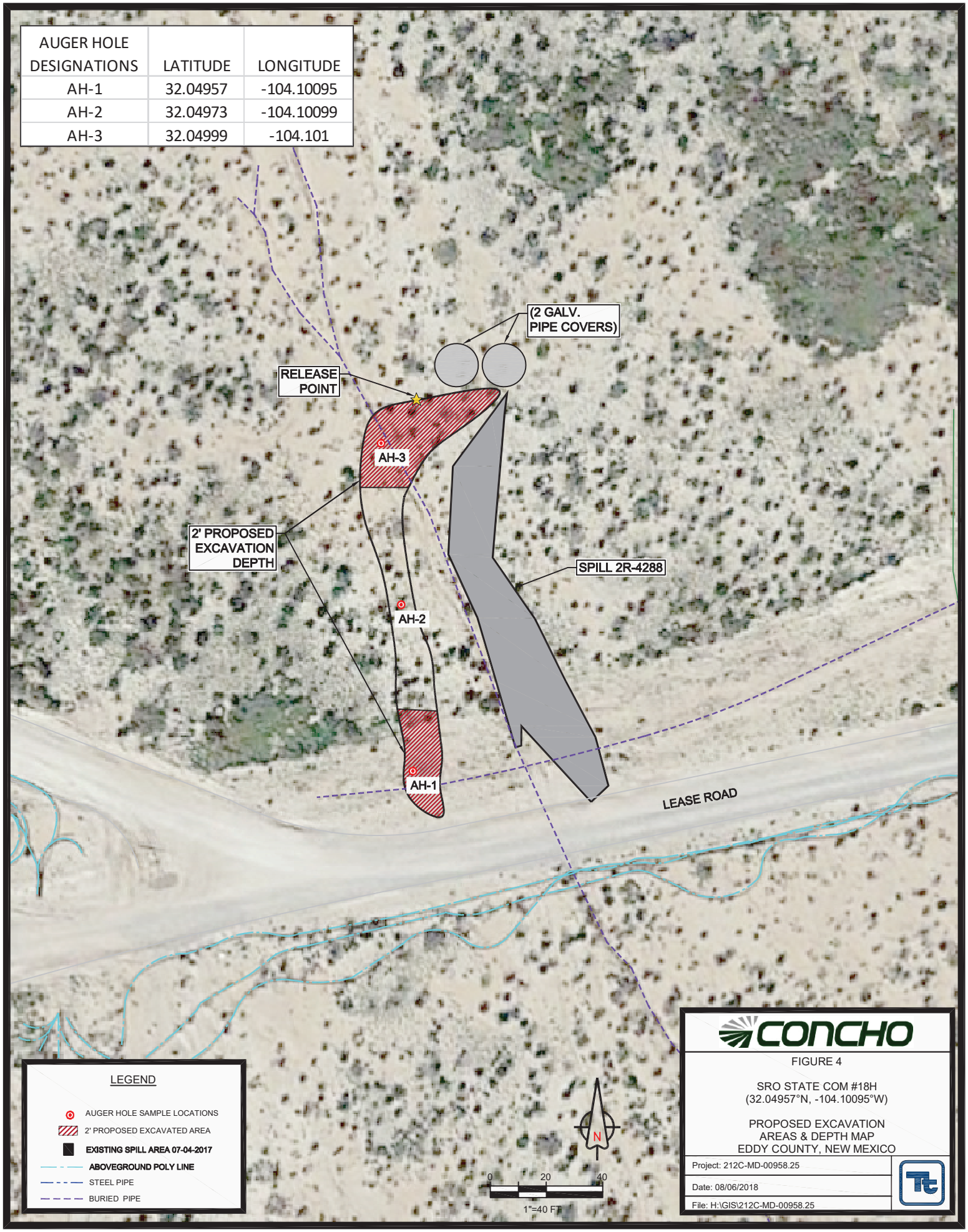
FIGURE 2

SRO STATE COM #18H
(32.04957°N, -104.10095°W)
TOPOGRAPHIC MAP

EDDY COUNTY, NEW MEXICO

Project : 212C-MD-00958.25	
Date : 08/06/2018	
File : H:\GIS\212C-MD-00958.25	


AUGER HOLE DESIGNATIONS | LATITUDE | LONGITUDE
AH-1 | 32.04957 | -104.10095
AH-2 | 32.04973 | -104.10099
AH-3 | 32.04999 | -104.101
30'
(2 GALV. PIPE COVERS)
RELEASE POINT
AH-3
AH-2
AH-1
160'
SPILL 2R-4288
LEASE ROAD
LEGEND
AUGER HOLE SAMPLE LOCATIONS
SPILL AREA
EXISTING SPILL AREA 07-04-2017
ABOVEGROUND POLY LINE
STEEL PIPE
BURIED PIPE
N
0 20 40
1"=40 FT
CONCHO
FIGURE 3
SRO STATE COM #18H
(32.04957°, -104.10095°)
SPILL ASSESSMENT MAP
EDDY COUNTY, NEW MEXICO
Project: 212C-MD-00958.25
Date: 08/06/2018
File: H:\GIS\212C-MD-00958.25
Drawn By: MISTI MORGAN


AUGER HOLE DESIGNATIONS
LATITUDE
LONGITUDE
AH-1
32.04957
-104.10095
AH-2
32.04973
-104.10099
AH-3
32.04999
-104.101
(2 GALV. PIPE COVERS)
RELEASE POINT
AH-3
2' PROPOSED EXCAVATION DEPTH
SPILL 2R-4288
AH-2
AH-1
LEASE ROAD
LEGEND
AUGER HOLE SAMPLE LOCATIONS
2' PROPOSED EXCAVATED AREA
EXISTING SPILL AREA 07-04-2017
ABOVEGROUND POLY LINE
STEEL PIPE
BURIED PIPE
N
0
20
40
1"=40 FT
CONCHO
FIGURE 4
SRO STATE COM #18H
(32.04957°N, -104.10095°W)
PROPOSED EXCAVATION AREAS & DEPTH MAP
EDDY COUNTY, NEW MEXICO
Project: 212C-MD-00958.25
Date: 08/06/2018
File: H:\GIS\212C-MD-00958.25

Tables

Table 1
COG Operating LLC.
SRO State Com #18H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	2/13/2018	0-1	X		<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	**1,780**
	"	1-1.5	X		-	-	-	-	-	-	-	-	**1,530**
AH-2	2/13/2018	0-1	X		<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	172
	"	1-1.5	X		-	-	-	-	-	-	-	-	190
AH-3	2/13/2018	0-1	X		<15.0	62.8	62.8	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**4,080**
	"	1-1.5	X		-	-	-	-	-	-	-	-	**767**
