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 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	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party XTO Energy, Inc.	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email kyle_littrell@xtoenergy.com	Incident # *(assigned by OCD)*
Contact mailing address 522 W. Mermod, Suite 704, Carlsbad, NM	

Location of Release Source

Latitude 32.287 Longitude -103.959
(NAD 83 in decimal degrees to 5 decimal places)

Site Name PCA 53	Site Type
Date Release Discovered 11/27/18	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
K	23	23S	29E	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)

☒ Crude Oil	Volume Released (bbls) 2,022	Volume Recovered (bbls) 0
☒ Produced Water	Volume Released (bbls) 6,066	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
On November 27th, the BLM notified XTO that fluids had been discovered on surface through an existing corehole associated with a nearby potash mine. In October, XTO experienced a pressure loss while drilling the Remuda South 25 State 101H and an unknown volume of flowback fluids were released into the subsurface. BLM has associated the loss of flowback fluids into the subsurface to the November 27th event. Inspection of the site was performed by an environmental contractor and review of the data is in progress.

State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? The release exceeded 25 bbls of produced water and oil.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Release was reported by a member of the public to the BLM on 11/27/18. BLM notified XTO and XTO provided notice to Mike Bratcher, Maria Pruett, Jim Griswold at NMOCD and Jim Amos and Shelly Tucker at BLM on 11/29/18. Notification was provided by email by Bryan Foust.	

Initial Response

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

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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: Kyle Littrell Title: SH&E Coordinator

Signature: Date: 12/11/18

email: kyle_littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: Date:

Form C-141 State of New Mexico
Page 3 Oil Conservation Division

Incident ID	
District RP	
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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?	< 50 (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 State of New Mexico
Page 4 Oil Conservation Division

Incident ID	
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: Kyle Littrell Title: SH&E Coordinator

Signature: Date: 12/11/18

email: kyle_littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: Date:

Location:	PCA 53
GPS Coordinates:	32.287, -103.959
Spill Date:	Discovered 11/27/2018
Spill Time:	Unknown

Area=		75,691.60	ft^2
Saturation (or depth) of Spill=		30.00	inches
Oil Cut=		25.00	% Oil
Porosity Factor=		0.15	
Total Oil in Soil=		**1,264**	barrels
Total Produced Water in Soil=		**3,791**	barrels

Location:	PCA 53
GPS Coordinates:	32.287, -103.959
Spill Date:	Discovered 11/27/2018
Spill Time:	Unknown

Area=		113,537.40	ft^2
Saturation (or depth) of Spill=		12.00	inches
Oil Cut=		25.00	% Oil
Porosity Factor=		0.15	
Total Oil in Soil=		**758**	barrels
Total Produced Water in Soil=		**2,275**	barrels

ENSOLUM

APPROVED
By Mike Buchanan at 10:40 am, Mar 27, 2024

Review of Additional Subsurface Investigation Work Plan PCA 53: Content Satisfactory
1. Please provide hydraulic gradient and groundwater flow information in next submission if groundwater is encountered and groundwater monitoring wells are installed as a result.
2. Sampling analysis shall include TPH, chloride, TDS, BTEX, major cations/anions, and metals if groundwater is encountered.
3. Keep OCD abreast of the results from the investigation once work is complete and study has obtained results; 60 days for the site conceptual model.

