



LT Environmental, Inc.

3300 North "A" Street  
Building 1, Unit 103  
Midland, Texas 79705  
432.704.5178

November 15, 2019

Mr. Bradford Billings  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive, #3  
Santa Fe, New Mexico 87505

**RE: Closure Request  
Goldenchild Central Tank Battery  
Remediation Permit Numbers 2RP-4751  
Eddy County, New Mexico**

Dear Mr. Billings:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request report detailing excavation and soil sampling activities at the Goldenchild Central Tank Battery (Site), located in Unit P, Section 6, Township 25 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the excavation and soil sampling activities was to address impacts to soil, resulting from a produced water release at the Site.

The release is included in the Compliance Agreement for Remediation for Historical Releases (Compliance Agreement) between XTO and the New Mexico Oil Conservation Division (NMOCD) effective November 13, 2018. The purpose of the Compliance Agreement is to ensure reportable releases that occurred prior to August 14, 2018, where XTO is responsible for the corrective action, comply with Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) as amended on August 14, 2018. The release is categorized as a Tier IV site in the Compliance Agreement, meaning the release occurred prior to August 14, 2018, the effective date of 19.15.29 NMAC; however, remediation was ongoing. Based on the laboratory analytical results for soil samples collected at the Site, XTO is submitting this Closure Request, describing remediation activities that have occurred and requesting no further action for the release event.

## RELEASE BACKGROUND

On April 30, 2018, a corrosion hole developed in the discharge line of the injection pump. Approximately 8.5 barrels (bbls) of produced water were released onto the surface of the well pad. A vacuum truck recovered 8 bbls of free-standing fluid. The discharge line was repaired, and the facility was returned to production. XTO reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141) on May 15, 2018, and was assigned Remediation Permit (RP) Number 2RP-4751 (Attachment 1).





Billings, B.  
Page 2

## SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be between 51 and 100 feet below ground surface (bgs) based on the nearest water well data. The closest permitted water well with depth to water data is New Mexico Office of the State Engineer (NM OSE) Well #C01880, located approximately 2,790 feet northwest of the Site. According to the NM OSE database, the well was installed and depth to water was measured in 1979. Based on the age of the well, LTE field personnel field-verified the presence or absence of the well. The well could not be located within an approximate 1,000 foot radius of the coordinates provided by the NM OSE. As part of remediation efforts at a nearby site, Corral Canyon #1H flow line (2RP-5201), LTE installed six monitoring wells (MW01 through MW06) to assess depth to groundwater. The groundwater monitoring wells are located approximately 5,539 feet southeast of the Site. Static water level measured in monitoring wells MW01 through MW06 on September 13, 2019, ranged from 57.26 feet bgs in monitoring well MW04 to 62.29 feet bgs in monitoring well MW02 with an average depth to water of 58.80 feet bgs. The depth to water measurements are provided in the table below and the location of the monitoring wells is identified on Figure 1.

### MONITORING WELL INFORMATION

Sample Name	Total Depth (feet bgs)	Depth to Water (feet bgs)	Sample Date
MW01	68.44	58.17	09/13/2019
MW02	68.10	62.29	09/13/2019
MW03	75.58	58.30	09/13/2019
MW04	69.08	57.26	09/13/2019
MW05	64.80	58.54	09/13/2019
MW06	64.11	58.25	09/13/2019

**Notes:**

bgs – below ground surface

Based on depth to water measured recently in the nearby monitoring wells, depth to water at the Site is estimated to be between 51 and 100 feet bgs. The closest continuously flowing water or significant watercourse to the Site is the Pecos River, located approximately 1,856 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a medium-potential karst area.





## CLOSURE CRITERIA

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg;
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg;
- TPH: 2,500 mg/kg; and
- Chloride: 10,000 mg/kg.

## SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On August 23, 2018, LTE personnel was at the Site to oversee excavation of impacted soil based on the documented release area, field screening activities, and visual observations. To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Excavation of impacted soil was conducted prior to the Compliance Agreement and prior to the implementation of the August 14, 2018, NMOCD modification to 19.15.29. Following removal of impacted soil, excavation confirmation samples were collected as discrete samples instead of composite samples. The area of impacted soil could be visually discerned; therefore, LTE applied a judgmental sampling protocol, selecting sample locations based on visual observation to represent the floor and sidewalls of the excavation. The sampling protocol complied with Guidance on Choosing a Sampling Design for Environmental Data Collection for Use in Developing a Quality Assurance Project Plan, EPA QA/G-5S, December 2002. Soil samples SW01 through SW04 were collected from the sidewalls of the excavation at depths of 1 foot or 1.5 feet bgs. Soil sample FS01 was collected from the floor of the excavation at a depth of 2.5 feet bgs. The excavation extent and excavation soil sample locations are depicted on Figure 2. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2.

The excavation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0.



Billings, B.  
Page 4

The excavation measured approximately 500 square feet in area. A total of approximately 60 cubic yards of impacted soil were removed from the excavation. The impacted soil was transported and properly disposed of at the Lea Land Landfill located in Hobbs, New Mexico.

### ANALYTICAL RESULTS

Laboratory analytical results for excavation soil samples SW01 through SW04 and FS01 indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical report is included as Attachment 3.