	"	1.5-2.0	X		-	-	-	-	-	-	-	-	**651**

(-) Not Analyzed
Proposed Excavation

Photos

COG Operating LLC
SRO State 18H
Eddy County, New Mexico

TETRA TECH

View North – Area of AH-1, AH-2, and AH-3

View North – Area of AH-2

COG Operating LLC
SRO State 18H
Eddy County, New Mexico

TETRA TECH

View South – Area of AH-3

View South – Area of AH-3, AH-2, and AH-1

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 April 3, 2017

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: **COG Operating LLC** (OGRID #229137)	Contact: **Robert McNeill**
Address: **600 West Illinois Avenue, Midland TX 79701**	Telephone No. **432-683-7443**
Facility Name: SRO State Com #018H	Facility Type: Tank Battery

Surface Owner: State	Mineral Owner: State	API No. 30-015-39999

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	17	26S	28E	330	North	330	East	Eddy

Latitude: 32.049943 **Longitude:**-104.100937 NAD83

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 20bbls	Volume Recovered: 0bbls
Source of Release: Flowline	Date and Hour of Occurrence: 10/27/2017	Date and Hour of Discovery 10/27/2017 2:35pm
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.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

This released was caused by a hole in the poly flowline before the valve at the trunk line header. The flowline was inspected and repaired.

Describe Area Affected and Cleanup Action Taken.*

The release occurred in the pasture at the connection point of the main trunk line ROW. A vacuum truck was dispatched to remove any freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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:

Printed Name: Aaron Lieb

Title: Senior HSE Coordinator

E-mail Address: alieb@concho.com

Date: 11-02-2017 Phone: 575-748-1553

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: Expiration Date:

Conditions of Approval: Attached ☐

* Attach Additional Sheets If Necessary

State of New Mexico
Oil Conservation Division

Incident ID	2RP-4468
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	16.5 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☐ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☐ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☐ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☐ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☐ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☐ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☐ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☐ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☑ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☑ Data table of soil contaminant concentration data
- ☑ Depth to water determination
- ☑ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☑ Photographs including date and GIS information
- ☑ Topographic/Aerial maps
- ☑ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	2RP-4468
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature: Date: 11/8/2018

email: itavarez@concho.com Telephone: (432) 685-2573

OCD Only

Received by: Jocelyn Harimon Date: 11/02/2022

State of New Mexico
Oil Conservation Division

Incident ID	2RP-4468
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☑ Detailed description of proposed remediation technique
- ☑ Scaled sitemap with GPS coordinates showing delineation points
- ☑ Estimated volume of material to be remediated
- ☑ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☑ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature:  Date: 11/8/2018

email: itavarez@concho.com Telephone: (432) 685-2573

OCD Only

Received by: Jocelyn Harimon Date: 11/02/2022

☐ Approved ☑ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature:  Date: 11/29/2022

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
SRO State Com #018H
Eddy County, New Mexico

25 South 27 East

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

25 South 28 East

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

25 South 29 East

6 40	5	4	3	2	1
7	8	9	10 40	11	12
18	17	16	15 60	14	13
19	20	21	22	23	24
30 30	29	28	27	26	25
31	32 115	33	34	35	36

26 South 27 East

6	5 12	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 35
19	20	21	22 50	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 28 East

6	5	4	3	2 120 21	1
7	8	9	10	11	12 100
18 16.35	17 Site	16	15	14 92 120	13 56 58
19	20	21	22 22 120	23	24
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	16 125	15	14	13
19	20	21	22 57 69	23	24
30	29	28	27	26	25
31	32	33	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	POD Sub-Code basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 01668		ED		3	3	12	26S	28E	589957	3546554*	250	100	150
C 02160		ED	4	1	2	14	26S	28E	589243	3546044*	300	120	180
C 02160 S		ED	1	1	2	14	26S	28E	589043	3546244*	300	120	180
C 02160 S2		ED	1	1	2	14	26S	28E	589043	3546244*	300	120	180
C 02160 S3		ED	2	2	1	14	26S	28E	588834	3546241*	300	120	180
C 02160 S4		ED	2	2	1	14	26S	28E	588834	3546241*	300	120	180
C 02160 S5		ED	1	1	1	14	26S	28E	588225	3546237*	300	120	180
C 02160 S6		ED	3	3	1	14	26S	28E	588232	3545635*	300	120	180
C 02160 S7		ED	3	3	1	22	26S	28E	586638	3543998*	300	120	180
C 02160 S8		ED	2	3	3	12	26S	28E	590056	3546653*	200	120	80
C 02160 S9		ED	3	3	2	02	26S	28E	589020	3548868*	300	120	180
C 02477	CUB	ED		1	1	03	26S	28E	586687	3549347*	150		
C 02478	CUB	ED		2	1	05	26S	28E	583848	3549325*	100		
C 02479	CUB	ED		4	4	10	26S	28E	587909	3546534*	200		
C 02480	CUB	ED		4	4	10	26S	28E	587909	3546534*	150		
C 02481	CUB	ED		1	1	14	26S	28E	588326	3546138*	200		
C 02894	C	ED	2	2	3	12	26S	28E	590458	3547061*	240		
C 02924	C	ED	1	3	2	11	26S	28E	589032	3547451*			
C 04022 POD1	CUB	ED	4	4	2	15	26S	28E	588082	3545647	220	175	45
C 04022 POD2	CUB	ED	2	2	2	27	26S	28E	588106	3543082	250	145	105

