

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

JUL 20 2018

Form C-141  
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in  
DISTRICT II-ARTESIA with 19.15.29 NMOC.

## Release Notification and Corrective Action

**NAB 1821139914** **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: XTO Energy <b>5380</b>	Contact: Kyle Littrell
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No: 432-221-7331
Facility Name: Nash Unit #046H	Facility Type: Exploration and Production
Surface Owner: State	Mineral Owner: State
API No: 30-015-43081	

## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	18	23S	30E	700	North	1880	West	Eddy

Latitude 32.308233 Longitude -103.928018 NAD83

## NATURE OF RELEASE

Type of Release Oil and produced water	Volume of Release 101 bbl oil, 274 bbl produced water	Volume Recovered 82 bbl oil, 220 bbl produced water
Source of Release Flowline	Date and Hour of Occurrence 7/7/2018, AM	Date and Hour of Discovery 7/7/2018, 8:00 AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher (NMOCD), Ryan Mann (SLO)	
By Whom? Kyle Littrell	Date and Hour: 7/7/2018, 11:41 AM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.\*  
N/A

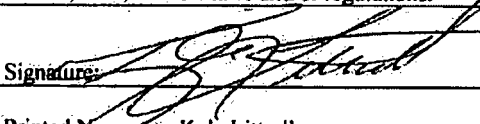
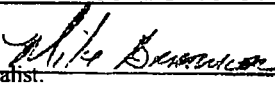
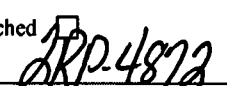
## Describe Cause of Problem and Remedial Action Taken.\*

Release was due to flex pipe flowline flexing and rubbing against a rock, wearing a hole in the side of the line. The line was secured and repaired.

## Describe Area Affected and Cleanup Action Taken.\*

Fluid flowed across the lease road into a caliche pit next to the road. Vacuum trucks were dispatched and recovered standing fluid. An environmental contractor has been retained to assist with delineation and remediation efforts.

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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Kyle Littrell	Signed By:  Approved by Environmental Specialist	
Title: Environmental Coordinator	Approval Date: 7/20/18	Expiration Date: N/A
E-mail Address: Kyle.Littrell@xtoenergy.com	Conditions of Approval: See attached	Attached: 
Date: 7/20/2018	Phone: 432-221-7331	

\* Attach Additional Sheets If Necessary

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

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	NAB1821139914
District RP	2RP-4872
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Garrett Green	Contact Telephone: 575-200-0729
Contact email: garrett.green@exxonmobil.com	Incident #: 2RP-4872
Contact mailing address: 3104 E. Greene Street, Carlsbad, New Mexico, 88220	

### Location of Release Source

Latitude 32.308233 Longitude 103.928018  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Nash Unit #046H	Site Type Exploration and Production
Date Release Discovered 7/7/2018	API# (if applicable) 30-015-43081

Unit Letter	Section	Township	Range	County
C	18	23S	30E	EDDY

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 101	Volume Recovered (bbls) 82
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 274	Volume Recovered (bbls) 220
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

Release was due to flex pipe flowline flexing and rubbing against a rock, wearing a hole in the side of the line. The line was secured and repaired.


Fluid flowed across the lease road into a caliche pit next to the road. Vacuum trucks were dispatched and recovered standing fluid. An environmental contractor was retained to assist with delineation and remediation efforts.

Incident ID	NAB1821139914
District RP	2RP-4872
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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release volume was greater than 25 bbls.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by Kyle Littrell (XTO) to Mike Bratcher (NMOCD) and Ryan Mann (SLO) on 7/7/2018 at 11:41 am.	

## Initial Response

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: NA	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
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: <u>Garrett Green</u>	Title: <u>SSHE Coordinator</u>
Signature: <u></u>	Date: <u>6/15/2023</u>
email: <u>garrett.green@exxonmobil.com</u>	Telephone: <u>575-200-0729</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

Incident ID	NAB1821139914
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## 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?	<u>      </u> <50 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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.

