



LT Environmental, Inc.

3300 North A Street, Building 1, #103
Midland, Texas 79705
T 432.704.5178

October 15, 2018

Mr. Mike Bratcher
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

**RE: Closure Request
PLU Big Sinks 3-25-30 Battery
Remediation Permit Number 2RP-4526 and 2RP-4744
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), is pleased to present the following letter report detailing the soil sampling and excavation activities at the PLU Big Sinks 3-25-30 Battery (Site) in Unit Letter O, Section 3, Township 25 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to assess impacts to soil after two separate events caused the release of crude oil and of produced water on the well pad and the surrounding pasture.

On December 1, 2017, XTO discovered a release of crude oil and produced water from a hole in the produced water line within the lined containment. Approximately 25 barrels (bbls) of crude oil and produced water were released. The spill impacted approximately 390 square feet of the well pad. Approximately 24 bbls of free-standing liquids were recovered using a vacuum truck. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on December 15, 2017, and was assigned Remediation Permit Number (RP) 2RP-4562 (Attachment 1).

On April 25, 2018, corrosion on a riser for an off-location flowline south of the well pad caused the release of approximately 1 bbl of crude oil and approximately 290 bbls of produced water. There was an existing open excavation around the steel riser where XTO was conducting maintenance on the flowline dogleg. The release pooled in the excavation and then flowed westward in the pasture. Free-standing liquid was recovered consisting of approximately 270 bbls of oil and produced water. XTO reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 on May 10, 2018, and was assigned Remediation Permit Number (RP) 2RP-4744 (Attachment 1).





Bratcher, M.
Page 2

BACKGROUND

Because the release and remediation work was conducted prior to August 14, 2018, LTE applied the NMOCD's 1993 *Guidelines for Leaks, Spills, and Releases* for determining remediation action levels. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data and known aquifer properties. The nearest permitted water well is C 03176, located approximately 1.60 miles northeast of the Site, with a depth to groundwater of 425 feet bgs and a total depth of 600 feet bgs. The closest surface water to the Site is an unnamed arroyo located approximately 2,922 feet west of the Site. The Site is greater than 200 feet from any private domestic water source and greater than 1,000 feet from a water source. Based on these criteria, the NMOCD site ranking for remediation action levels was 0, and the following remediation action levels applied: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg benzene, toluene, ethylbenzene, and total xylenes (BTEX); and 5,000 mg/kg total petroleum hydrocarbons (TPH). Based on standard practice in this region, LTE applied a site-specific chloride action level of 600 mg/kg.

SOIL SAMPLING

On December 15, 2017, an LTE scientist observed surficial soil staining just outside the northeast corner of the tank battery containment and collected five preliminary soil samples (SS1 through SS5) to assess the lateral extent of impacted soil associated with the 2RP-4526 release. To eliminate the effects from weathering and natural degradation of contaminants at the ground surface, the soil samples were collected from each sample location at approximately 0.5 feet bgs. The soil sample locations were selected based on information provided on the initial Form C-141s and field observations.

Soil samples were screened for volatile aromatic hydrocarbons using a photo-ionization detector (PID) equipped with a 10.6 electron volt lamp in accordance with the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases*, August 13, 1993. The soil samples were placed directly into pre-cleaned glass jars, labeled with location, date, time, sampler, and method of analysis, and immediately placed on ice. The samples were shipped to Xenco Laboratories in Midland, Texas, at 4 degrees Celsius (°C) under strict chain-of-custody procedures for analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021B, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) by EPA Method 8015 Modified, and chloride by EPA Method 300.

Laboratory analytical results for the preliminary soil samples associated with release 2RP-4526 indicated two soil samples (SS4 and SS5) exceeded the NMOCD site-specific remediation action level for chloride. The laboratory analytical results are depicted on Figure 2 and summarized in





Bratcher, M.
Page 3

Table 1. Based on field screening, visual observations, and soil sample laboratory analytical results, excavation of impacted soil was required.

Before excavation was initiated, release 2RP-2744 occurred. To make efficient use of excavation equipment on site, XTO decided to address both releases during one field effort. No initial soil screening samples were collected for the 2RP-4744 release as the excavation was guided by the surface soil staining and field screening results.

EXCAVATION ACTIVITIES

During June and July 2018, LTE personnel returned to the Site to oversee excavation of impacted soil. Excavation activities commenced on June 12 and concluded on July 17, 2018. To delineate hydrocarbon and chloride impacts to soil and direct excavation activities, LTE screened soil samples using a PID and Hach® chloride QuanTab® test strips. The final excavation extents are depicted on Figure 3.

Excavation activities associated with the 2RP-4562 were completed in the areas around preliminary soil samples SS4 and SS5, and where surficial soil staining was observed outside the northeast corner of the tank battery containment. The excavation was completed to a depth of approximately 2.5 feet bgs. The final excavation measured approximately 99 square feet. Approximately 11 cubic yards of soil were removed from the excavation using a trackhoe, loader, and hydro-vacuum. Upon completion of excavation activities, LTE collected confirmation soil sample FS01 from the floor of the excavation and soil samples SW01 through SW04 from the sidewalls of the excavation. The final excavation extent and soil sample locations and are illustrated on Figure 2.

Excavation activities associated with the above-ground steel riser release, 2RP-4744, were completed in and around the existing excavation where the release was observed to be pooling and where LTE observed soil staining in the pasture south of the pad. Excavation activities commenced on June 14 and concluded on July 17, 2018. The excavation was completed to depths ranging from 2.5 feet to 4 feet bgs in the western half of the excavation and depths ranging between 10 feet and 18 feet bgs in the eastern half of the excavation near the release point. The final excavation measured approximately 18,000 square feet. Approximately 2,340 cubic yards of soil were removed from the excavation using a trackhoe, loader, and hydro-vacuum. Upon completion of excavation activities, LTE collected confirmation soil samples FS2 through FS14 from the floor of the excavation and soil samples SW05 through SW22 from the sidewalls of the excavation. The final excavation extent and soil sample locations and are illustrated on Figure 4.

The confirmation soil samples from all excavations were collected and handled as previously described and submitted to Xenco Laboratories in Midland, Texas. The impacted soil removed





Bratcher, M.
Page 4

from all excavations was transported and properly disposed of at the Lea Land Landfill and the R360 Landfill located in Eunice, New Mexico, and Hobbs, New Mexico, respectively.