***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 =

- 320230104060601

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

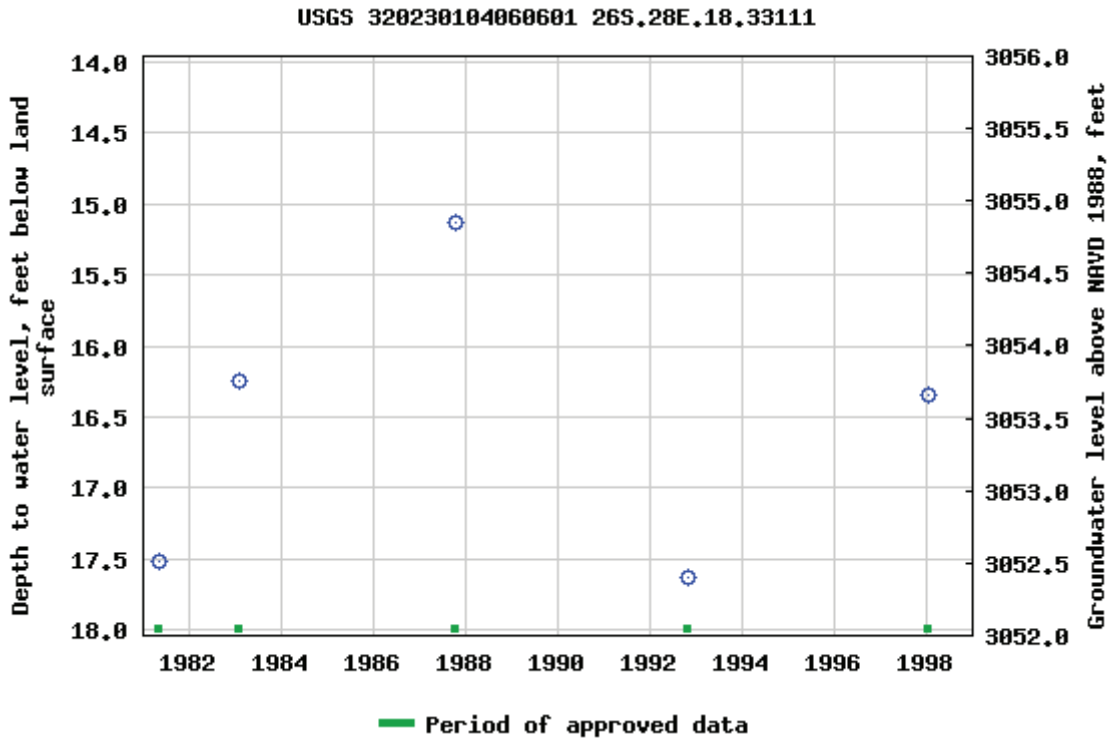
USGS 320230104060601 26S.28E.18.33111

Available data for this site Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code --
Latitude 32°02'30", Longitude 104°06'06" NAD27
Land-surface elevation 3,070 feet above NAVD88
This well is completed in the Castile Formation (312CSTL) 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

Accessibility Plug-Ins FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

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: 2018-08-16 11:00:05 EDT
1.9 1.25 nadww01

Click to hide News Bulletins

- Please see news on new formats
- **UPDATE, 11/2: The USGS continues to make progress on restoring all of its gages. As of 3 p.m. Friday, November 2, less than 3 percent of USGS streamgages are still not transmitting due to an issue with the telemetry system that records and transmits streamgage data. The USGS will continue to work through the weekend to bring the streamgages back online. Read more**
- Full News

Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 320230104060601

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 320230104060601 26S.28E.18.33111

Eddy County, New Mexico
Latitude 32°02'30", Longitude 104°06'06" NAD27
Land-surface elevation 3,070 feet above NAVD88
This well is completed in the Castile Formation (312CSTL) local aquifer.