## Oil Conservation Division

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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: Garrett Green Title: SSHE Coordinator

Signature:  Date: 6/15/2023

email: garrett.green@exxonmobil.com Telephone: 575-200-0729

**OCD Only**

Received by: Jocelyn Harimon Date: 06/16/2023

Form C-141

State of New Mexico  
Oil Conservation Division

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## 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: Garrett GreenTitle: SSHE CoordinatorSignature: Date: 6-15-2023email: garrett.green@exxonmobil.comTelephone: 575-200-0729**OCD Only**Received by: Jocelyn HarimonDate: 06/16/2023

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

Signature: Date: 06/27/2023



June 15, 2023

New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**Re: Remediation Work Plan  
Nash Unit #046H  
Incident Number NAB1821139914  
Eddy County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared the following *Remediation Work Plan (Work Plan)* as a follow up to the *Closure Request* dated April 30, 2019. This *Work Plan* proposes to complete additional delineation activities at the Nash Unit #046H flow line release (Site) in response to the denial by the New Mexico Oil Conservation Division (NMOCD) of the April 30, 2019, *Closure Request*. In the denial, NMOCD indicated that the reclamation requirements applied to the release area adjacent to/beneath the active road at the Site. The following *Work Plan* proposes full lateral and vertical delineation of the impacted soil left in place adjacent to/beneath the active road.

#### **SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit C, Section 18, Township 23 South, Range 30 East, in Eddy County, New Mexico (32.308233°, -103.928018°) and is associated with oil and gas exploration and production operations on State Land managed by the New Mexico State Land Office (NMSLO).

On July 7, 2018, a release occurred at the Site due to a flex pipe flow line flexing and rubbing against a rock and wearing a hole in the side of the line. Approximately 101 barrels (bbls) of crude oil and 274 bbls of produced water were released. The released fluids flowed across a lease road and collected in a former caliche pit next to the road. A vacuum truck was dispatched to the Site and recovered approximately 82 bbls of crude oil and 220 bbls of produced water. XTO reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on July 20, 2018. The release was assigned Remediation Permit Number (RP) Number 2RP-4872 and Incident Number NAB1821139914.

The release was included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the NMOCD effective November 13, 2018. The purpose of the Compliance Agreement was to ensure that reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with 19.15.29 of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018.

#### **SITE CHARACTERIZATION AND CLOSURE CRITERIA**

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC).



XTO Energy, Inc  
Remediation Work Plan  
Nash Unit #046H

Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential Site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be less than 50 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well is New Mexico Office of the State Engineer (NMOSE) well C-04594, located approximately 770 feet northwest of the Site. The well was drilled to a depth of 34 feet during February 2022, and groundwater was encountered at a depth of 28 feet bgs. The well record is provided in Appendix A. All wells used for depth to groundwater determination are depicted on Figure 1.

The closest continuously flowing or significant watercourse to the Site is freshwater emergent wetland located approximately 0.22 miles north of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is underlain by unstable geology (high potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total Petroleum Hydrocarbons (TPH): 100 mg/kg
- Chloride: 600 mg/kg

## BACKGROUND

Between July 2018 and February 2019, delineation and excavation activities were conducted at the Site to address the impacted soil resulting from the July 7, 2018, crude oil and produced water release. Impacted soil was excavated to the extent possible; however, impacted soil was left in place adjacent to the active lease road in order to maintain the structural integrity of the road. Full vertical delineation of the impacted soil left in-place was restricted by a hard gypsum layer at approximately 12 feet bgs along the lease road. The delineation and excavation soil sample locations are presented on the attached Figure 2. The laboratory analytical results are summarized in Table 1. Additional details regarding the delineation and excavation activities can be referenced in the original *Closure Request*, submitted to NMOCD on April 30, 2019.

On March 16, 2023, NMOCD denied the *Closure Request* for the following reasons:

- *Deferral denied. Per 19.15.29.12 C. (3) The responsible party shall remediate the impacted surface area of a release not occurring on a lined, bermed or otherwise contained exploration, development, production or storage site to meet the standards of Table I of 19.15.29.12 NMAC or other applicable remediation standards and restore and reclaim the area pursuant to 19.15.29.13 NMAC.*

Active roads were not considered areas no longer in use at the time of the original sampling and reporting activities, and NMOCD's inclusion of active lease roads as areas that required immediate reclamation was implemented through language included in denials of closure reports over time, including this denial provided four years after spill response activities were completed and documented in the original *Closure Request* by XTO.