ANALYTICAL RESULTS

Laboratory analytical results indicated BTEX and TPH concentrations were compliant with the NMOCD remediation action levels in all final confirmation samples associated with both releases. Laboratory analytical results associated with release 2RP-4526 indicated two samples (SS4 and SS5) initially exceeded the site-specific remediation action level for chloride, ranging from 755 mg/kg in SS4 to 5,610 mg/kg in SW5. The excavation for the 2RP-4526 release was extended in those areas, and all subsequent samples (FS01, SW01, SW02, SW03, and SW04) contained chloride concentrations compliant with the site-specific remediation action level, with the highest concentration of 489 mg/kg in SW01. No initial screening samples were collected for the 2RP-4744 release as the excavation was guided by the surface soil staining and field screening results. All 31 confirmation samples collected from this excavation indicated BTEX, TPH and chloride concentrations were in compliance with site-specific remediation action levels. Laboratory analytical results are summarized on in Table 1, and the complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

Laboratory analytical results for the final confirmation surface soil samples and final excavation soil samples indicate that BTEX, TPH, and chloride concentrations are compliant with NMOCD site-specific remediation action levels. XTO requests no further action for release numbers 2RP-4562 and 2RP-4744. Upon approval of this request, XTO will backfill and recontour the excavations, and a Bureau of Land Management (BLM) mix number 3 will be applied to the pasture. An updated NMOCD Form C-141 for each release is included in Attachment 1.

If you have any questions or comments, please do not hesitate to contact Adrian Baker at (432) 887-1255 or abaker@ltenv.com.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads 'Adrian Baker'.

Adrian Baker
Project Geologist

A handwritten signature in blue ink that reads 'Ashley L. Ager'.

Ashley L. Ager, P.G.
Senior Geologist





Bratcher, M.
Page 5

cc: Kyle Littrell, XTO
Maria Pruett, NMOCD
Jim Amos, BLM
Shelly Tucker, BLM

Attachments:

Figure 1 - Site Location Map

Figure 2 –Soil Sample Locations (2RP-4526)

Figure 3 - Site Map

Figure 4 - Soil Sample Locations – Pasture (2RP-4744)

Table 1 - Soil Analytical Results

Attachment 1 - Initial/Final NMOCD Form C-141 (2RP-4526 and 2RP-4744)

Attachment 2 - Laboratory Analytical Reports



FIGURES



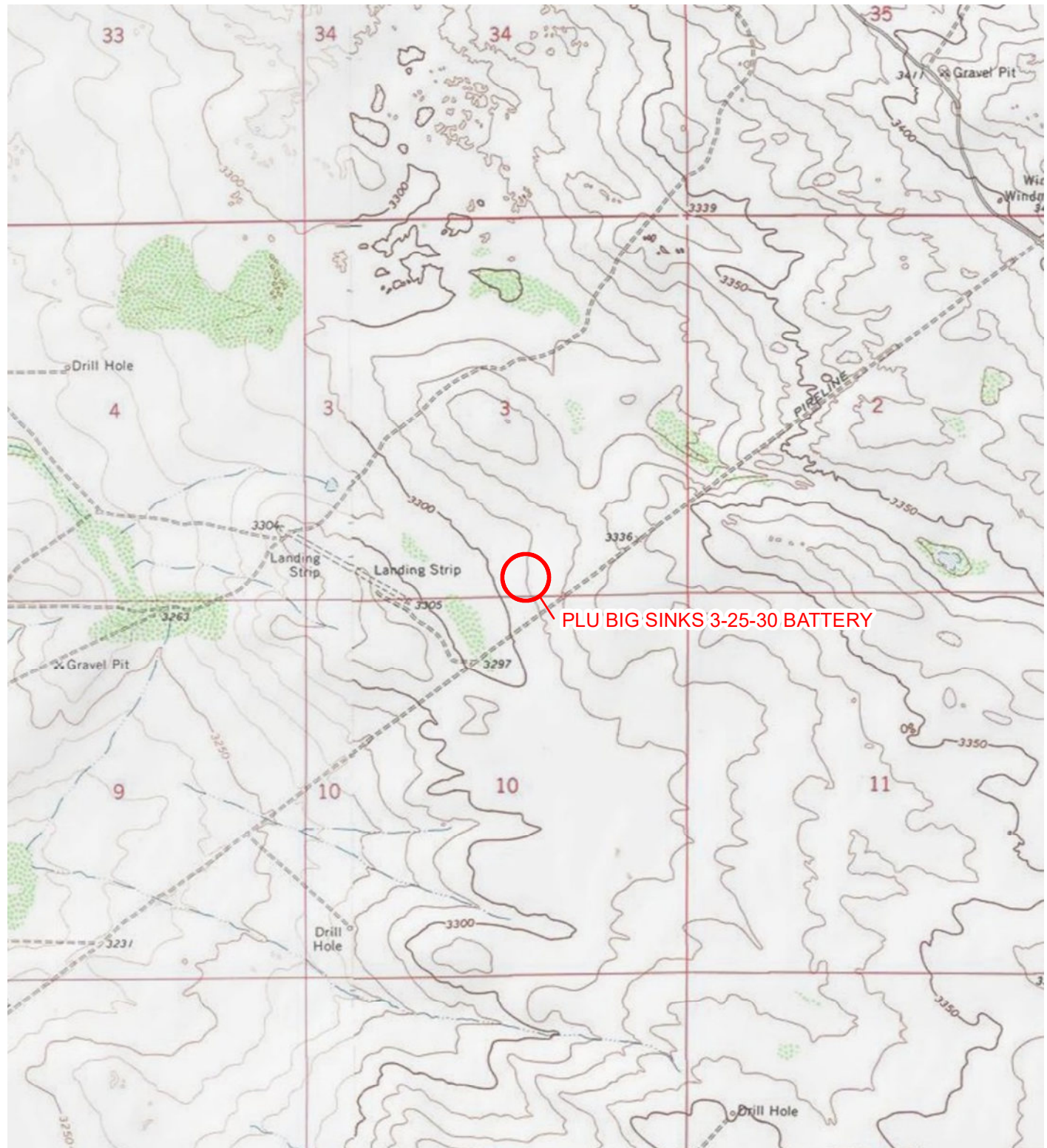
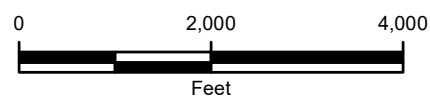
**LEGEND**

IMAGE COURTESY OF ESRI/USGS

○ SITE LOCATION



NOTE: REMEDIATION PERMIT
NUMBERS 2RP-4526 & 2RP-4744

FIGURE 1
SITE LOCATION MAP
PLU BIG SINKS 3-25-30 BATTERY
UNIT O SEC 3 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