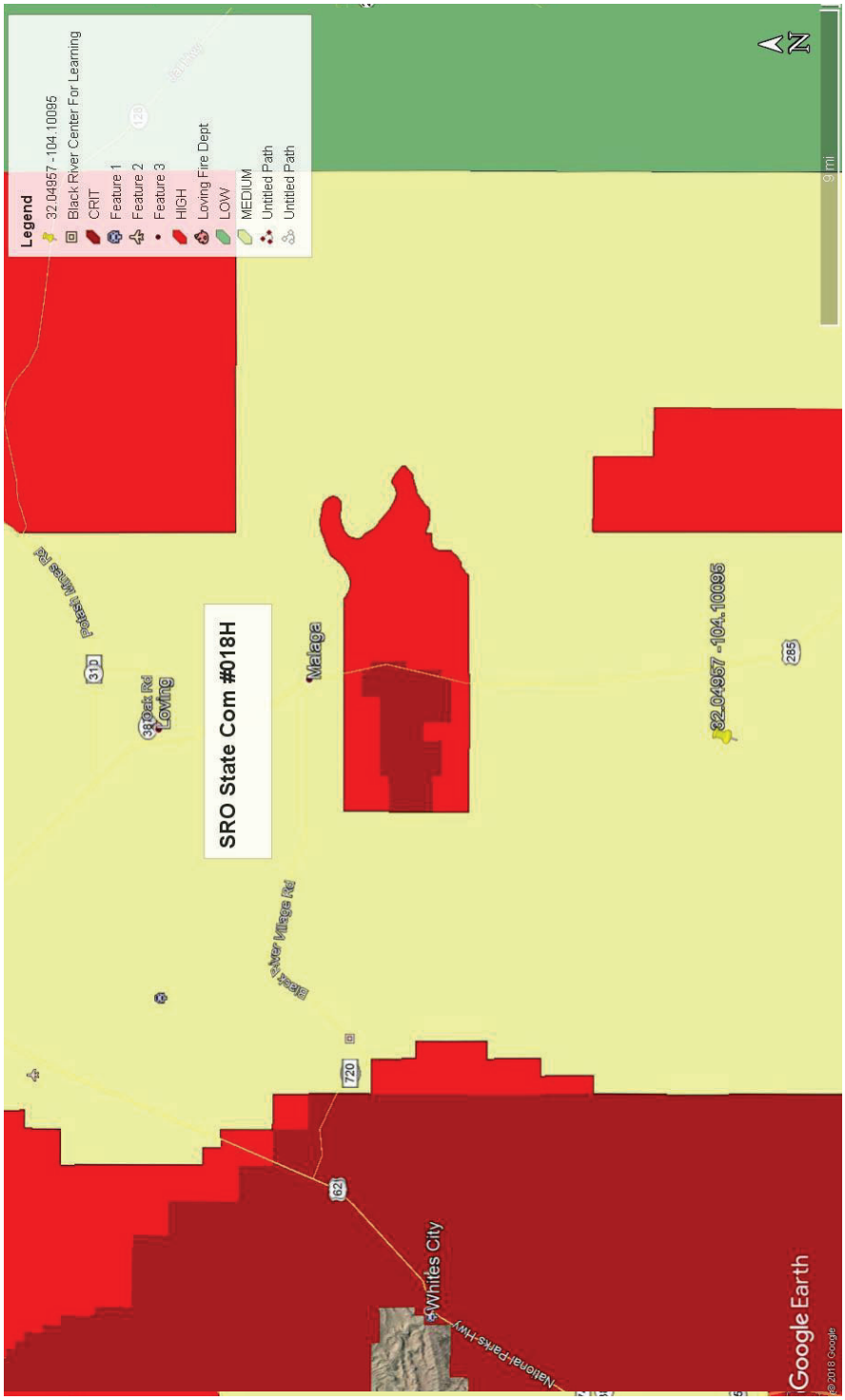
Output formats

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

Date	Time	Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	Water-level accuracy	Status	Method of measurement	Measuring agency	Source of measurement	Water-level approval status
1981-05-01		D	17.52			2		U		U	A
1983-01-25		D	16.25			2		U		U	A
1987-10-13		D	15.13			2		U		U	A
1992-11-03		D	17.63			2		S		U	A
1998-01-22		D	16.35			2		S		U	A

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

Questions about sites/data? Data Tips


Legend
32.04957 -104.10095
Black River Center For Learning
CRIT
Feature 1
Feature 2
Feature 3
HIGH
Loving Fire Dept
LOW
MEDIUM
Untitled Path
Untitled Path
N
SRO State Com #018H
Malaga
Loving
Dark Rd
Pecos Maroon Rd
Black River Village Rd
32.04957 -104.10096
285
310
720
62
White City
National-Parks-Hwy
Google Earth

New Mexico NFHL Data

November 5, 2018

1:4,514

0 0.0375 0.075 0.15 mi

0 0.05 0.1 0.2 km

FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

Appendix C

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Eddy Area, New Mexico

RE—Reagan-Upton association, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: 1w5d
Elevation: 1,100 to 5,400 feet
Mean annual precipitation: 6 to 14 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 180 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Reagan and similar soils: 70 percent
Upton and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reagan

Setting

Landform: Alluvial fans, fan remnants
Landform position (three-dimensional): Rise
Down-slope shape: Linear, convex
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 60 inches: loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: Loamy (R070DY153NM)
Hydric soil rating: No

Description of Upton

Setting

Landform: Ridges, fans
Landform position (three-dimensional): Side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from limestone

Typical profile

H1 - 0 to 9 inches: gravelly loam
H2 - 9 to 13 inches: gravelly loam
H3 - 13 to 21 inches: cemented
H4 - 21 to 60 inches: very gravelly loam

Properties and qualities

Slope: 0 to 9 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 75 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Shallow Loamy (R070DY159NM)
Hydric soil rating: No

Minor Components

Pima

Percent of map unit:
Ecological site: Bottomland (R042XC017NM)
Hydric soil rating: No

Atoka

Percent of map unit:
Ecological site: Loamy (R042XC007NM)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 14, Sep 12, 2018

NMSLO Seed Mix Loamy (L)