XTO Energy, Inc  
Remediation Work Plan  
Nash Unit #046H

## PROPOSED REMEDIATION WORKPLAN

Upon review of the 2018/2019 soil sample analytical results, seven final soil samples (L1, L2, L6, L13, SW12, SW19, SW20) were identified in or adjacent to the active lease road with TPH or chloride concentrations exceeding the Site Closure Criteria and reclamation requirements. XTO proposes to complete full lateral and vertical delineation the impacted soil that was left in-place.

XTO requests approval to complete the following remediation activities:

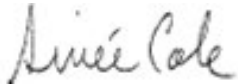
- Advance potholes via heavy equipment or drill rig at the locations of original samples L1, L2, L6, L13, SW12, SW19, SW20 to assess for the presence or absence of residual impacted soil resulting from the historical release.
  - Soil from the potholes will be field screened at 1-foot intervals for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Field screening results and observations will be logged on lithologic/soil sampling logs. Two delineation samples from each pothole will be submitted for laboratory analysis; the sample with the highest field screening result and the sample from the final pothole depth.
    - Final depth of the potholes will be determined by field screening results indicating compliance with the Site Closure Criteria.
  - The delineation soil samples will be placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples will be transported under strict chain-of-custody procedures to Eurofins Laboratories in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.
- Upon completion of the delineation activities and review of the laboratory analytical results, XTO will prepare a follow-up *Remediation Work Plan* proposing additional remediation activities, if warranted, or a *Deferral Request* if impacted soil remains in-place.
- XTO will contact the NMSLO Cultural Resources Office (CRO) to confirm that an Archaeological Records Management System (ARMS) review has been completed in the previously disturbed areas adjacent to the active road, and that no delineation activities will be completed in non-surveyed areas.
  - XTO will submit a Right-of-Entry (ROE) request to the NMSLO for access approval to complete delineation activities adjacent to the active road.
  - If excavation activities are proposed in a follow-up *Work Plan*, XTO will include a reclamation plan for revegetation of disturbed areas for NMSLO review.

XTO will complete the delineation and soil sampling activities within 90 days of the date of approval of this *Work Plan* by the NMOCD and approval of the ROE by the NMSLO. XTO believes the scope of work described above meets the requirements set forth in 19.15.29 NMAC and is protective of human health, the environment, and groundwater. As such, XTO respectfully requests approval of this *Work Plan* for Incident Number NAB1726335399.

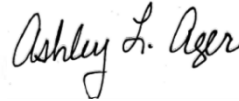
XTO Energy, Inc  
Remediation Work Plan  
Nash Unit #046H

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or [tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com).