P:\XTO Energy\GIS\MXD\012917052_PLU BIG SINKS\012917052_FIG01_SL_2017.mxd

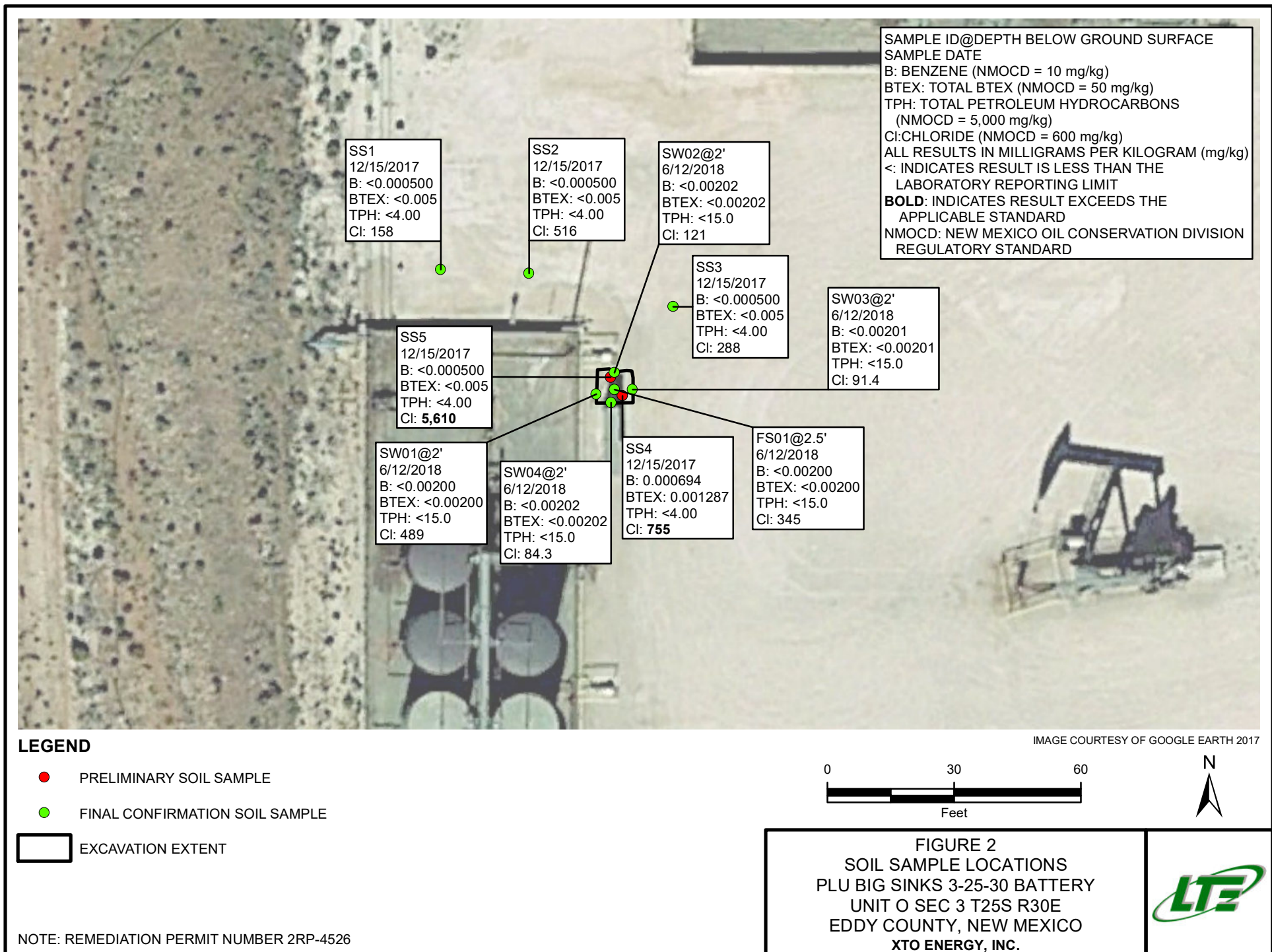






IMAGE COURTESY OF GOOGLE EARTH 2017

LEGEND

-  EXCAVATION EXTENT (REMEDIATION PERMIT NUMBER 2RP-4744)
-  EXCAVATION EXTENT (REMEDIATION PERMIT NUMBER 2RP-4526)