August 4, 2022

District II
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

Re: Additional Subsurface Investigation Work Plan
PCA 53
Incident Number NAB1901038306 (2RP-5169)
Eddy County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this Additional Subsurface Investigation Work Plan (Work Plan) to propose supplementary investigation activities at the PCA 53 (Site), located in Unit K, Section 23, Township 23 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the Work Plan is to address requirements set by the New Mexico Oil Conservation Division (NMOCD) as stipulated in conditions applied to the NMOCD's approval of XTO's Application for administrative approval of a release notification and corrective action (C-141), and documented on May 26, 2022 in the Incident Events portion of the NMOCD's online database for Incident NAB1901038306.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Eddy County, New Mexico (32.287° N, 103.959°W) and is currently a pasture for grazing, which is owned by Bureau of Land Management (BLM). On November 27, 2018, the Bureau of Land Management (BLM) observed fluids in a pasture, which appeared to have emanated from an existing core hole associated with a neighboring potash mine. The fluid migrated along the ground surface to the north of the core hole and encompassed an area of approximately 189,230 square feet (Figure 2). The observed surface fluids in the pasture were attributed to a pressure loss associated with drilling operations at the Remuda South 25 State 101H oil well, which is owned by XTO. XTO submitted a Release Notification Form C-141 (Form C-141) to NMOCD and the Site was assigned Release Permit (RP) Number 2RP-5169 / Incident ID NAB1901038306 with requirements to delineate and remediate the release according to Part 29.

SITE CHRONOLOGY

Below is a summary of events, field activities, and deliverables for the Site:

- November 27, 2018 – XTO notified by BLM/NMOCD of Release
- November 28 and 29, 2018 – Initial Assessment of Release
- February through March 2019 - Excavation of top 4 feet of release extent
- May 9 through June 29, 2019 – Initial borehole-delineation activities completed

- August 28, 2019 – Submittal of *Remediation Work Plan* to NMOCD
- August 2019 through May 2020 – Excavation to meet Closure Criteria
- October 28, 2019 – Approval of *Remediation Work Plan* with Conditions (COAs) received from NMOCD
- September 2019 through October 2019 - Advancement of three deep monitoring wells (MW01 through MW03)
- September 2019 through February 2020 - Advancement of additional boreholes
- December 2019 – Shallow Groundwater Aquifer Assessment
- March 20, 2020 – Submittal of *Remedial Investigation (RI) Report* to NMOCD
- May 6, 2020 – Excavation completed (over 78,000 cubic yards)
- August 4, 2020 – NMOCD response to *RI* Report
- October 2, 2020 – Submittal of *Supplemental Remediation Work Plan (SRWP)* to NMOCD
- December 2020 – Completion of excavation backfill
- January 2021 – Additional groundwater assessment field activities per the *SRWP*
- February 2, 2021 – Submittal of *SRWP Updates Letter* to NMOCD
- April 15, 2021 – Submittal of *Additional Groundwater Assessment Report and Closure Request* to NMOCD
- February 9, 2022 – Meeting between NMOCD and XTO to discuss all assessments and remedial actions to-date.
- May 26, 2022 – Comments made by NMOCD on the Incidents Events portion of NMOCD website relating to additional subsurface investigation requirements

PROPOSED SUBSURFACE INVESTIGATION ACTIVITIES

According to the May 26, 2022 entry in the Incidents Events on the NMOCD website,

> The OCD accepts the data provided in the Supplemental Remediation Plan and will place the report and any corresponding files into the incident file through use of the payment portal system. The OCD believes additional investigation needs to be completed adjacent to the Remuda South 25 St #101H well. As discussed in the February 9th, 2022 meeting with the OCD Environmental Group, additional surveillance boreholes were to be put in to investigate lost subsurface fluids during the drilling of the Remuda South 25 State 101H well. A thorough investigation will need to be conducted in close proximity of the Remuda South 25 St #101H well in an attempt to trace the path of fluids from the point of release to the PCA 53 borehole. Boreholes in close proximity to the Remuda South 25 St #101H well should be dropped to the agreed upon depth and converted to monitoring wells if groundwater or trapped fluids in the strata are encountered. The OCD is obligated to make sure a complete and thorough investigation is performed. A site conceptual model using subsurface geologic and hydrologic data should be developed after the investigation around the Remuda South 25 St #101H well has been completed. An attempt should be made to map groundwater in the fractured lower portion of the dolomite strata between the release point and the PCA 53 borehole to better understand the potential pathway for fluids.