Sincerely,  
**Ensolum, LLC**



Aimee Cole  
Senior Managing Scientist



Ashley Ager, P.G.  
Program Director

cc: Garrett Green, XTO  
Shelby Pennington, XTO  
Bureau of Land Management

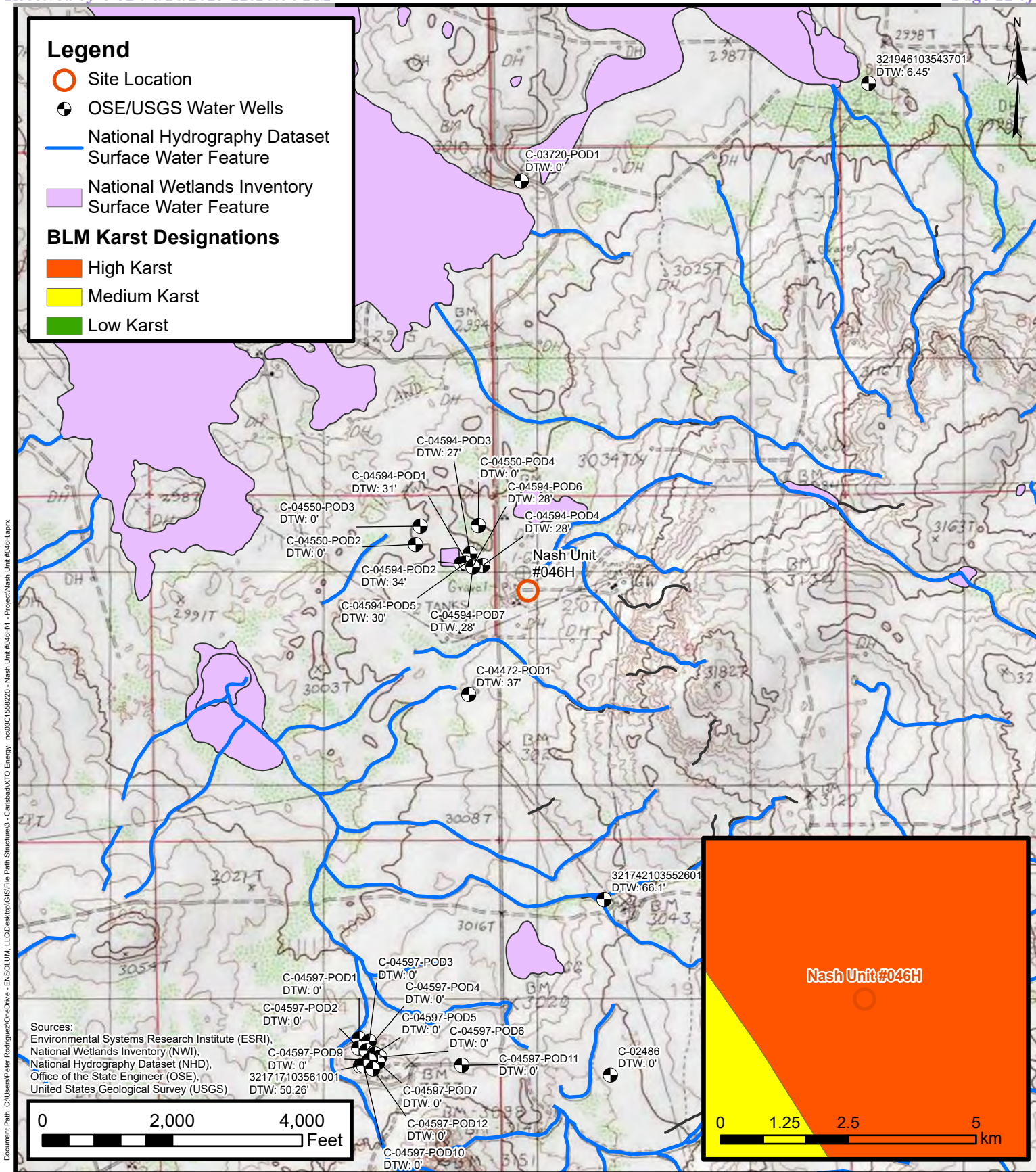
Appendices:

Figure 1	Site Receptor Map (2023)
Figure 2	Sample Location Map (2018/2019)
Table 1	Soil Sample Analytical Results (2018/2019)
Appendix A	Referenced Well Records



FIGURES





## Site Receptor Map

XTO Energy, Inc.