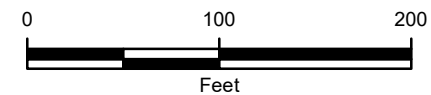


FIGURE 3
SITE MAP
PLU BIG SINKS 3-25-30 BATTERY
UNIT O SEC 3 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



P:\XTO Energy\GIS\IMXD\012917052_PLU BIG SINKS\012917052_FIG02_SITE_2018_ZOOM OUT.mxd

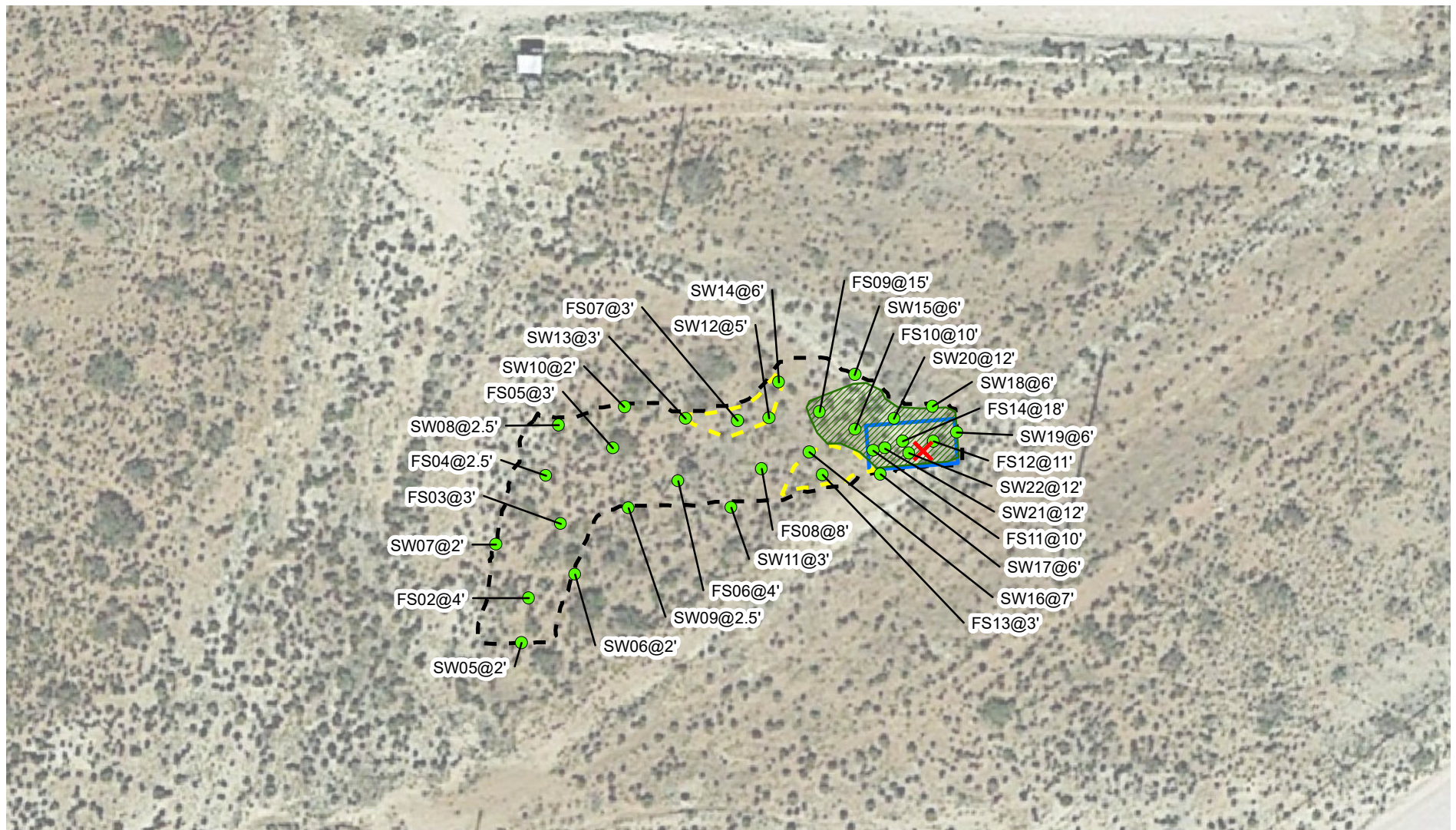


IMAGE COURTESY OF GOOGLE EARTH 2017

LEGEND

- FINAL CONFIRMATION SOIL SAMPLE
- ✗ RELEASE LOCATION
- - - EXCAVATION EXTENT
- - - SHALLOW EXCAVATION DUE TO OUTCROP (3' BGS)
- ▭ PRVIOUSLY OPENED EXCAVATION (30' X 15' X 6')
- ▨ DEEP EXCAVATION (>10' BGS)

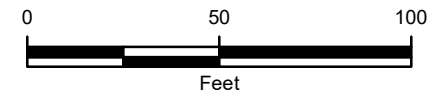


FIGURE 4
SOIL SAMPLE LOCATIONS - PASTURE
PLU BIG SINKS 3-25-30 BATTERY
UNIT O SEC 3 T25S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



NOTE: REMEDIATION PERMIT NUMBER 2RP-4744

P:\XTO Energy\GIS\MXD\012917052_PLU BIG SINKS\012917052_FIG04_SITE_2018_4744.mxd

TABLES



TABLE 1
SOIL ANALYTICAL RESULTS

PLU BIG SINKS 3-25-30 TANK BATTERY
REMEDATION PERMIT NUMBERS 2RP-4526 and 2RP-4744
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

Sample Name	Sample Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	C6-C10 Gasoline Range Organics (mg/kg)	C10-C28 Diesel Range Organics (mg/kg)	C28-C40 Motor Oil Range Organics (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
2RP-4526												
SS1	0.5	12/15/2017	<0.000500	<0.00500	<0.000500	<0.00150	<0.00500	<0.100	<4.00	<4.00	<4.00	158
SS2	0.5	12/15/2017	<0.000500	<0.00500	<0.000500	<0.00150	<0.00500	<0.100	<4.00	<4.00	<4.00	516
SS3	0.5	12/15/2017	<0.000500	<0.00500	<0.000500	<0.00150	<0.00500	<0.100	<4.00	<4.00	<4.00	288
SS4	0.5	12/15/2017	0.000694	<0.00500	0.000593	<0.00150	0.001287	<0.100	<4.00	<4.00	<4.00	755
SS5	0.5	12/15/2017	<0.000500	<0.00500	<0.000500	<0.00150	<0.00500	<0.100	<4.00	<4.00	<4.00	5,610
FS01 @ 2.5' bgs	2.5	6/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	345
SW01 @ 2'	2	6/12/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	489
SW02	2	6/12/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	121
SW03	2	6/12/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	91.4
SW04	2	6/12/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	84.3
2RP-4744												
FS02	4	6/22/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	76.3
SW05	2	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	6.67
SW06	2	6/22/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<4.98
FS03	3	6/22/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	13.3
SW07	2	6/22/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	<14.9	<14.9	<14.9	98.5
FS04	2.5	6/22/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	30.5
SW08	2.5	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	7.03
FS05	3	6/22/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	<14.9	<14.9	<14.9	45.5
SW09	2.5	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	36.8
FS06	4	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	12.3
SW10	2	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	121
FS07	3	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	17.9
SW11	3	6/22/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	75.3
FS08	8	6/22/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	309
SW12	5	6/22/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	217
SW13	3	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	47.2
SW14	6	6/22/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	<14.9	<14.9	<14.9	239
SW15	6	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	389
FS09	15	6/22/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	160
FS10	10	6/22/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	22.6
SW16	7	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	318
SW17	6	6/22/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	148
FS11	10	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	50.2
FS12	11	6/22/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<4.97
SW18	6	6/22/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	109
SW19	6	6/22/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	7.54
FS13	3	6/22/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	80.1
FS14	18	7/17/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	196
SW20	12	7/17/2018	<0.0401	<0.0401	<0.0401	<0.0401	<0.0401	<15.0	<15.0	<15.0	<15.0	204
SW21	12	7/17/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	224
SW22	12	7/17/2018	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	238
NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	5,000	600

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

mg/kg - milligrams per kilogram

NE - not established

NMOCD - New Mexico Oil Conservation Division

TPH - total petroleum hydrocarbons

< - indicates result is below laboratory reporting limits

Bold indicates result exceeds the applicable regulatory standard.



ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-4526 and 2RP-4744)



NM OIL CONSERVATION

ARTESIA DISTRICT

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

DEC 15 2017

Form C-141
Revised April 3, 2017

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

Submit 1 Copy to appropriate District Office in
RECEIVED accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NAB1736038289 OPERATOR ☒ Initial Report ☐ Final Report

Name of Company XTO Energy / <i>210737 BOPCO</i>	Contact Kyle Littrell
Address 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No. 432-221-7331
Facility Name: PLU Big Sinks 3-25-30 Battery (API for PLU CVX JV BS #016H)	Facility Type Exploration and Production

Surface Owner Federal	Mineral Owner Federal	API No. 30-015-40581
-----------------------	-----------------------	----------------------

LOCATION OF RELEASE

Unit Letter O	Section 3	Township 25S	Range 30E	Feet from the 200	North/South Line south	Feet from the 2200	East/West Line east	County Eddy
------------------	--------------	-----------------	--------------	----------------------	---------------------------	-----------------------	------------------------	----------------