LOAMY (L) SITES SEED MIXTURE:

COMMON NAME	VARIETY	APPLICATION RATE (PLS/Acre)	DRILL BOX
Grasses:			
Black grama	VNS, Southern	1.0	D
Blue grama	Lovington	1.0	D
Sideoats grama	Vaughn, El Reno	4.0	F
Sand dropseed	VNS, Southern	2.0	S
Alkali sacaton	VNS, Southern	1.0	
Little bluestem	Cimarron, Pastura	1.5	F
Forbs:			
Firewheel (*Gaillardia*)	VNS, Southern	1.0	D
Shrubs:			
Fourwing saltbush	Marana, Santa Rita	1.0	D
Common winterfat	VNS, Southern	0.5	F
	Total PLS/acre	18.0	

S = Small seed drill box, D = Standard seed drill box, F = Fluffy seed drill box
VNS = Variety Not Stated, PLS = Pure Live Seed

- Seed mixes should be provided in bags separating seed types into the three categories: small (S), standard (D) and fluffy (F).
- VNS, Southern – Seed should be from a southern latitude collection of this species.
- Double seed application rate for broadcast or hydroseeding.
- If one species is not available, contact the SLO for an approved substitute; alternatively the SLO may require other species proportionately increased.
- Additional information on these seed species can be found on the USDA Plants Database website at http://plants.usda.gov.

Appendix D

Analytical Report 576512

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

COG-SRO State Com #18H

212C-MD-00958

22-FEB-18

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)

22-FEB-18

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

Reference: XENCO Report No(s): **576512**
COG-SRO State Com #18H
Project Address:

Ike Tavarez:

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) 576512. 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. 576512 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 576512

Tetra Tech- Midland, Midland, TX

COG-SRO State Com #18H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH 1 (0-1)	S	02-13-18 00:00		576512-001
AH 1 (1-1.5)	S	02-13-18 00:00		576512-002
AH 2 (0-1)	S	02-13-18 00:00		576512-003
AH 2 (1-1.5)	S	02-13-18 00:00		576512-004
AH 3 (0-1)	S	02-13-18 00:00		576512-005
AH 3 (1-1.5)	S	02-13-18 00:00		576512-006
AH 3 (1.5-2)	S	02-13-18 00:00		576512-007

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: COG-SRO State Com #18H

Project ID: *212C-MD-00958*
Work Order Number(s): *576512*

Report Date: *22-FEB-18*
Date Received: *02/14/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3041711 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3041796 Inorganic Anions by EPA 300/300.1
Lab Sample ID 576512-001 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: 576512-001, -002, -003, -004, -005, -006, -007.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 576512

Tetra Tech- Midland, Midland, TX

Project Name: COG-SRO State Com #18H

Project Id: 212C-MD-00958
Contact: Ike Tavarez
Project Location:

Date Received in Lab: Wed Feb-14-18 04:42 pm
Report Date: 22-FEB-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	576512-001		576512-002		576512-003		576512-004		576512-005		576512-006	
	Field Id:	AH 1 (0-1)		AH 1 (1-1.5)		AH 2 (0-1)		AH 2 (1-1.5)		AH 3 (0-1)		AH 3 (1-1.5)	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-13-18 00:00		Feb-13-18 00:00		Feb-13-18 00:00		Feb-13-18 00:00		Feb-13-18 00:00		Feb-13-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Feb-16-18 10:00				Feb-16-18 10:00				Feb-16-18 10:00			
	Analyzed:	Feb-17-18 19:39				Feb-17-18 19:58				Feb-17-18 20:16			
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL		
Benzene		<0.00201	0.00201			<0.00199	0.00199			<0.00200	0.00200		
Toluene		<0.00201	0.00201			<0.00199	0.00199			<0.00200	0.00200		
Ethylbenzene		<0.00201	0.00201			<0.00199	0.00199			<0.00200	0.00200		
m,p-Xylenes		<0.00402	0.00402			<0.00398	0.00398			<0.00399	0.00399		
o-Xylene		<0.00201	0.00201			<0.00199	0.00199			<0.00200	0.00200		
Total Xylenes		<0.00201	0.00201			<0.00199	0.00199			<0.00200	0.00200		
Total BTEX		<0.00201	0.00201			<0.00199	0.00199			<0.00200	0.00200		
Inorganic Anions by EPA 300/300.1	***Extracted:***	Feb-21-18 14:00		Feb-21-18 14:00		Feb-21-18 14:00		Feb-21-18 14:00		Feb-21-18 14:00		Feb-21-18 14:00	
	Analyzed:	Feb-22-18 03:51		Feb-22-18 04:06		Feb-22-18 04:13		Feb-22-18 04:35		Feb-22-18 04:43		Feb-22-18 04:50	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1780	24.3	1530	24.4	172	25.0	190	24.9	4080	98.0	767	24.8
TPH By SW8015 Mod	***Extracted:***	Feb-18-18 11:00				Feb-18-18 11:00				Feb-18-18 11:00			
	Analyzed:	Feb-18-18 22:53				Feb-18-18 23:20				Feb-18-18 23:48			
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL		
Gasoline Range Hydrocarbons		<15.0	15.0			<15.0	15.0			<15.0	15.0		
Diesel Range Organics		<15.0	15.0			<15.0	15.0			62.8	15.0		