Nash Unit #046H

Incident Number: NAB1821139914

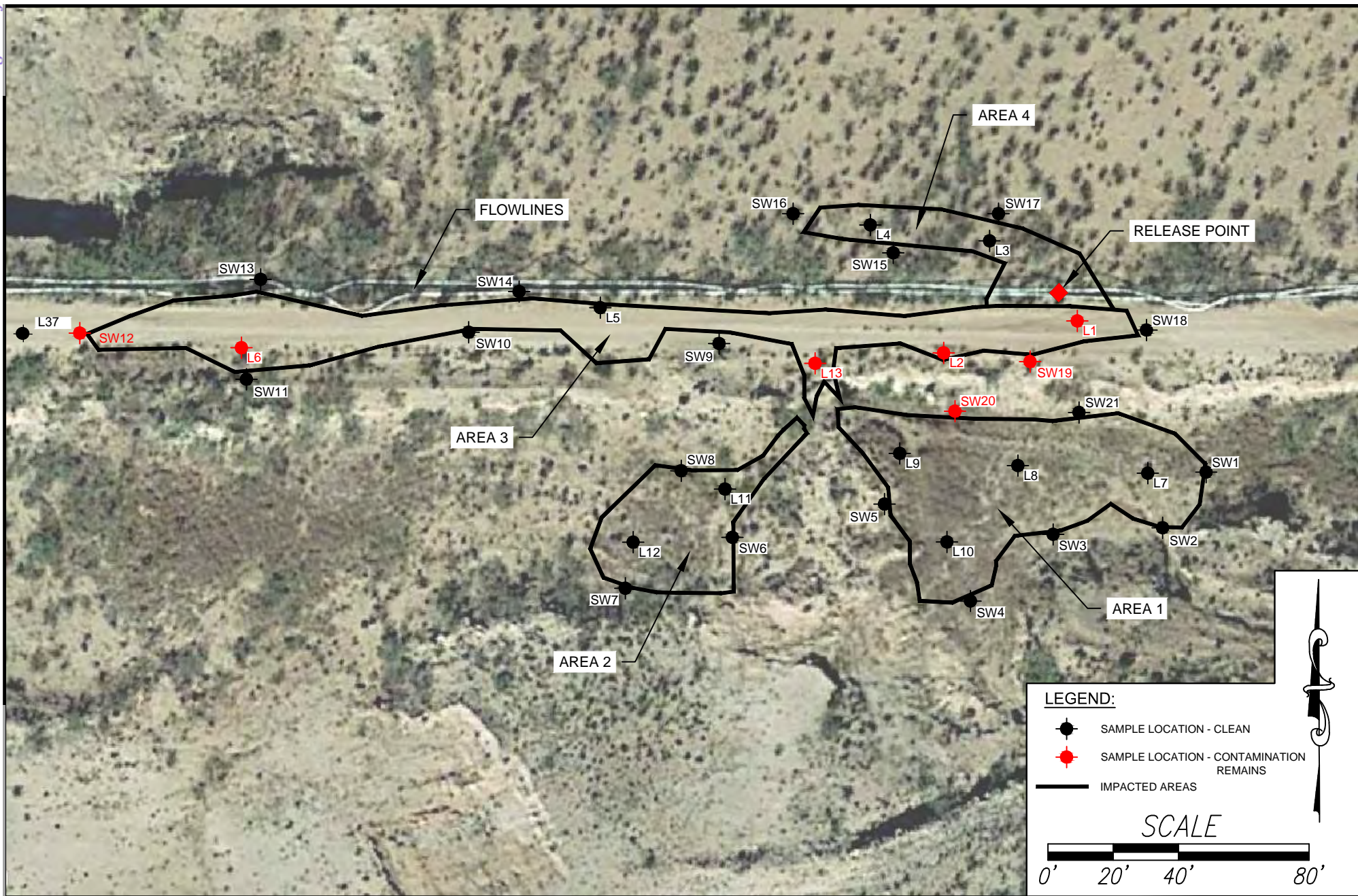
Unit C, Section 18, T23S, R30E  
 Eddy County, New Mexico

FIGURE

1

**ENSOLUM**  
 Environmental, Engineering and  
 Hydrogeologic Consultants







**SOUDER, MILLER & ASSOCIATES**  
401 W. BROADWAY  
FARMINGTON, NM 87401  
Phone (505) 325-7535 Toll-Free (800) 519-0098 Fax (505) 325-0045  
www.soudermiller.com  
Serving the Southwest & Rocky Mountains  
Albuquerque, Farmington, Las Cruces, Roswell, Santa Fe, NM - El Paso, TX  
Cortez - Grand Junction - Montrose, CO - Safford, AZ - Moab, UT

XTO

**FIGURE 2**  
**SAMPLE LOCATION MAP((2018/2019))**  
**NASH UNIT #046H**  
**SECTION 18, T23S, R30E**

EDDY COUNTY, NEW MEXICO

Designed SAH	Drawn DJB	Checked RSA
Date: March 2019		
Scale: Horiz: 1"=40'		
Vert: N/A		
Project No: 5E26784		
Figure 2		

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W:\5-XTO Carlsbad (5E26784)\BG11 - Nash Unit#046H\CAD-Figures\5E26784 Nash Unit#046H.dwg, DJB, 3/25/2019 9:13 AM