Latitude 32.152967° Longitude -103.867559° NAD83

NATURE OF RELEASE

Type of Release Produced Water and Crude Oil	Volume of Release 25 bbls	Volume Recovered 24 bbls
Source of Release Produced water line	Date and Hour of Occurrence 12/1/2017 time unknown	Date and Hour of Discovery 12/1/2017 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/Crystal Weaver (NMOCD), Shelly Tucker/Jim Amos (BLM)	
By Whom? Jacob Foust	Date and Hour 12/1/2017 3:34 pm	
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.* The produced water line developed a hole within the area of lined containment. The line was isolated and repaired.		
Describe Area Affected and Cleanup Action Taken.* The release affected the tank battery lined containment and approximately 390 square feet of the well pad. Free standing fluids were recovered. One call was initiated and XTO mapped the extent of the release visually then excavated impacted material from pad surface. Soil samples were collected to confirm compliance with NMOCD site specific standards. Impacted material was taken to Lea Land for disposal. XTO will provide a closure report documenting soil removal and disposal, confirmation soil sampling results, and any other site remediation activities to the NMOCD upon receipt of laboratory analytical results. Liner integrity will be addressed by Maintenance Foreman and repairs will be scheduled to restore impermeability.		
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: <i>[Signature]</i>	OIL CONSERVATION DIVISION	
Printed Name: Kyle Littrell	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: Environmental Coordinator	Approval Date: 12/26/17	Expiration Date: N/A
E-mail Address: Kyle.Littrell@xtoenergy.com	Conditions of Approval: <i>see attached</i>	Attached <input checked="" type="checkbox"/> <i>22P4526</i>
Date: 12/15/2017 Phone: 432-221-7331		

* Attach Additional Sheets If Necessary

12/24/17 AB

Operator/Responsible Party,

The OCD has received the form C-141 you provided on **12/15/17** regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-45216 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District II office in Artesia on or before 1/15/18. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

jim.griswold@state.nm.us

Incident ID	
District RP	2RP-4526
Facility ID	
Application ID	

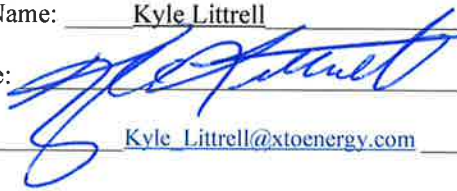
Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of 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 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Coordinator
Signature:  Date: 10/18/2018
email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

PHOTOGRAPHIC LOG



Photograph 1: View north west of equipment and excavation.



Photograph 2: View north east of excavation.

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

MAY 09 2018

Form C-141
Revised April 3, 2017

Oil Conservation Division DISTRICT II-ARTESIA
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

NAB1813452382 OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: XTO Energy [BOPD 260737] Contact: Kyle Littrell

Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220 Telephone No: 432-221-7331

Facility Name: PLU Big Sinks 3-25-30 Battery (API for PLU CVX JV BS #016H) Facility Type: Exploration and Production

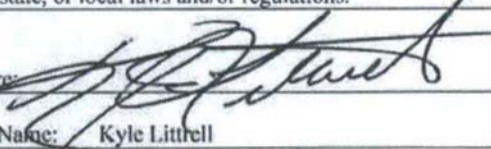
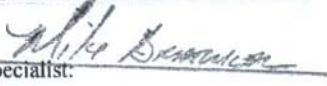
Surface Owner: Federal Mineral Owner: Federal API No: 30-015-40581

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	3	25S	30E	200	South	2200	East	Eddy

Latitude 32.152967 Longitude -103.867559 NAD83

NATURE OF RELEASE

Type of Release Produced water and oil	Volume of Release 290 bbl produced water, 1 bbl oil	Volume Recovered 269 bbl produced water, 1 bbl oil
Source of Release Riser	Date and Hour of Occurrence 4/25/2018, AM	Date and Hour of Discovery 4/25/2018, 3:30 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher and Crystal Weaver (NMOCD), Tucker Shelly and Jim Amos (BLM)	
By Whom? Kyle Littrell	Date and Hour: 4/26/2018, 7:50 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 corrosion on a riser. Line was shut in until repairs could be completed.		
Describe Area Affected and Cleanup Action Taken.* Release occurred in excavated area around steel riser. The excavated area filled with produced water, then flowed out westward into the pasture. Upon discovery, vacuum trucks were immediately dispatched and recovered 270bbl of 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: 	OIL CONSERVATION DIVISION	
Printed Name: Kyle Littrell	Signed By:  Approved by Environmental Specialist:	
Title: Environmental Coordinator	Approval Date: 5/14/18	Expiration Date: N/A
E-mail Address: Kyle.Littrell@xtoenergy.com	Conditions of Approval: See attached	
Date: 5/10/2018 Phone: 432-221-7331	Attached <input type="checkbox"/> JRP-4744	

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 5/10/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP4744 has been assigned. Please refer to this case number in all future correspondence.

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 6/10/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

jim.griswold@state.nm.us

Incident ID	
District RP	2RP - 4744
Facility ID	
Application ID	

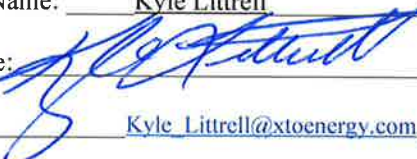
Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of 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 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Coordinator
Signature:  Date: 10/18/2018
email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

PHOTOGRAPHIC LOG



Photograph 1: View north of excavation.



Photograph 2: View northwest of excavation.

ATTACHMENT 2: LABORATORY ANALYTICAL REPORTS





ANALYTICAL REPORT

December 28, 2017

**XTO Energy- Delaware Division**

Sample Delivery Group: L958622
Samples Received: 12/19/2017
Project Number: 30-015-40581
Description:
Site: PLU BIG SINKS 3-25-30
Report To: Kyle Littrell
6401 N Holiday Hill Rd
Suite 200
Midland, TX 79707

Entire Report Reviewed By:

Nancy McLain

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
PERAW-121517-1204 L958622-01	5	
PERAW-121517-1207 L958622-02	6	⁴ Cn
PERAW-121517-1209 L958622-03	7	⁵ Sr
PERAW-121517-1211 L958622-04	8	
PERAW-121517-1214 L958622-05	9	⁶ Qc
Qc: Quality Control Summary	10	⁷ Gl
Total Solids by Method 2540 G-2011	10	
Wet Chemistry by Method 300.0	11	⁸ Al
Volatile Organic Compounds (GC) by Method 8015/8021	12	
Semi-Volatile Organic Compounds (GC) by Method 8015	14	⁹ Sc
Gl: Glossary of Terms	15	
Al: Accreditations & Locations	16	
Sc: Sample Chain of Custody	17	

