

**1RP-4049****Investigation Summary and Remediation Plan****XTO Energy, Inc., Perla Negra Fed Com #4H****January 25, 2016****Page 1 of 3****Introduction**

This investigation summary and remediation plan is prepared for a release at the Perla Negra Fed Com #4H (API #30-025-42577). The legal description is Unit A (NE/4, NE/4), Section 25, Township 19 South, Range 24 East, in Lea County, New Mexico. The Site is situated about 400 feet south of U.S. Hwy 62/180 at mile marker (MM) 82. The approximate geodetic position is north 32° 38' 16.3055" and west 103° 30' 24.8432". Figure 1 presents a topographic map. Figure 2 presents an aerial map.

**Background**

The release occurred on December 1, 2015, during swabbing operations causing fluid to escape from the wellhead. XTO Energy, Inc. (XTO), operator of the well, verbally notified the U.S. Bureau of Land Management (BLM) in Carlsbad, New Mexico. On December 21, 2015, XTO filed the initial C-141 with the New Mexico Oil Conservation Division (OCD) in Hobbs, New Mexico. The volume was estimated at approximately 301.3 barrels (bbl) oil and 192.8 mcf gas. Approximately 158.63 bbl of fluid was recovered. The OCD assigned the release remediation project number 1RP-4049. Attachment A presents the initial C-141.

**Setting**

The setting is as follows:

- The surface elevation is about 3,780 feet above mean sea level (MSL);
- The topography is undulating with the regional topographic slope to the southeast;
- The nearest surface water feature is a small playa located about 2 miles northeast of the Site with no surface connection to the Site;
- The dominant soil types are "Pyote soils and dune land" (29.2%), "Kermit-Palomas fine sands, 0 to 12 percent slopes" (20%) and "Simona fine sandy loam, 0 to 3 percent slopes" (18.3%). The Pyote soil is fine sandy eolian deposits derived from sedimentary rock. The Kermit-Palomas fine sands are calcareous sandy eolian deposits derived from sedimentary rock. The Simona fine sandy loam is calcareous eolian deposits derived from sedimentary rock. The Pyote soils are present south of the location and forms dunes. The Kermit-Palomas fine sands are present in the area of the Perla Negra Fed Com #4H. The Simona fine sandy loam is present east of the Site. The principal use is range and wildlife habitat;
- Two (2) fresh water wells are located within 1-mile according to New Mexico State Engineer (NMOSE) records. The nearest well (CP 8941) is located about 2,000 feet northeast in Unit M (SW/4, SW/4), Section 19, Township 19 South and Range 35 East. Depth to groundwater is reported at 285 feet below ground surface (bgs). The furthest well (CP00583) is located about 5,100 feet southwest in Unit O (SW/4, SE/4), Section 25, Township 19 South, Range 34 East with depth to groundwater about 28 feet bgs. Figure 1 presents the approximate locations for the water wells.

### **Remediation Action Levels**

Remediation action levels (RRAL) are calculated for benzene, BTEX and TPH based on the following criteria established by the OCD (*Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993*):

<b><i>Criteria</i></b>	<b><i>Result</i></b>	<b><i>Score</i></b>
Depth-to-Groundwater	Unknown	0
Wellhead Protection Area	No	0
Distance to Surface Water Body	> 1000 Horizontal Feet	0

An RRAL for total petroleum hydrocarbons (TPH) is not possible due to unknown depth to groundwater.

### **Initial Response**

XTO immediately began cleanup operation once the well was stable and safety personnel cleared the area for entry. Contractors were mobilized to begin recovering free liquid from the location and a utility right of way (ROW) located immediately south of the location. The ROW is owned by AT&T for fiber optic cables. A contractor scraped soil from the location to about 8 inches bgs for disposal at the R360 Halfway located at MM 66 about 16 miles west of the Site. The area was treated with Micro-Blaze® microbial amendment.

On December 3, 2015, LAI personnel mapped and recorded the boundary of the release using a Trimble® global position system (GPS) hand held receiver. Wind dispersed fluid east about 2,850 feet and about 2,100 feet south of the location. An area of heavy hydrocarbons identified as the "Red Zone" extends to about 750 feet east and 850 feet south of the location. The Red Zone encompasses about 835,916 square feet or approximately 19.2 acres. Beyond the "Red Zone" for a distance of about 250 feet is an area of lighter hydrocarbons identified as the "transition zone". The Transition Zone encompasses about 677,292 square feet or about 15.55 acres. Beyond the transition zone is the area of lightest hydrocarbons or mist which is identified as the "Green Zone". The Green Zone extends about 1,000 feet south and 1,700 feet east of the transition zone. The Green Zone encompasses about 3,120,362 square feet or about 71.63 acres. The total affected area, excluding the location, is about 4,630,863 square feet or about 106.3 acres. The affected portion of the location is about 64,728 square feet or about 1.48 acres. Figure 3 presents a map showing the approximate boundaries for the Red, Transition and Green Zones. Figure 4 presents a Site drawing with the hydrocarbon stained and scraped areas. Attachment B presents photographs.