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

Kelsey Brooks
Project Manager

Final 1.000

Certificate of Analysis Summary 576512

Tetra Tech- Midland, Midland, TX

Project Name: COG-SRO State Com #18H

Project Id: 212C-MD-00958
Contact: Ike Tavarez
Project Location:

Date Received in Lab: Wed Feb-14-18 04:42 pm
Report Date: 22-FEB-18
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	576512-007					
	Field Id:	AH 3 (1.5-2)					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Feb-13-18 00:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Feb-21-18 14:00					
	Analyzed:	Feb-22-18 04:57					
	Units/RL:	mg/kg	RL				
Chloride		651	24.5				

Kelsey Brooks
Project Manager

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

Form 2 - Surrogate Recoveries

Project Name: COG-SRO State Com #18H

Work Orders : 576512,

Project ID: 212C-MD-00958

Lab Batch #: 3041711 **Sample:** 576512-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/17/18 19:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 3041711 **Sample:** 576512-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/17/18 19:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 3041711 **Sample:** 576512-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/17/18 20:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

Lab Batch #: 3041602 **Sample:** 576512-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/18/18 22:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.8	110	70-135	
o-Terphenyl	56.1	49.9	112	70-135	

Lab Batch #: 3041602 **Sample:** 576512-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/18/18 23:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.5	99.9	100	70-135	
o-Terphenyl	50.5	50.0	101	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-SRO State Com #18H

Work Orders : 576512,

Project ID: 212C-MD-00958

Lab Batch #: 3041602 **Sample:** 576512-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/18/18 23:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.7	109	70-135	
o-Terphenyl	56.6	49.9	113	70-135	

Lab Batch #: 3041711 **Sample:** 7639451-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/17/18 14:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 3041602 **Sample:** 7639462-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/18/18 12:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	58.8	50.0	118	70-135	

Lab Batch #: 3041711 **Sample:** 7639451-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/17/18 12:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0336	0.0300	112	80-120	

Lab Batch #: 3041602 **Sample:** 7639462-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/18/18 12:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	55.4	50.0	111	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-SRO State Com #18H

Work Orders : 576512, **Project ID:** 212C-MD-00958

Lab Batch #: 3041711 **Sample:** 7639451-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/17/18 12:53

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 3041602 **Sample:** 7639462-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/18/18 13:12

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	56.0	50.0	112	70-135	

Lab Batch #: 3041711 **Sample:** 576509-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/17/18 13:12

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 3041602 **Sample:** 576404-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/18/18 14:06

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	57.6	50.0	115	70-135	

Lab Batch #: 3041711 **Sample:** 576509-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/17/18 13:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: COG-SRO State Com #18H

Work Orders : 576512,

Project ID: 212C-MD-00958

Lab Batch #: 3041602 **Sample:** 576404-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/18/18 14:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.8	116	70-135	
o-Terphenyl	56.7	49.9	114	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: COG-SRO State Com #18H

Work Order #: 576512 **Project ID:** 212C-MD-00958

Analyst: ALJ **Date Prepared:** 02/16/2018 **Date Analyzed:** 02/17/2018

Lab Batch ID: 3041711 **Sample:** 7639451-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B 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
Benzene	<0.00202	0.101	0.0884	88	0.100	0.0915	92	3	70-130	35	
Toluene	<0.00202	0.101	0.0901	89	0.100	0.0914	91	1	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0939	93	0.100	0.0952	95	1	71-129	35	
m,p-Xylenes	<0.00403	0.202	0.183	91	0.200	0.186	93	2	70-135	35	
o-Xylene	<0.00202	0.101	0.0928	92	0.100	0.0943	94	2	71-133	35	