PERAW-121517-1204 L958622-01 Solid

Collected by
Aaron Williams

Collected date/time
12/15/17 12:04

Received date/time
12/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1056278	1	12/22/17 14:29	12/22/17 14:39	KDW
Wet Chemistry by Method 300.0	WG1057208	1	12/26/17 16:55	12/26/17 19:18	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1056022	1	12/20/17 09:58	12/20/17 19:45	JAH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1056450	1	12/24/17 01:11	12/26/17 23:23	ACM

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

PERAW-121517-1207 L958622-02 Solid

Collected by
Aaron Williams

Collected date/time
12/15/17 12:07

Received date/time
12/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1056278	1	12/22/17 14:29	12/22/17 14:39	KDW
Wet Chemistry by Method 300.0	WG1057208	1	12/26/17 16:55	12/26/17 19:27	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1056022	1	12/20/17 09:58	12/20/17 20:09	JAH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1056450	1	12/24/17 01:11	12/27/17 00:05	ACM

PERAW-121517-1209 L958622-03 Solid

Collected by
Aaron Williams

Collected date/time
12/15/17 12:09

Received date/time
12/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1056278	1	12/22/17 14:29	12/22/17 14:39	KDW
Wet Chemistry by Method 300.0	WG1057208	1	12/26/17 16:55	12/26/17 19:35	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1056022	1	12/20/17 09:58	12/20/17 20:33	JAH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1056450	1	12/24/17 01:11	12/27/17 00:19	ACM

PERAW-121517-1211 L958622-04 Solid

Collected by
Aaron Williams

Collected date/time
12/15/17 12:11

Received date/time
12/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1056278	1	12/22/17 14:29	12/22/17 14:39	KDW
Wet Chemistry by Method 300.0	WG1057208	1	12/26/17 16:55	12/26/17 19:44	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1056022	1	12/20/17 09:58	12/20/17 20:57	JAH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1056450	1	12/24/17 01:11	12/27/17 00:34	ACM

PERAW-121517-1214 L958622-05 Solid

Collected by
Aaron Williams

Collected date/time
12/15/17 12:14

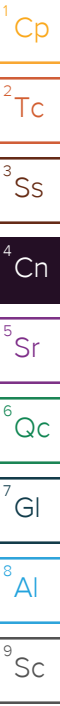
Received date/time
12/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1056278	1	12/22/17 14:29	12/22/17 14:39	KDW
Wet Chemistry by Method 300.0	WG1057208	10	12/26/17 16:55	12/26/17 19:52	DR
Volatile Organic Compounds (GC) by Method 8015/8021	WG1056022	1	12/20/17 09:58	12/20/17 21:22	JAH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1056450	1	12/24/17 01:11	12/27/17 00:48	ACM

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Nancy McLain
Technical Service Representative



Collected date/time: 12/15/17 12:04

L958622

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	81.7		1	12/22/2017 14:39	WG1056278

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	158		10.0	1	12/26/2017 19:18	WG1057208

5 Sr

6 Qc

7 Gl

8 Al

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	12/20/2017 19:45	WG1056022
Toluene	ND		0.00500	1	12/20/2017 19:45	WG1056022
Ethylbenzene	ND		0.000500	1	12/20/2017 19:45	WG1056022
Total Xylene	ND		0.00150	1	12/20/2017 19:45	WG1056022
TPH (GC/FID) Low Fraction	ND		0.100	1	12/20/2017 19:45	WG1056022
(S) a,a,a-Trifluorotoluene(FID)	99.0		77.0-120		12/20/2017 19:45	WG1056022
(S) a,a,a-Trifluorotoluene(PID)	101		75.0-128		12/20/2017 19:45	WG1056022

9 Sc

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	12/26/2017 23:23	WG1056450
C28-C40 Oil Range	ND		4.00	1	12/26/2017 23:23	WG1056450
(S) o-Terphenyl	53.9		18.0-148		12/26/2017 23:23	WG1056450

Collected date/time: 12/15/17 12:07

L958622

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	89.2		1	12/22/2017 14:39	WG1056278

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	516		10.0	1	12/26/2017 19:27	WG1057208

5 Sr

6 Qc

7 Gl

8 Al

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	12/20/2017 20:09	WG1056022
Toluene	ND		0.00500	1	12/20/2017 20:09	WG1056022
Ethylbenzene	ND		0.000500	1	12/20/2017 20:09	WG1056022
Total Xylene	ND		0.00150	1	12/20/2017 20:09	WG1056022
TPH (GC/FID) Low Fraction	ND		0.100	1	12/20/2017 20:09	WG1056022
(S) a,a,a-Trifluorotoluene(FID)	98.9		77.0-120		12/20/2017 20:09	WG1056022
(S) a,a,a-Trifluorotoluene(PID)	102		75.0-128		12/20/2017 20:09	WG1056022

9 Sc

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	12/27/2017 00:05	WG1056450
C28-C40 Oil Range	ND		4.00	1	12/27/2017 00:05	WG1056450
(S) o-Terphenyl	52.1		18.0-148		12/27/2017 00:05	WG1056450

Collected date/time: 12/15/17 12:09

L958622

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	80.7		1	12/22/2017 14:39	WG1056278

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	288		10.0	1	12/26/2017 19:35	WG1057208

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	12/20/2017 20:33	WG1056022
Toluene	ND		0.00500	1	12/20/2017 20:33	WG1056022
Ethylbenzene	ND		0.000500	1	12/20/2017 20:33	WG1056022
Total Xylene	ND		0.00150	1	12/20/2017 20:33	WG1056022
TPH (GC/FID) Low Fraction	ND		0.100	1	12/20/2017 20:33	WG1056022
(S) a,a,a-Trifluorotoluene(FID)	97.4		77.0-120		12/20/2017 20:33	WG1056022
(S) a,a,a-Trifluorotoluene(PID)	101		75.0-128		12/20/2017 20:33	WG1056022

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	12/27/2017 00:19	WG1056450
C28-C40 Oil Range	ND		4.00	1	12/27/2017 00:19	WG1056450
(S) o-Terphenyl	52.3		18.0-148		12/27/2017 00:19	WG1056450

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	82.9		1	12/22/2017 14:39	WG1056278

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	755		10.0	1	12/26/2017 19:44	WG1057208

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	0.000694	<u>B</u>	0.000500	1	12/20/2017 20:57	WG1056022
Toluene	ND		0.00500	1	12/20/2017 20:57	WG1056022
Ethylbenzene	0.000593		0.000500	1	12/20/2017 20:57	WG1056022
Total Xylene	ND		0.00150	1	12/20/2017 20:57	WG1056022
TPH (GC/FID) Low Fraction	ND		0.100	1	12/20/2017 20:57	WG1056022
(S) a,a,a-Trifluorotoluene(FID)	96.6		77.0-120		12/20/2017 20:57	WG1056022
(S) a,a,a-Trifluorotoluene(PID)	98.7		75.0-128		12/20/2017 20:57	WG1056022