Beginning on December 5, 2015, LAI personnel applied a solution (6%) of Micro-Blaze® microbial amendment to the Red Zone. The amendment was hand applied using a low impact all terrain vehicle and tank. The treated area was mapped each day with the Trimble GPS receiver. Figure 5 presents the Micro-Blaze® treatment areas by date.



## **Investigations**

### **Soil Boring**

A boring will be drilled hydraulically up gradient (northwest) of the Site to determine depth to groundwater for calculating the RRAL. The boring will be drilled to a maximum depth of 100 feet and depth to groundwater will be gauged with an electronic water level meter. The boring will be plugged with bentonite. A permit will be obtained from the NMOSE. Figure 4 presents the proposed location for the boring.

### **Soil Samples**

Soil samples will be collected from the location and ROW south of the location to assess remedial actions. Four (4) samples (S-1 through S-4) will be collected from the location and 3 samples (S-5 through S-7) will be collected from the ROW. The samples will be collected with a stainless steel hand auger from about 0 to 1 foot bgs. The samples will be analyzed for total petroleum hydrocarbons (TPH) and chloride by EPA SW-846 methods 8015, including gasoline (GRO) and diesel (DRO) organic fractions and chloride by method 300. Figure 4 presents the proposed sample locations;

Soil samples will be collected from the Red Zone to assess microbial reduction of hydrocarbons by Micro-Blaze<sup>®</sup> microbial amendment. Eleven (11) samples (S-8 to S-18) will be collected at the approximate locations shown on Figure 6. Each sample will be collected with a stainless steel hand auger from about 0 to 1 foot bgs and analyzed for TPH and chloride by EPA SW-846 method 8015 and 300, respectively.

### **Additional Remediation**

Micro-Blaze<sup>®</sup> microbial amendment (3%) will be applied to the Transition Zone by similar methods as the Red Zone. Soil samples will be collected at four (4) locations (S-19 through S-22) about 30 days after treatment. The samples will be collected at the approximate locations shown on Figure 7. Each sample will be collected with a stainless steel hand auger from about 0 to 1 foot bgs and analyzed for TPH and chloride by EPA SW-846 method 8015 and 300, respectively. No treatment or soil sampling is proposed for the Green Zone.

### **Report**

A detailed report will be prepared and submitted to BLM and OCD upon completion of the remediation. The report will include recommendations for additional remediation, if necessary.