TABLES

Table 1 Summary of Sample Results (2018/2019))

## Nash Unit #046H

Sample Number on Figure 2	Sample Date	Depth ft bgs	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	Cl- mg/Kg
NMOCD Closure Criteria			50	10				100	600
BG1	8/7/2018	1	--	--	--	--	--	--	32
BG2	8/8/2018	3	--	--	--	--	--	--	<30
		8.5	--	--	--	--	--	--	<30
BG3	8/8/2018	3	--	--	--	--	--	--	<30
		4	--	--	--	--	--	--	<30
L1	7/16/2018	0.5	0.508	<0.025	6.7	1400	760	2166.7	14000
	7/16/2018	1	--	--	--	--	--	--	15000
	8/9/2018	3	--	--	<4.6	270	200	470	4100
	9/7/2018	6.5	<0.217	<0.024	<4.8	<9.8	<49	<63.6	15000
L2	7/16/2018	0.5	--	--	7.6	2100	1000	3107.6	8900
	8/9/2018	1	--	--	<4.9	1200	660	1860	2600
L3	7/16/2018	0.5	24.25	0.046	310	15000	5800	21110	10000
	7/16/2018	1	--	--	--	--	--	--	11000
	8/8/2018	1.5	--	--	--	--	--	--	<30
	8/8/2018	3.5	<0.211	<0.023	<4.7	38	<48	38	410
	9/7/2018	0-2.5*	<0.216	<0.024	<4.8	50	<50	50	1100
	12/6/2018	0-2.5*	--	--	--	--	--	--	<30
L4	7/16/2018	0.5	--	--	200	9900	4700	14800	7900
	7/16/2018	1	--	--	--	--	--	--	12000
	8/9/2018	1.5	--	--	<4.7	5300	3200	8500	550
	9/7/2018	0-2*	<0.217	<0.024	<4.8	42	<49	42	610
	12/6/2018	0-2*	--	--	--	--	--	--	87
L5	7/16/2018	0.5	--	--	<4.7	670	450	1120	16000
	8/9/2018	1	--	--	<4.8	290	240	530	7600
	9/7/2018	3	<0.213	<0.024	<4.7	<9.8	<49	<63.5	1300
	9/7/2018	6	--	--	--	--	--	--	580
L6	7/16/2018	0.5	30.2	0.10	310	8,900	4,000	13,210	16000
	7/16/2018	1	--	--	--	--	--	--	18000
	8/8/2018	6	<0.225	<0.025	<5.0	<9.6	<48	<62.6	21000
	8/8/2018	9	--	--	<4.8	160	84	244	4200
	8/8/2018	12	--	--	43	330	160	533	2700
Cannot extend deeper with excavator due to very hard layer.									
L7	7/16/2018	0.5	2.4	<0.023	34	5,900	2,700	8,634	12000
	7/16/2018	1	--	--	--	--	--	--	8900
	8/7/2018	3	--	--	<4.6	550	480	1030	6300
	9/5/2018	4-5.5*	<0.22	<0.024	<4.9	1800	1000	2800	4100
	12/6/2018	4-5.5*	--	--	<4.9	17	<50	17	490
L8	7/16/2018	0.5	--	--	<4.8	900	560	1460	3400
	8/7/2018	3	--	--	<5.0	34	<48	34	1800
	9/6/2018	5.5*	<0.217	<0.024	<4.8	<10	<50	<64.8	160
L9	7/16/2018	0.5	--	--	16	1000	530	1546	19000
	8/8/2018	3	--	--	<4.9	1400	840	2240	1100
	9/7/2018	4-8*	<0.217	<0.024	<4.8	120	87	207	190
	12/6/2018	4-8*	--	--	<4.7	140	220	360	--
	2/28/2019	4-8*	<0.222	<0.025	<4.9	69	<47	69	190