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	12/27/2017 00:34	WG1056450
C28-C40 Oil Range	ND		4.00	1	12/27/2017 00:34	WG1056450
(S) o-Terphenyl	51.1		18.0-148		12/27/2017 00:34	WG1056450

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc

Collected date/time: 12/15/17 12:14

L958622

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	84.8		1	12/22/2017 14:39	WG1056278

1 Cp

2 Tc

3 Ss

4 Cn

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	5610		100	10	12/26/2017 19:52	WG1057208

5 Sr

6 Qc

7 Gl

8 Al

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	12/20/2017 21:22	WG1056022
Toluene	ND		0.00500	1	12/20/2017 21:22	WG1056022
Ethylbenzene	ND		0.000500	1	12/20/2017 21:22	WG1056022
Total Xylene	ND		0.00150	1	12/20/2017 21:22	WG1056022
TPH (GC/FID) Low Fraction	ND		0.100	1	12/20/2017 21:22	WG1056022
(S) a,a,a-Trifluorotoluene(FID)	96.2		77.0-120		12/20/2017 21:22	WG1056022
(S) a,a,a-Trifluorotoluene(PID)	98.9		75.0-128		12/20/2017 21:22	WG1056022

9 Sc

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	12/27/2017 00:48	WG1056450
C28-C40 Oil Range	ND		4.00	1	12/27/2017 00:48	WG1056450
(S) o-Terphenyl	58.8		18.0-148		12/27/2017 00:48	WG1056450

Method Blank (MB)

(MB) R3275453-1 12/22/17 14:39

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Total Solids	0			

L958626-03 Original Sample (OS) • Duplicate (DUP)

(OS) L958626-03 12/22/17 14:39 • (DUP) R3275453-3 12/22/17 14:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Total Solids	80.8	81.9	1	1		5

Laboratory Control Sample (LCS)

(LCS) R3275453-2 12/22/17 14:39

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Total Solids	50.0	50.0	100	85-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 300.0

[L958622-01,02,03,04,05](#)

Method Blank (MB)

(MB) R3275840-1 12/26/17 18:35

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloride	U		0.795	10.0

L959675-01 Original Sample (OS) • Duplicate (DUP)

(OS) L959675-01 12/26/17 20:01 • (DUP) R3275840-4 12/26/17 20:09

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	109	126	1	14.5		20

L959675-06 Original Sample (OS) • Duplicate (DUP)

(OS) L959675-06 12/26/17 21:26 • (DUP) R3275840-7 12/26/17 21:34

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	52.4	51.1	1	2.55		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3275840-2 12/26/17 18:44 • (LCSD) R3275840-3 12/26/17 18:53

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chloride	200	197	193	98.7	96.4	90-110			2.36	20

L959675-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L959675-03 12/26/17 20:43 • (MS) R3275840-5 12/26/17 20:52 • (MSD) R3275840-6 12/26/17 21:00

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chloride	500	38.6	580	540	108	100	1	80-120			7.13	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Volatile Organic Compounds (GC) by Method 8015/8021

L958622-01,02,03,04,05

Method Blank (MB)

(MB) R3274822-5 12/20/17 17:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	0.000214	U	0.000120	0.000500
Toluene	0.000564	U	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	99.9			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	105			75.0-128

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3274822-1 12/20/17 15:57 • (LCSD) R3274822-2 12/20/17 16:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0572	0.0573	114	115	71.0-121			0.259	20
Toluene	0.0500	0.0587	0.0580	117	116	72.0-120			1.17	20
Ethylbenzene	0.0500	0.0573	0.0570	115	114	76.0-121			0.583	20
Total Xylene	0.150	0.177	0.176	118	117	75.0-124			0.227	20
(S) a,a,a-Trifluorotoluene(FID)				99.8	99.8	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				102	101	75.0-128				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3274822-3 12/20/17 16:46 • (LCSD) R3274822-4 12/20/17 17:10

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	6.00	5.90	109	107	70.0-136			1.61	20
(S) a,a,a-Trifluorotoluene(FID)				107	107	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				120	119	75.0-128				

Volatile Organic Compounds (GC) by Method 8015/8021 [L958622-01,02,03,04,05](#)

L958719-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L958719-01 12/20/17 23:47 • (MS) R3274822-6 12/21/17 00:11 • (MSD) R3274822-7 12/21/17 00:35

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	ND	0.0261	0.0272	52.1	54.4	1	10.0-146			4.33	29
Toluene	0.0500	ND	0.0259	0.0275	50.7	53.7	1	10.0-143			5.73	30
Ethylbenzene	0.0500	ND	0.0267	0.0286	52.8	56.8	1	10.0-147			7.16	31
Total Xylene	0.150	0.00187	0.0826	0.0878	53.8	57.3	1	10.0-149	J6	J6	6.10	30
(S) a,a,a-Trifluorotoluene(FID)					97.3	95.7		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					100	98.6		75.0-128				

L958719-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L958719-01 12/20/17 23:47 • (MS) R3274822-8 12/21/17 01:00 • (MSD) R3274822-9 12/21/17 01:24

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	1.98	2.31	34.9	40.9	1	10.0-147			15.2	30
(S) a,a,a-Trifluorotoluene(FID)					88.8	95.4		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					98.6	99.9		75.0-128				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Semi-Volatile Organic Compounds (GC) by Method 8015

[L958622-01,02,03,04,05](#)

Method Blank (MB)

(MB) R3275707-1 12/26/17 13:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	58.2			18.0-148

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3275707-2 12/26/17 13:56 • (LCSD) R3275707-3 12/26/17 14:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	60.0	34.7	32.4	57.8	54.1	50.0-150			6.59	20
(S) o-Terphenyl				58.5	55.7	18.0-148				

L958622-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L958622-01 12/26/17 23:23 • (MS) R3275707-4 12/26/17 23:36 • (MSD) R3275707-5 12/26/17 23:50

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	60.0	ND	36.0	38.5	59.9	64.2	1	50.0-150			6.84	20
(S) o-Terphenyl					55.9	58.8		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