Mark J. Larson, CPG #10490  
Sr. Project Manager/President

## Figures



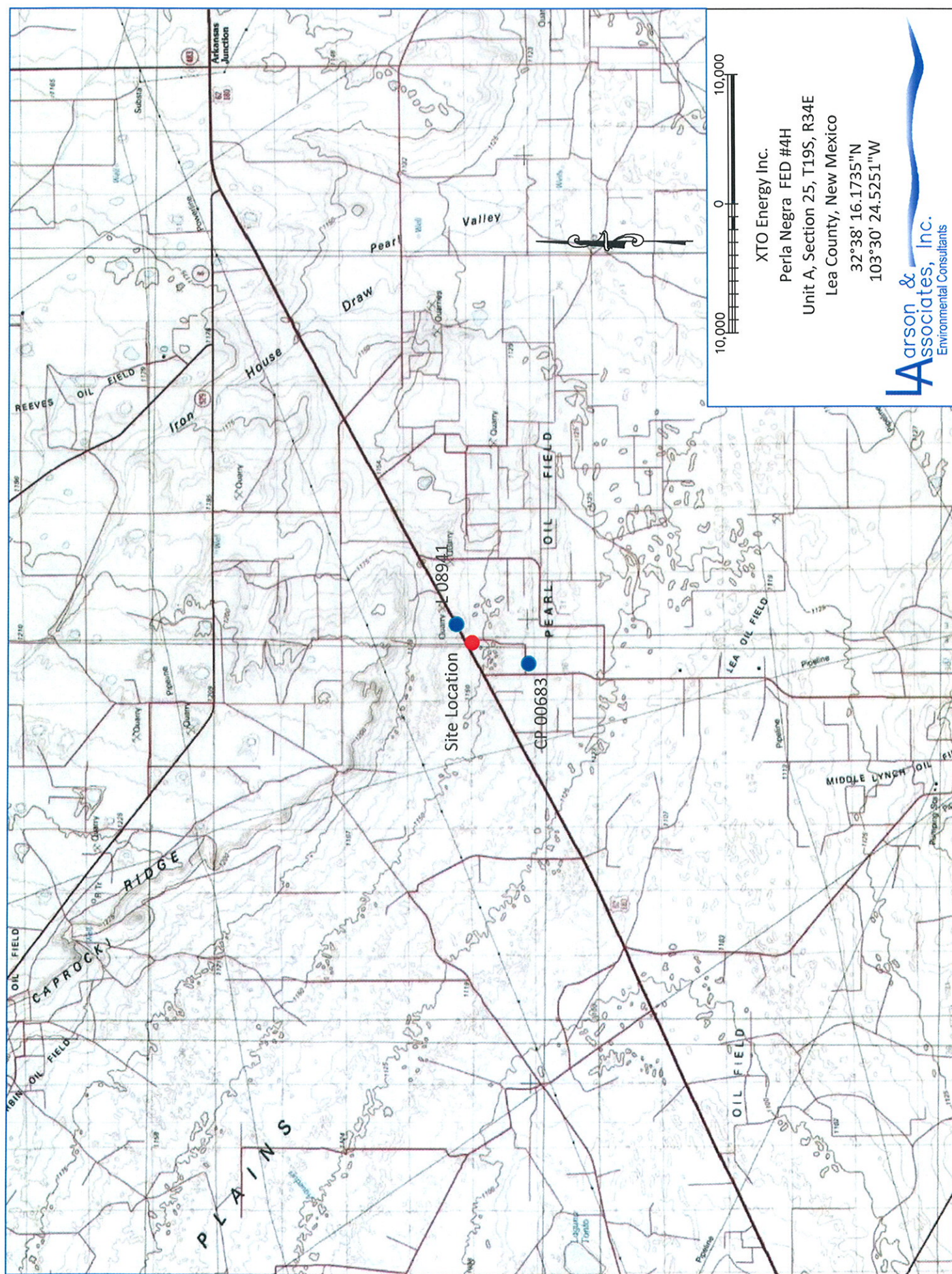


Figure 1 - Topographic Map



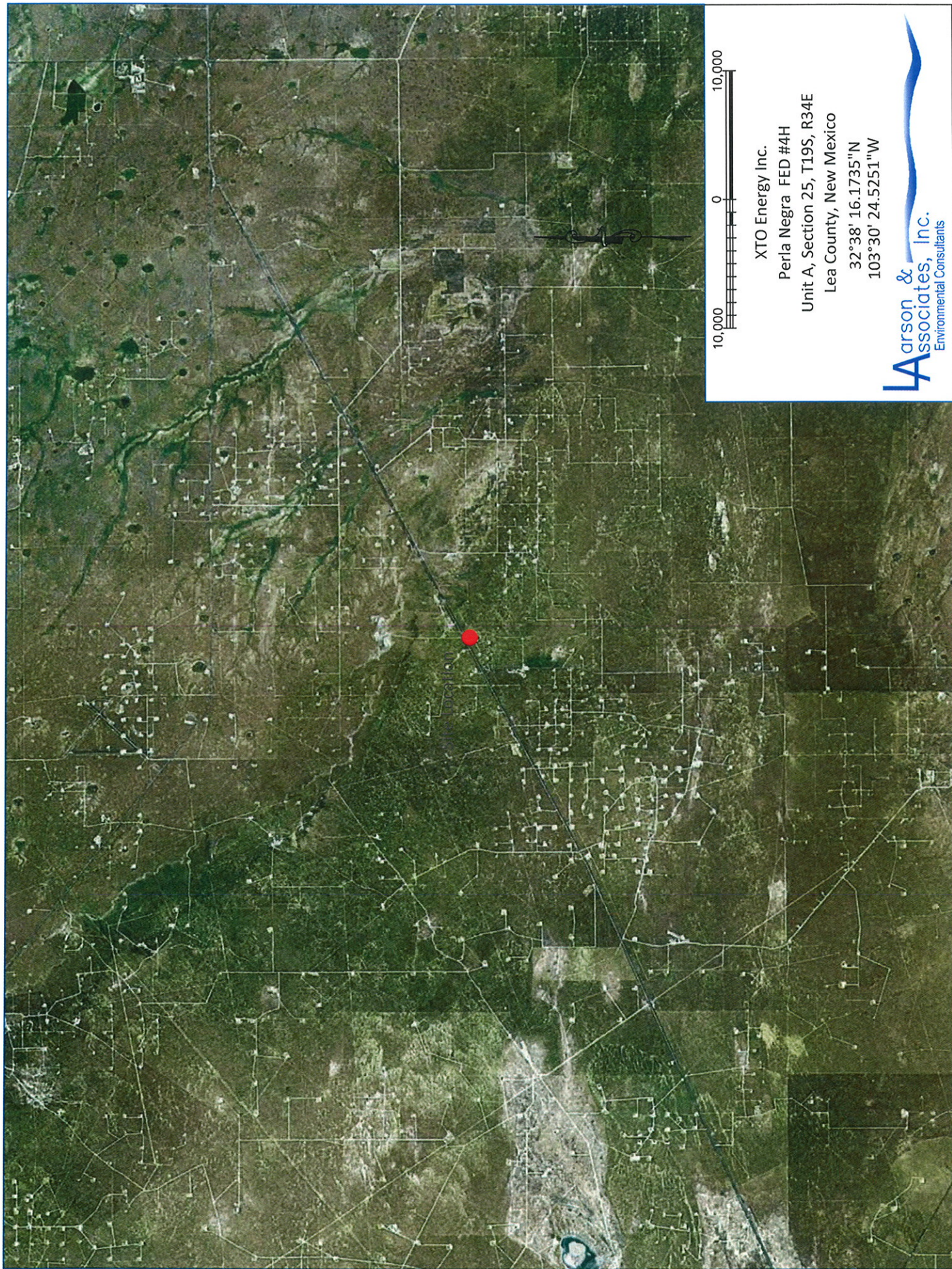


Figure 2 - Aerial Map



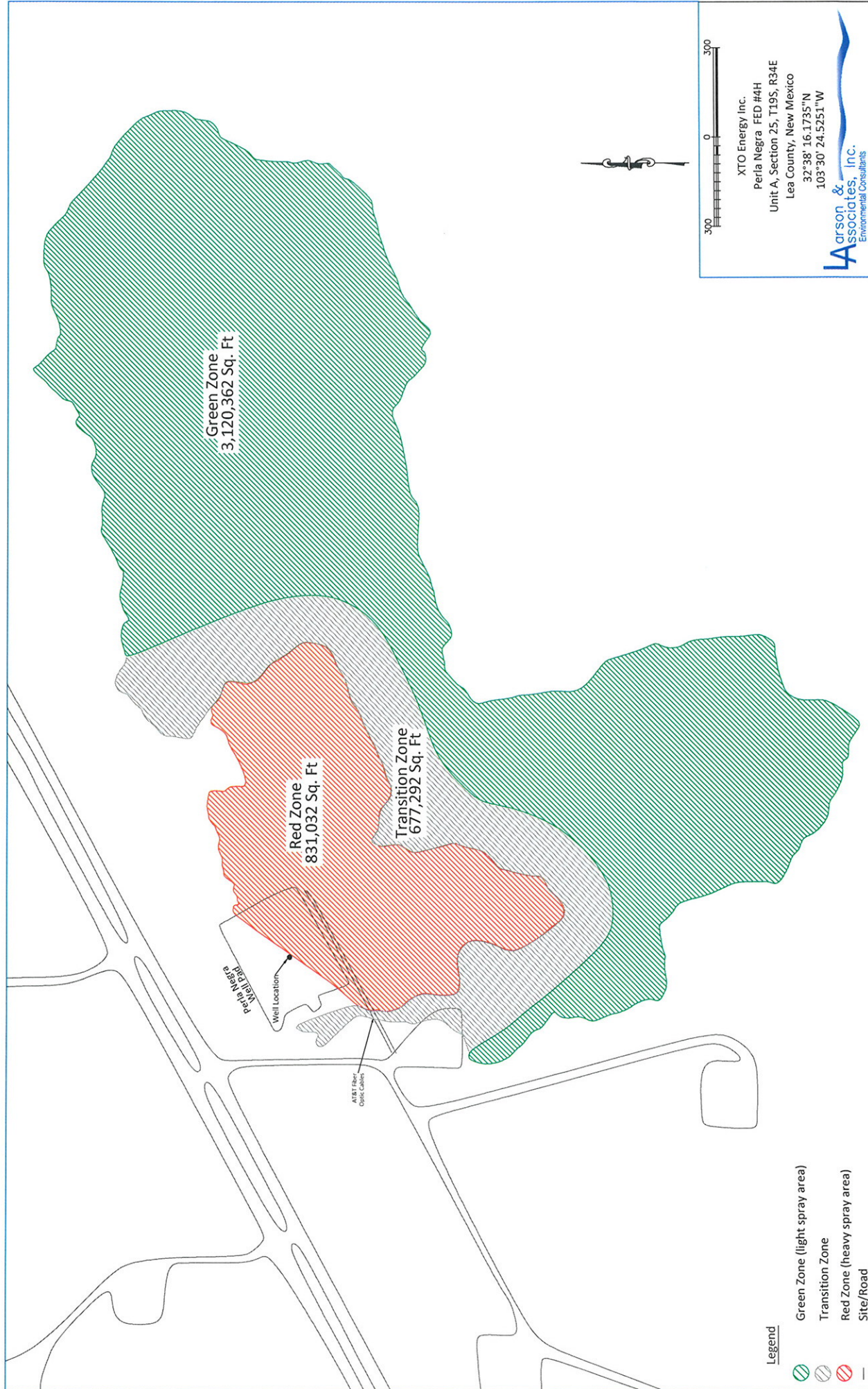


Figure 3 - Site Map with Spill Data



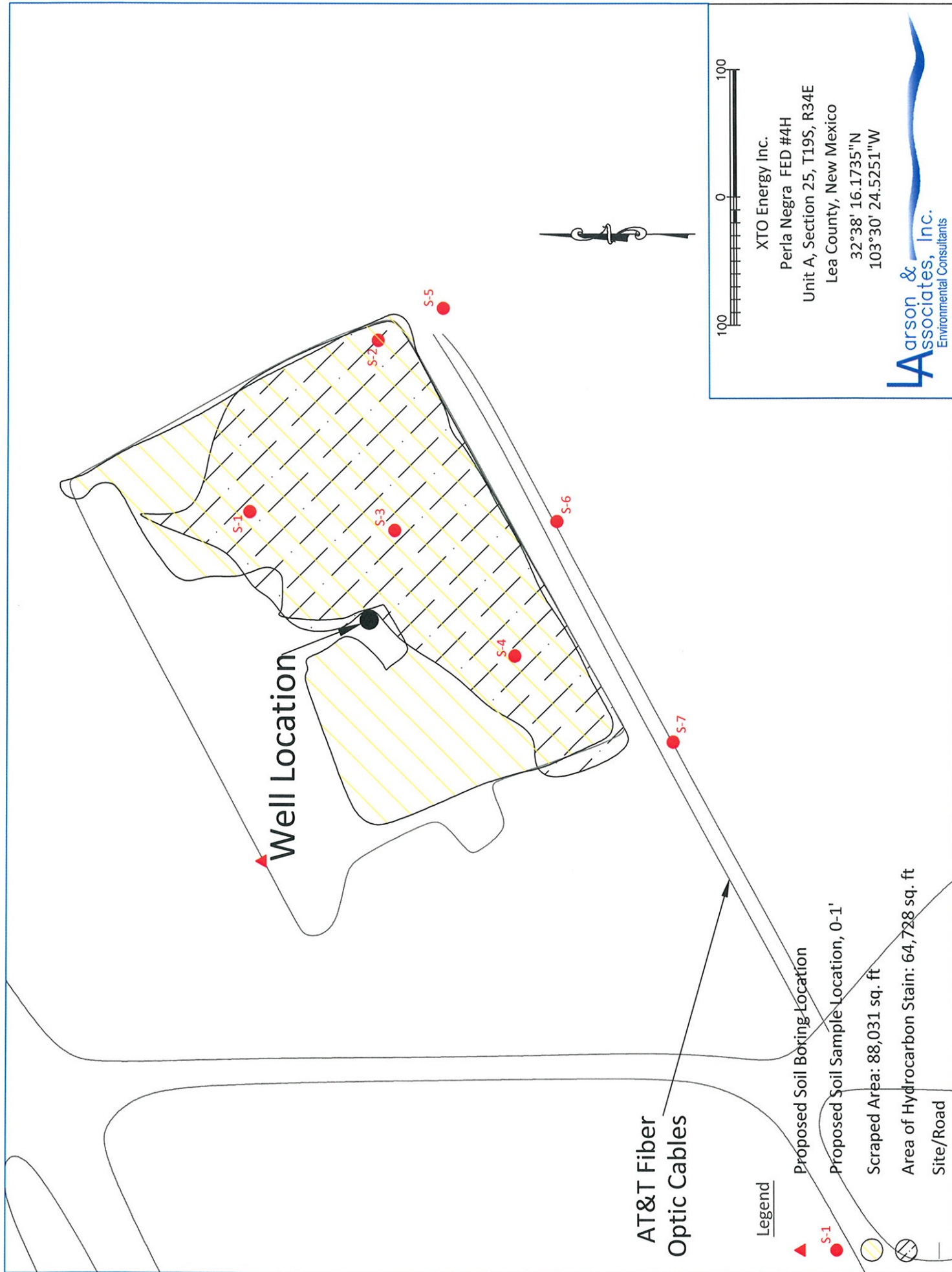


Figure 4 - Site Map with Proposed Soil Sample Locations



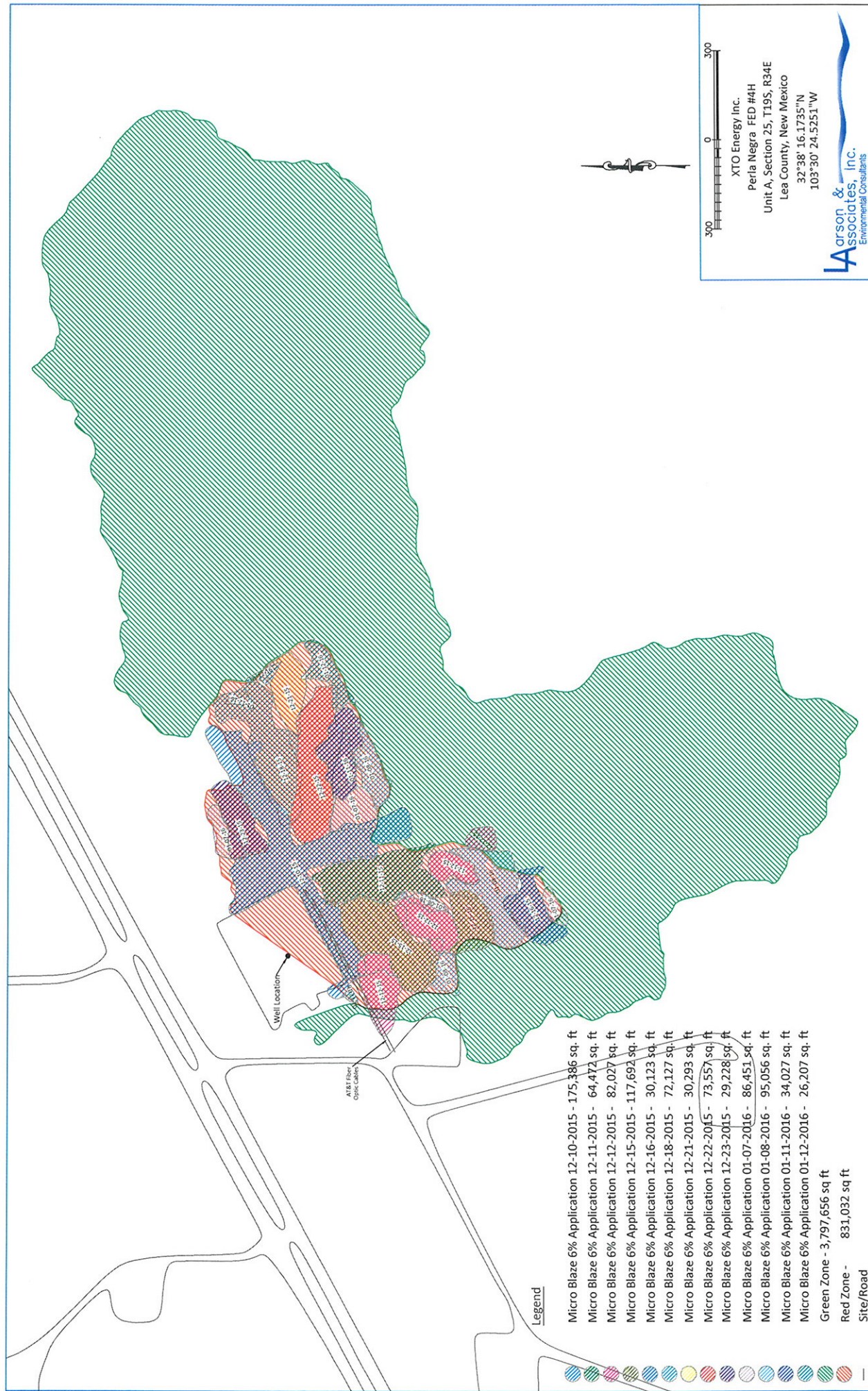


Figure 5 - Site Map with Treated Areas



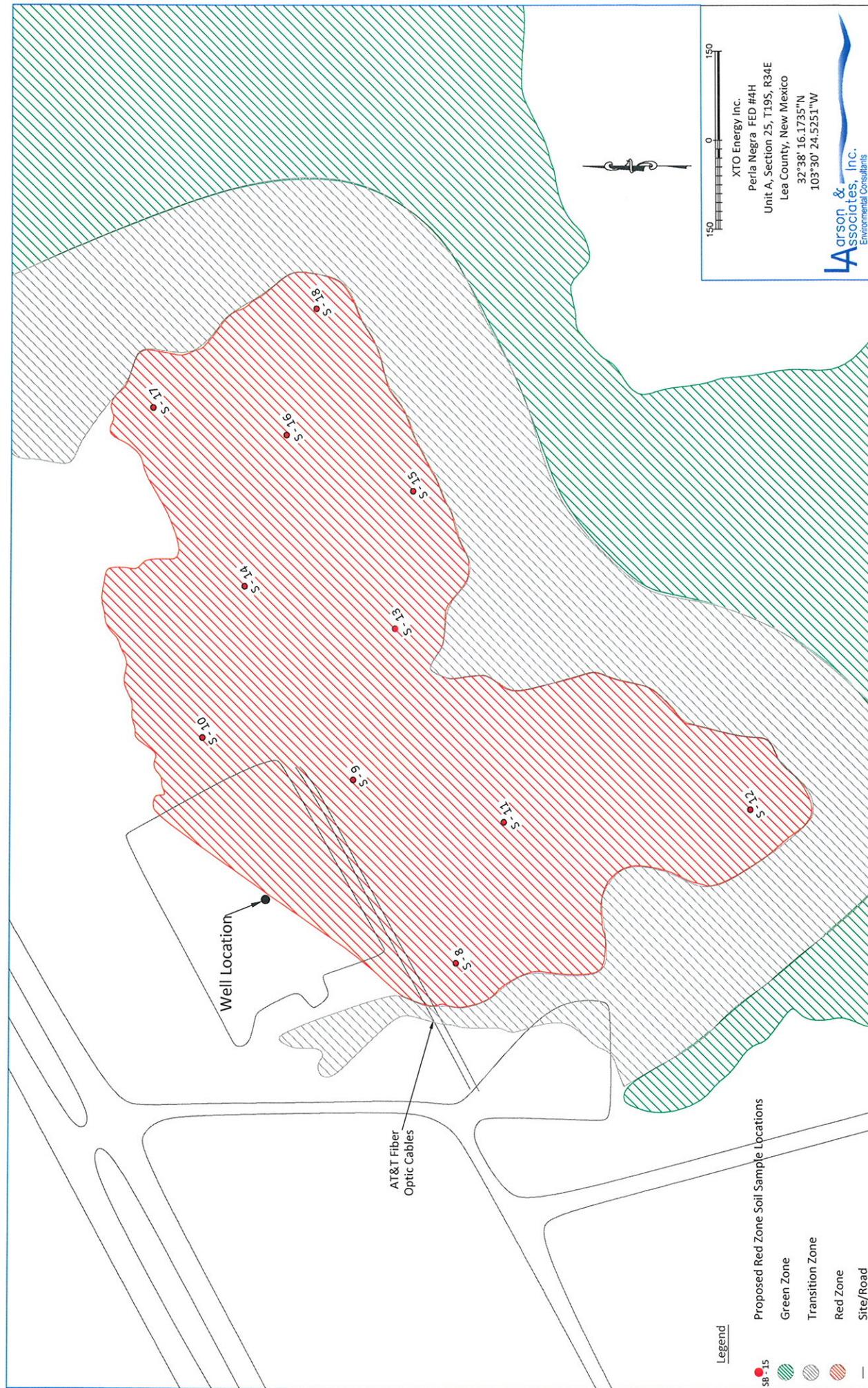


Figure 6 - Proposed Red Zone Soil Sample Locations Map



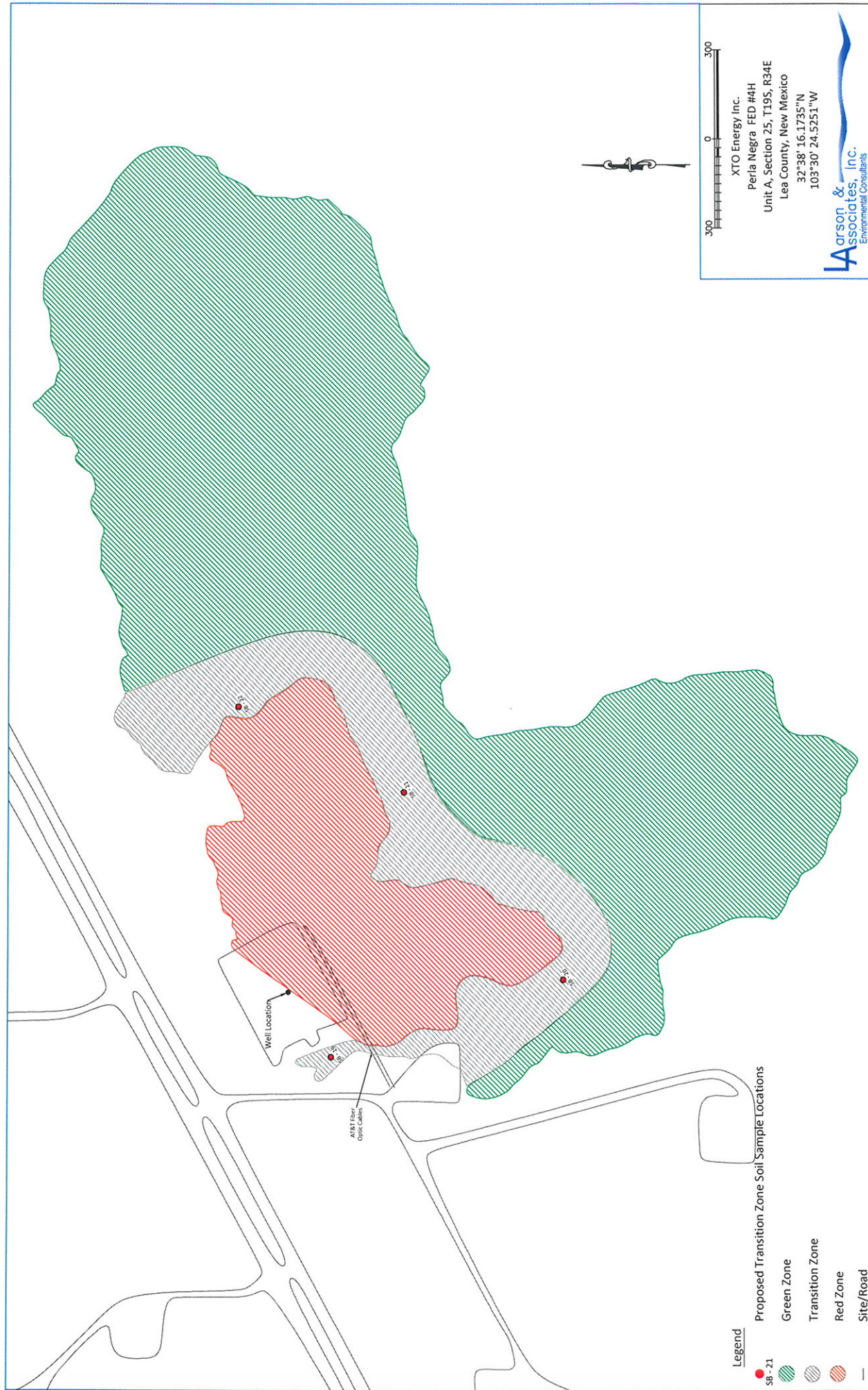


Figure 7 - Proposed Transition Zone Soil Sample Locations Map