L10	7/16/2018	0.5	<0.216	<0.024	<4.8	410	330	740	780
	8/7/2018	2	--	--	<4.8	41	52	93	130
	9/7/2018	4-8*	<0.221	<0.025	<4.9	93	72	165	750
	12/6/2018	4-8*	--	--	<4.8	140	140	280	330
	2/28/2019	4-8*	<0.224	<0.025	<5.0	30	<49	30	130
L11	7/16/2018	0.5	--	--	240	19000	8400	27640	17000
	8/7/2018	3.5*	--	--	<4.7	360	230	590	4800
	9/7/2018	2-12*	<0.219	<0.024	<4.9	<48	<9.6	<62.5	43
L12	7/16/2018	0.5	38.51	0.21	250	18000	7600	25850	12000
	7/16/2018	1	--	--	--	--	--	--	22000
	8/7/2018	4*	--	--	<4.7	<8.0	<40	<52.7	240
L13	8/8/2018	2	--	--	<4.9	140	150	290	8900
	8/8/2018	3*	--	--	--	--	--	--	1000
L37	8/8/2018	1	--	--	--	--	--	--	220
	8/8/2018	4	--	--	--	--	--	--	<60
SW1	8/7/2018	0-4*	--	--	<5.0	<9.4	<47	<61.4	<30
	9/7/2018	0-4*	<0.219	<0.024	<4.9	<9.9	<49	<63.8	<30
SW2	8/7/2018	2	--	--	<4.8	130	100	230	520
	9/6/2018	0-6*	<0.216	<0.024	<4.8	<9.9	<50	<64.7	34
SW3	8/9/2018	1-3*	--	--	<5.0	1600	1100	2700	2400
	9/6/2018	0-6*	<0.221	<0.025	<4.9	<9.9	<49	<63.8	690
	10/1/2018	0-6*	--	--	--	--	--	--	110
SW4	8/8/2018	1-3*	--	--	<4.8	<9.8	<49	<63.6	400
	9/7/2018	0-3*	<0.22	<0.024	<4.9	<9.8	<49	<63.7	350
SW5	8/9/2018	2-4*	--	--	<4.9	17	<47	17	870
	9/7/2018	0-10*	<0.216	<0.024	<4.8	<9.9	<50	<64.7	110
SW6	8/9/2018	0-4*	--	--	<5.0	<9.6	<48	<62.6	2800
	9/7/2018	0-12*	<0.222	<0.025	<4.9	<9.8	<49	<63.7	61
SW7	8/7/2018	1.5	--	--	<4.7	14	<47	14	97
	9/6/2018	0-2*	<0.216	<0.024	<4.8	32	<49	32	<30
SW8	8/8/2018	0-4*	--	--	<4.8	<10	<50	<64.8	45
	9/6/2018	0-4*	<0.207	<0.023	<4.6	<9.9	<50	<64.5	<30
SW9	8/9/2018	1-3*	--	--	<4.8	<9.7	<49	<63.5	85
SW10	8/6/2018	1-3*	--	--	<4.7	<10	<50	<64.7	46
SW11	8/9/2018	1-3*	--	--	<4.8	<9.6	<48	<62.4	<30
SW12	8/8/2018	1-4*	--	--	<4.7	9.5	<46	9.5	1300
SW13	8/9/2018	1-3*	--	--	<4.9	<9.6	<48	<62.5	<30
SW14	8/8/2018	1-3.5*	--	--	<4.7	<9.7	<48	<62.4	<30
SW15	8/9/2018	1-3*	--	--	<4.7	<9.3	<46	<60	<30
SW16	8/9/2018	1-3*	--	--	<4.8	<9.7	<48	<62.5	<30
SW17	8/9/2018	1-2*	--	--	<4.7	<9.6	<48	<62.3	<30
SW18	8/8/2018	1-3*	--	--	<4.9	<9.5	<48	<62.4	260
SW19	8/9/2018	1-2*	--	--	<4.9	140	100	240	420
SW20	8/8/2018	1-3*	--	--	<4.8	14	<48	14	1100
	9/6/2018	0-12*	<0.215	<0.024	<4.8	<10	<50	<64.8	4000
SW21	8/8/2018	1-3*	--	--	<4.9	350	190	540	5300
	9/5/2018	0-12*	<0.211	<0.023	<4.7	<9.8	<49	<63.5	390