As a result, XTO proposes the installation of three soil borings to assess potential shallow and deeper water bearing zones and attempt to correlate subsurface hydrogeology to the conditions identified at the Site. XTO proposes the use of a sonic core drill rig to advance three borings to a maximum depth of 120

feet below ground surface (bgs) to assess groundwater near the former Remuda South 25 St #101H well and the Site. This depth has been chosen to assess the presence or absence of groundwater at depths where it was observed beneath the Site. A protectable groundwater aquifer was encountered generally between 85 feet and 90 feet bgs (referred to as “targeted zone”). The proposed soil boring locations are depicted on Figure 2.

During advancement of each soil boring, a geologist will log subsurface lithology in accordance with the *Unified Soil Classification System* (USCS) as specified in American Society of Testing and Materials (ASTM) D2488. Additional observations, such as petroleum hydrocarbon odor or staining will be included in the logs as well as field screening results for volatile aromatic hydrocarbons utilizing a calibrated photoionization detector (PID) and for chloride with Hach® chloride QuanTab® test strips.

Discrete soil samples will be submitted for laboratory analysis at the depth just above the targeted zone and within the groundwater table, if encountered. A soil sample will also be collected at any depth where staining, odors, or elevated field screening results are documented. Soil samples will be placed into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Eurofins Laboratory (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH – oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

The three soil borings well be left open for 72 hours to allow groundwater to infiltrate the borehole. If groundwater is encountered in any of the soil borings after the 72-hour waiting period, a groundwater grab sample will be collected and submitted to Eurofins for laboratory analysis of BTEX and chloride as well as general water chemistry, which will include: TDS following Standard Method (SM) 2540C, alkalinity following SM 2320B, carbon dioxide following SM 4500), major cations/anions following EPA Method 300.0, and metals (calcium, iron, manganese, potassium, and sodium following EPA Method 6010C.

If trapped fluids are observed in dolomite, as documented at the Site during drilling activities for the targeted zone, a separate soil boring will be drilled to that depth and a groundwater grab sample will be collected and analyzed for the same constituents described above.

Should field screening results suggest soil impacts near any water-bearing unit, XTO will convert the soil borings to monitoring wells by installing 2-inch polyvinyl chloride (PVC) well screen with gravel pack and bentonite seal. A riser will be placed above the well screen and the borehole will be grouted to the ground surface. The completed monitoring well will be surveyed and developed prior to sampling.

SCHEDULING AND REPORTING

Upon approval of the outlined additional subsurface investigation activities by NMOCD, field activities will be coordinated and initiated within 120 days. Subsurface investigation actions described above are anticipated to be completed within 45 days of initiation. This time will include landowner access approval; coordination of a subcontractor to advance the soil borings, proper soil boring permitting and utility clearance completion, advancement of the soil borings, and, if applicable; collection of groundwater samples for laboratory analysis. A summary report describing the additional subsurface investigation activities and presenting a site conceptual model will be submitted to NMOCD within 60 days of completing all field activities.

If you have any questions or comments, please contact Mr. Dan Moir at (720) 384-7365 or dmoir@ensolum.com.