**Attachment A**

**Initial C-141**



**RECEIVED****By JKeyes at 12:45 pm, Dec 21, 2015**

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

Form C-141  
Revised August 8, 2011

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

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: XTO Energy, Inc	Contact: Stephanie Rabadue
Address: 500 W. Illinois St Ste 100 Midland, Texas 79701	Telephone No.: 432-620-6714
Facility Name: Perla Negra Federal Com #4H	Facility Type: Well Site
Surface Owner: Bureau of Land Management	Mineral Owner: Bureau of Land Management
API No.: 30-025-42577	

#### LOCATION OF RELEASE

Unit Letter A	Section 25	Township 19S	Range 34E	Feet from the 298	North/South Line North	Feet from the 485	East/West Line East	County Lea
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Latitude: 32.637653 N Longitude: 103.506267 W

#### NATURE OF RELEASE

Type of Release: Blow Out	Volume of Release: 301.3bbls oil 192.8mcf gas	Volume Recovered: 158.63bbls (to date) Clean-Up in Progress
Source of Release: Well	Date and Hour of Occurrence 12/1/2015, 11AM CST	Date and Hour of Discovery 12/1/2015, 11AM CST
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Jim Amos, Bureau of Land Management	
By Whom? Bo Jackson, XTO Energy	Date and Hour: 12/1/2015 2:30pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. Not Applicable	
If a Watercourse was Impacted, Describe Fully.* Not Applicable. No watercourse in vicinity.		