"--" = Not Analyzed

\* composite sample

L37 chloride results are from EC meter under EPA Method 4500



## APPENDIX A

### Referenced Well Records

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# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

[www.ose.state.nm.us](http://www.ose.state.nm.us)

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) POD7 (BH-11)		WELL TAG ID NO. n/a		OSE FILE NO(S). C-4594			
	WELL OWNER NAME(S) XTO Energy, Inc. attn: Adrian Baker				PHONE (OPTIONAL) (432)-236-3808			
	WELL OWNER MAILING ADDRESS 6401 Holiday Hill Dr.				CITY Midland	STATE Texas	ZIP 79707	
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32	MINUTES 18	SECONDS 33.32 N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND			
	LONGITUDE 103	55	50.69 W	* DATUM REQUIRED: WGS 84				
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE SE NE Sec. 13 T23S R29E, NMPM								
2. DRILLING & CASING INFORMATION	LICENSE NO. 1249		NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.		
	DRILLING STARTED 02/24/2022		DRILLING ENDED 02/24/2022		DEPTH OF COMPLETED WELL (FT) 34	BORE HOLE DEPTH (FT) ±34	DEPTH WATER FIRST ENCOUNTERED (FT) 28	
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input checked="" type="checkbox"/> SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) 28	DATE STATIC MEASURED 2/24/22	
	DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Hollow Stem Auger						CHECK HERE IF PITLESS ADAPTER IS INSTALLED <input type="checkbox"/>	
	DEPTH (feet bgl)		BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	24	±6.5	2" SCH 40 PVC Riser	Flush Thread 2 TPI	2.067	0.154	--
	24	34	±6.5	2" SCH 40 PVC Screen	Flush Thread 2 TPI	2.067	0.154	0.010
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		
	FROM	TO						

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO. C-4594-POD7	POD NO. POD7	TRN NO. 723705
LOCATION 23S 29E 13 4-2-2	WELL TAG ID NO. N/A	PAGE 1 OF 2



OSD, MAR 30 10:11 AM CDT

	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING ZONES (gpm)	
	FROM	TO					
<b>4. HYDROGEOLOGIC LOG OF WELL</b>	0	1	1	SAND, Dry, light brown-brown, well graded, very fine-fine grain,	Y    ✓ N		
	1	3	2	ALCIHE, Dry, tan-light brown, moderately consolidated, fine-coarse grain,	Y    ✓ N		
	3	5	2	DOLOMITE, Dry, light grey-grey, poorly consolidated, microcrystalline,	Y    ✓ N		
	5	6	1	GYP SUM, Dry, white-light pink, poorly consolidated, microcrystalline	Y    ✓ N		
	6	33	27	DOLOMITE, Dry, light grey-grey, poorly consolidated, microcrystalline, Wet	✓ Y    N		
	33	34	1	CLAY, Moist, light grey-grey, high plasticity, cohesive, some yellow-orange oxi	Y    ✓ N		
					Y    N		
					Y    N		
					Y    N		
					Y    N		
					Y    N		
					Y    N		
					Y    N		
					Y    N		
					Y    N		
					Y    N		
					Y    N		
					Y    N		
	METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER – SPECIFY:					TOTAL ESTIMATED WELL YIELD (gpm):	0.00
	<b>5. TEST; RIG SUPERVISION</b>	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.				
MISCELLANEOUS INFORMATION: 2" temporary well material in boring sealed with bentonite and metal plate to ground surface.							
PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: Shane Eldridge, Carmelo Trevino, Cameron Pruitt							
<b>6. SIGNATURE</b>	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:  Jackie D. Atkins  SIGNATURE OF DRILLER / PRINT SIGNEE NAME					3/29/22  DATE	

FOR OSE INTERNAL USE		WR-20 WELL RECORD & LOG (Version 01/28/2022)	
FILE NO.	C-4594	POD NO.	POD7
LOCATION	135 298 13 4-7-2	TRN NO.	723765
		WELL TAG ID NO.	N/A
			PAGE 2 OF 2

**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 229389

CONDITIONS

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
	Action Number:  229389
	Action Type:  [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Plan approved. Upon completion of delineation activity submit work plan via the OCD permitting portal by September 1, 2023.	6/27/2023