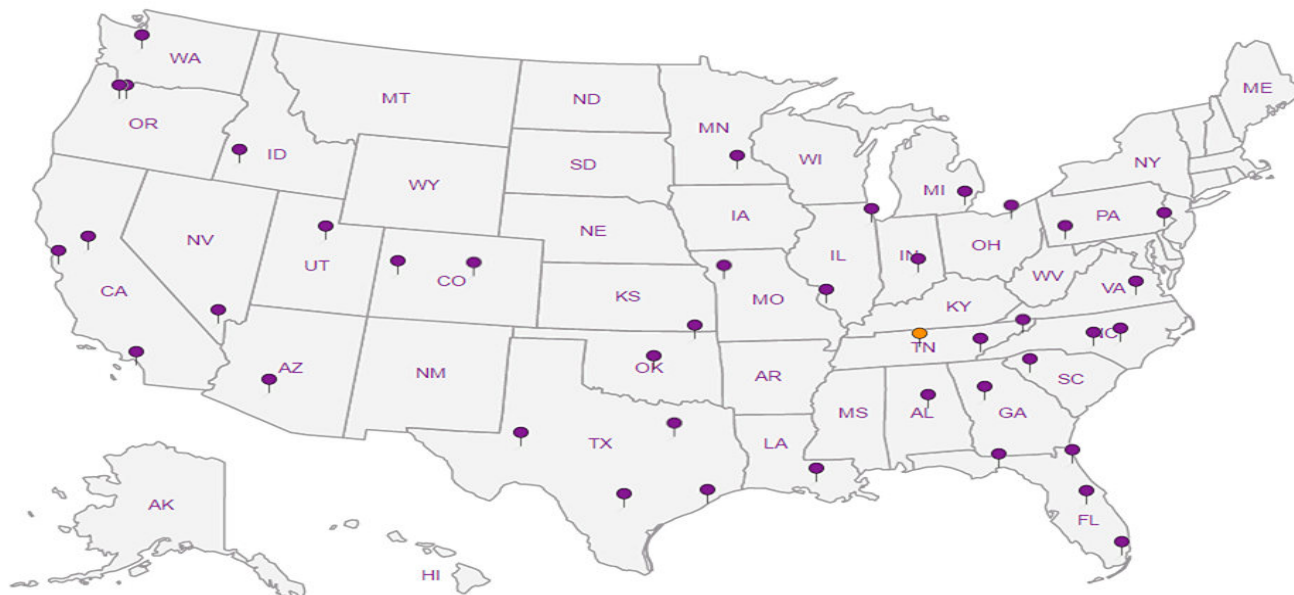
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	IN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



* Sample ID will be the office and sampler-date-military time-sampler initials FARJM-MMDDYY-1200

20 over 50

E167

ESC LAB SCIENCES Cooler Receipt Form			
Client:	XTORN ^M	SDG#	L958622
Cooler Received/Opened On:	12/14 /17	Temperature:	2.0
Received by : Christian Kacar			
Signature: <i>[Signature]</i>			
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	/		
COC Signed / Accurate?		/	
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?		/	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Jeremy W. Watkins

ESC Lab Sciences Non-Conformance Form

Login #: L958622	Client: XTORNM	Date: 12/19/17	Evaluated by: Jeremy
------------------	----------------	----------------	----------------------

Non-Conformance (check applicable items)

Sample Integrity	Chain of Custody Clarification	
Parameter(s) past holding time	x Login Clarification Needed	If Broken Container:
Improper temperature	Chain of custody is incomplete	Insufficient packing material around container
Improper container type	Please specify Metals requested.	Insufficient packing material inside cooler
Improper preservation	Please specify TCLP requested.	Improper handling by carrier (FedEx / UPS / Courier)
Insufficient sample volume.	Received additional samples not listed on coc.	Sample was frozen
Sample is biphasic.	Sample ids on containers do not match ids on coc	Container lid not intact
Vials received with headspace.	Trip Blank not received.	If no Chain of Custody:
Broken container	Client did not "X" analysis.	Received by:
Broken container:	Chain of Custody is missing	Date/Time:
Sufficient sample remains		Temp./Cont. Rec./pH:
		Carrier:
		Tracking#

Login Comments: What TPH?

Client informed by:	Call	Email	Voice Mail	Date: 12/19/17	Time: 1631
TSR Initials: DR	Client Contact:				

Login Instructions:

XTORNM-LITTRELL
TS
Chloride-300
BTEXGRO
DRORLA

This E-mail and any attached files are confidential, and may be copyright protected. If you are not the addressee, any dissemination of this communication is strictly prohibited. If you have received this message in error, please contact the sender immediately and delete/destroy all information received.

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS

Action 504404

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 504404
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAB1736038289
Incident Name	NAB1736038289 POKER LAKE CVX JV BS #016H @ 30-015-40581
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Well	[30-015-40581] POKER LAKE CVX JV BS #016H

Location of Release Source	
<i>Please answer all the questions in this group.</i>	
Site Name	POKER LAKE CVX JV BS #016H
Date Release Discovered	12/01/2017
Surface Owner	Federal

Incident Details	
<i>Please answer all the questions in this group.</i>	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
<i>Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.</i>	
Crude Oil Released (bbls) Details	Cause: Equipment Failure Other (Specify) Crude Oil Released: 0 BBL Recovered: 0 BBL Lost: 0 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure Other (Specify) Produced Water Released: 25 BBL Recovered: 24 BBL Lost: 1 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 2

Action 504404

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 504404
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

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	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Robert Woodall Title: Environmental Analyst Email: robert.d.woodall@exxonmobil.com Date: 09/09/2025
--	---

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 3

Action 504404

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 504404
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
<i>Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	516
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	0
GRO+DRO (EPA SW-846 Method 8015M)	0
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
On what estimated date will the remediation commence	12/17/2017
On what date will (or did) the final sampling or liner inspection occur	06/12/2018
On what date will (or was) the remediation complete(d)	06/12/2018
What is the estimated surface area (in square feet) that will be reclaimed	99
What is the estimated volume (in cubic yards) that will be reclaimed	11
What is the estimated surface area (in square feet) that will be remediated	99
What is the estimated volume (in cubic yards) that will be remediated	11
<i>These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.</i>	
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 4

Action 504404

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 504404
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Remediation Plan (continued)	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	fEEM0112334510 HALFWAY DISPOSAL AND LANDFILL
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	Not answered.
OR is the off-site disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Robert Woodall Title: Environmental Analyst Email: robert.d.woodall@exxonmobil.com Date: 09/09/2025
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 5

Action 504404

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 504404
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 6

Action 504404

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 504404
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	504008
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	09/10/2025
What was the (estimated) number of samples that were to be gathered	5
What was the sampling surface area in square feet	400

Remediation Closure Request	
<i>Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.</i>	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	99
What was the total volume (cubic yards) remediated	11
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	99
What was the total volume (in cubic yards) reclaimed	11
Summarize any additional remediation activities not included by answers (above)	Excavation occurred on pad to address impacted soil identified during Site assessment activities. All final confirmation soil samples meet the strictest Closure Criteria.
<i>The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (in .pdf format) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.</i>	
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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.	
I hereby agree and sign off to the above statement	Name: Robert Woodall Title: Environmental Analyst Email: robert.d.woodall@exxonmobil.com Date: 09/09/2025

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 7

Action 504404

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 504404
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 504404

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 504404
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
nvez	None	9/26/2025