Describe Cause of Problem and Remedial Action Taken.* Pulling unit was fishing parted swab line and cups, they pulled out tubing until got to the tail of the swab line. Installed a TIW valve and latched on with rod elevator and pulled out hole. Tied onto the tubing to pump down and it was plugged. Took off the TIW and started out of the hole when well kicked. Wild well control came to location and well was secured by placing TIW valve on the well head.		
Describe Area Affected and Cleanup Action Taken.* Estimated area affected to be 500'x500'. XTO Energy, Inc has hired a third-party environmental company to evaluate and perform clean-up. Clean-up is in progress. .		
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.		

#### OIL CONSERVATION DIVISION

Signature: <i>Stephanie Rabadue</i>	Approved by Environmental Specialist: <i>Jane Keyes</i>	
Printed Name: Stephanie Rabadue	Approval Date: 12/21/2015	Expiration Date: 02/21/2016
Title: Regulatory Analyst	Conditions of Approval: Discrete site samples required. Delineate and remediate per NMOCD guidelines.	
E-mail Address: stephanie_rabadue@xtoenergy.com	Attached <input type="checkbox"/> 1RP 4049	
Date: 12/21/2015 Phone: 432-620-6714	Geotagged photos recommended. Ensure BLM concurrence/approval.	

\* Attach Additional Sheets If Necessary

nJXK1535545760  
pJXK1535545828



**Attachment B**

**Photographs**

**Attachment B**

**Photographs**

**Photographs**



Viewing North from Southwest Corner of Location



Viewing Northeast from Southwest Corner of Location





Viewing East from Southwest Corner of Location



Viewing Northeast from South Center of Location



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XTO Energy, Inc.  
Perla Negra Fed COM # 4H  
Lea County, New Mexico  
December 5, 2015



Viewing West from Southeast Corner of Location



Viewing West from East Center of Location





Viewing North from Southeast Corner of Location



Viewing Northeast from Southeast Corner of Location





Viewing Southeast from South Center of Location



Viewing Southwest from South Center of Location



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Viewing Northwest from Southeast of Location