Sincerely,
Ensolum, LLC

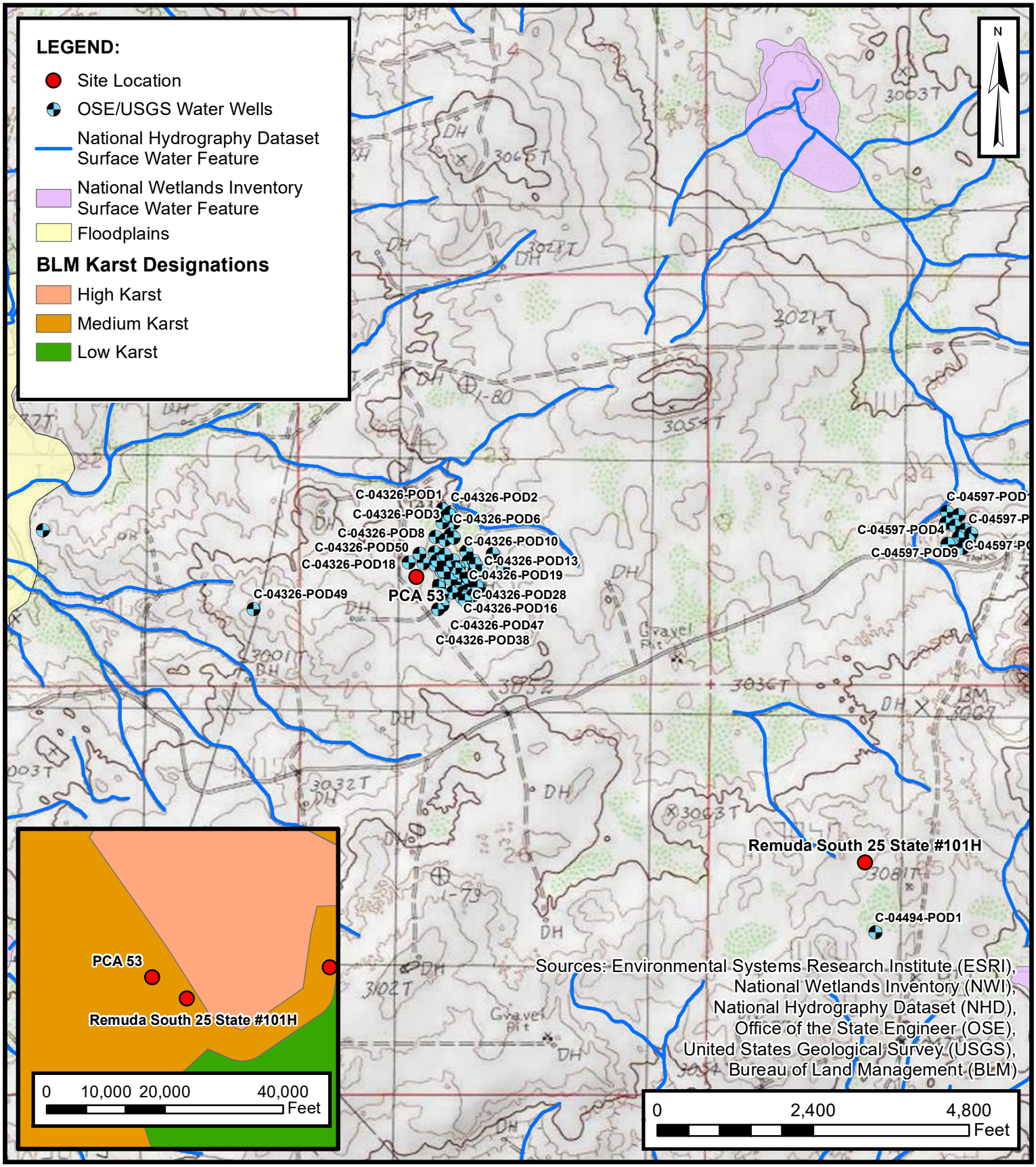
Daniel R. Moir, P.G.
Senior Managing Geologist

Stuart Hyde
Senior Geologist

cc: Adrian Baker, XTO
Bureau of Land Management

Appendices:

Figure 1 Site Location Map
Figure 2 Proposed Soil Boring Locations

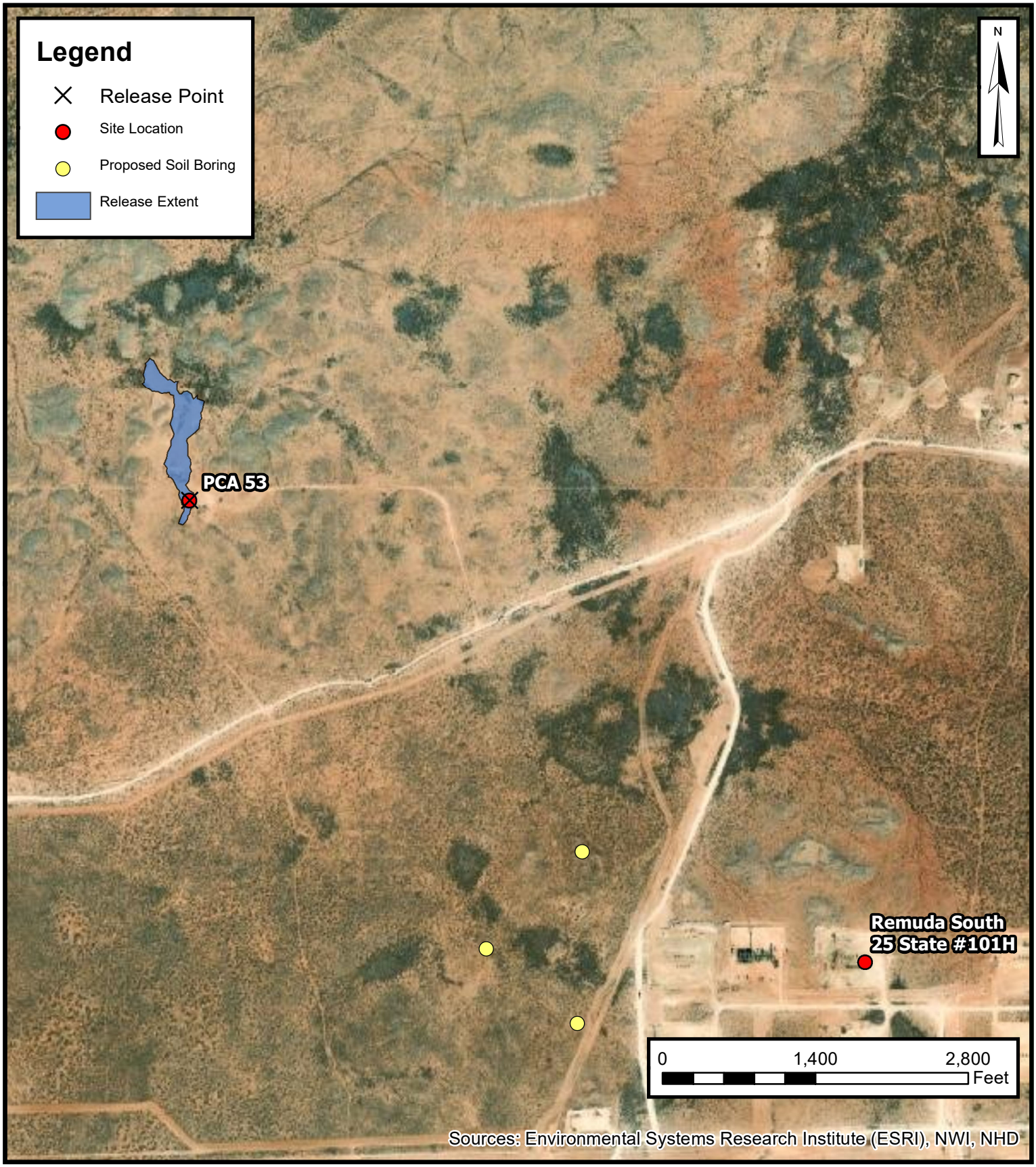


ENSOLUM
Environmental & Hydrogeologic Consultants

Site Location Map

PCA 53
XTO Energy, Inc.
Unit K, Section 23, Township 23 South, Range 29 East
Eddy County, NM

FIGURE
1



ENSOLUM
Environmental & Hydrogeologic Consultants

Proposed Soil Boring Locations

PCA 53
XTO Energy, Inc.
Unit K, Section 23, Township 23 South, Range 29 East
Eddy County, NM

FIGURE
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 152446

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 152446
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of Additional Subsurface Investigation Work Plan PCA 53: Content Satisfactory 1. Please provide hydraulic gradient and groundwater flow information in next submission if groundwater is encountered and groundwater monitoring wells are installed as a result. 2. Sampling analysis shall include TPH, chloride, TDS, BTEX, major cations/anions, and metals if groundwater is encountered. 3. Keep OCD abreast of the results from the investigation once work is complete and study has obtained results; 60 days for the site conceptual model.	3/27/2024