Analyst: AMB **Date Prepared:** 02/21/2018 **Date Analyzed:** 02/22/2018

Lab Batch ID: 3041796 **Sample:** 7639569-1-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	259	250	259	104	250	259	104	0	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

BS / BSD Recoveries

Project Name: COG-SRO State Com #18H

Work Order #: 576512 **Project ID:** 212C-MD-00958

Analyst: ARM **Date Prepared:** 02/18/2018 **Date Analyzed:** 02/18/2018

Lab Batch ID: 3041602 **Sample:** 7639462-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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
Gasoline Range Hydrocarbons	<15.0	1000	864	86	1000	882	88	2	70-135	35	
Diesel Range Organics	<15.0	1000	943	94	1000	965	97	2	70-135	35	

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 Recoveries

Project Name: COG-SRO State Com #18H

Work Order #: 576512

Lab Batch #: 3041796 **Project ID:** 212C-MD-00958

Date Analyzed: 02/22/2018 **Date Prepared:** 02/21/2018 **Analyst:** AMB

QC- Sample ID: 576508-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	23.9	248	291	108	90-110	

Lab Batch #: 3041796

Date Analyzed: 02/22/2018 **Date Prepared:** 02/21/2018 **Analyst:** AMB

QC- Sample ID: 576512-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1780	2430	2910	47	90-110	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: COG-SRO State Com #18H

Work Order # : 576512 **Project ID:** 212C-MD-00958

Lab Batch ID: 3041711 **QC- Sample ID:** 576509-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/17/2018 **Date Prepared:** 02/16/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B 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
Benzene	<0.00199	0.0996	0.0772	78	0.0998	0.0848	85	9	70-130	35	
Toluene	<0.00199	0.0996	0.0737	74	0.0998	0.0836	84	13	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.0748	75	0.0998	0.0848	85	13	71-129	35	
m,p-Xylenes	<0.00398	0.199	0.146	73	0.200	0.166	83	13	70-135	35	
o-Xylene	<0.00199	0.0996	0.0737	74	0.0998	0.0837	84	13	71-133	35	

Lab Batch ID: 3041602 **QC- Sample ID:** 576404-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/18/2018 **Date Prepared:** 02/18/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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
Gasoline Range Hydrocarbons	16.4	1000	876	86	998	866	85	1	70-135	35	
Diesel Range Organics	105	1000	1020	92	998	1010	91	1	70-135	35	

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

576512 Page 1 of 1

Tetra Tech, Inc.

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

Client Name: COG

Site Manager: Ike Tavarez

Project Name: SRO State Com #18H

Project Location: (county, state) Eddy County, Tx

Project #: 212c-MD-00958

Invoice to:

Receiving Laboratory: Xenco

Sampler Signature: Stanley Breeden

Comments: Run deeper Sample if Benzene exceed 10 mg/kg or 50 mg/kg Run deeper Sample if TPH exceeds. 100 mg/kg. total BTEX

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)	BTEX 8021B 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO) extended	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
	AH1 (0-1)	2-13-18			X			X	1		X		X												X				
	AH1 (1-1.5)				X			X	1																X				
	AH2 (0-1)				X			X	1		X		X												X				
	AH2 (1-1.5)				X			X	1																X				
	AH3 (0-1)				X			X	1		X		X												X				
	AH3 (1-1.5)				X			X	1																X				
	AH3 (1.5-2)				X			X	1																X				

Relinquished by: Stanley Breeden Date: 2-14-18 Time: 1642

Received by: Julian Martinez Date: 2.14.18 Time: 16:42

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

ORIGINAL COPY

Temp: 2.6 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.4

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB USE ONLY

Sample Temperature

REMARKS: Standard

RUSH: Same Day 24 hr 48 hr 72 hr

Rush Charges Authorized

Special Report Limits or TRRP Report

ND DELIVERED FEDEX UPS Tracking #:

Final 1.000

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 02/14/2018 04:42:00 PM

Work Order #: 576512

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 02/22/2018

Checklist reviewed by: Kelsey Brooks Date: 02/22/2018

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

Action 155452

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 155452
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	Remediation and closure must comply with 19.15.29.12 and 19.15.29.13 NMAC. Horizontal delineation will need to be completed during confirmation sampling. Confirmation samples of all side walls and bases must be representative of no more than 200 square feet.	11/29/2022