### CLOSURE REQUEST

Impacted soil was excavated from the Site to address the April 30, 2018, release of produced water at the Site. The majority of the released fluids were recovered during initial response efforts. Laboratory analytical results for the excavation soil samples collected from the final excavation extent, indicated that BTEX, GRO/DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Based on the excavation soil sample analytical results, no further remediation was required.

Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for RP Number 2RP-4751. XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included in Attachment 1.

If you have any questions or comments, please do not hesitate to contact Ms. Ashley Ager at (970) 385-1096.

Sincerely,

LT ENVIRONMENTAL, INC.

Handwritten signature of Aimee Cole in black ink.

Aimee Cole  
Project Environmental Scientist

Handwritten signature of Ashley L. Ager in black ink.

Ashley L. Ager, P.G.  
Senior Geologist

cc: Kyle Littrell, XTO  
Mike Bratcher, NMOCD  
Ryan Mann, State Land Office





Billings, B.  
Page 5

Attachments:

- Figure 1 Site Location Map
- Figure 2 Excavation Soil Sample Locations
- Table 1 Soil Analytical Results
- Attachment 1 Initial/Final NMOCD Form C-141 (2RP-4751)
- Attachment 2 Photographic Log
- Attachment 3 Laboratory Analytical Reports



FIGURES



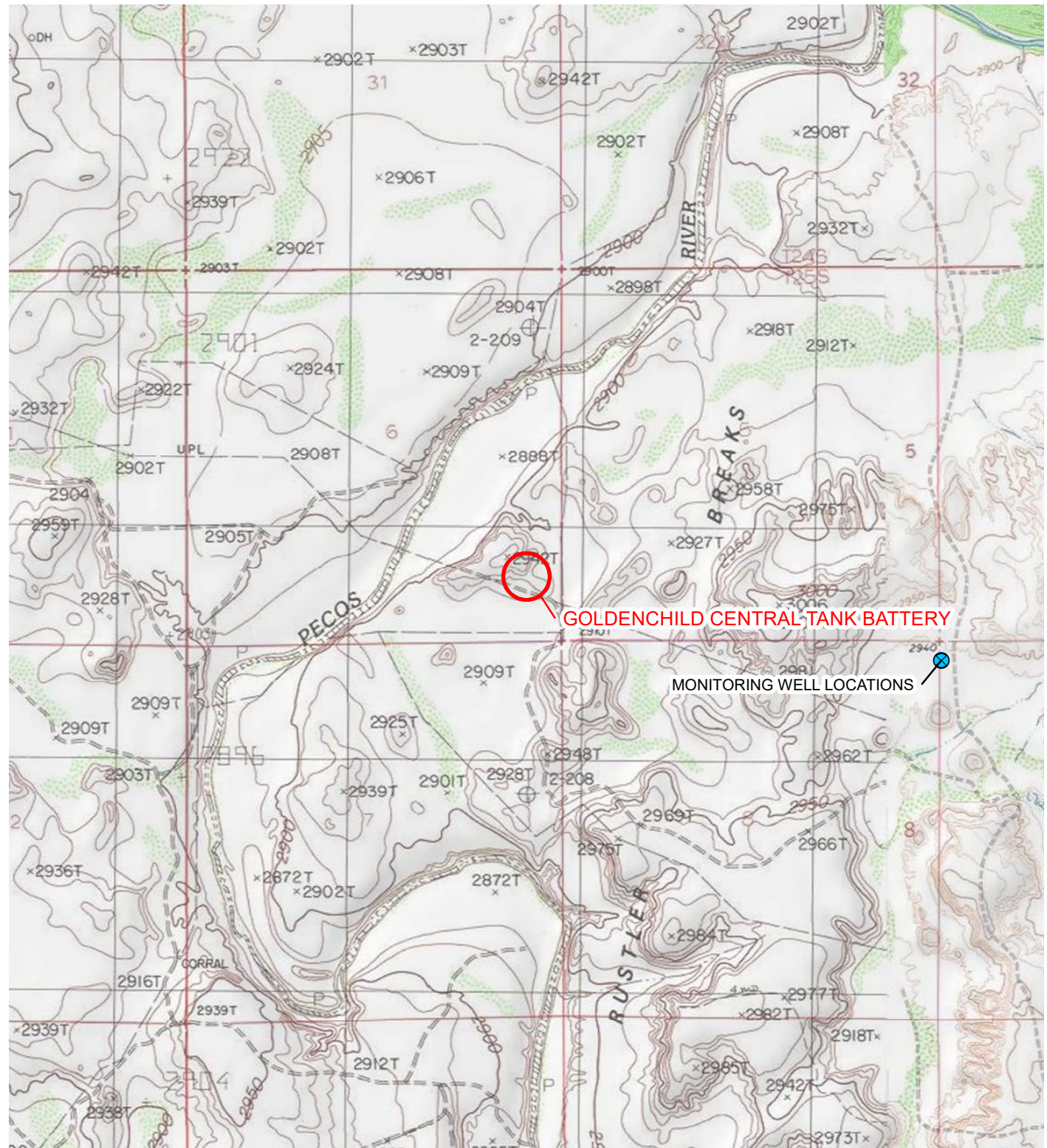
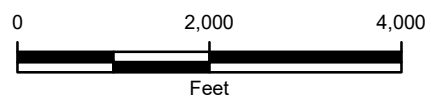


IMAGE COURTESY OF ESRI/USGS

**LEGEND**

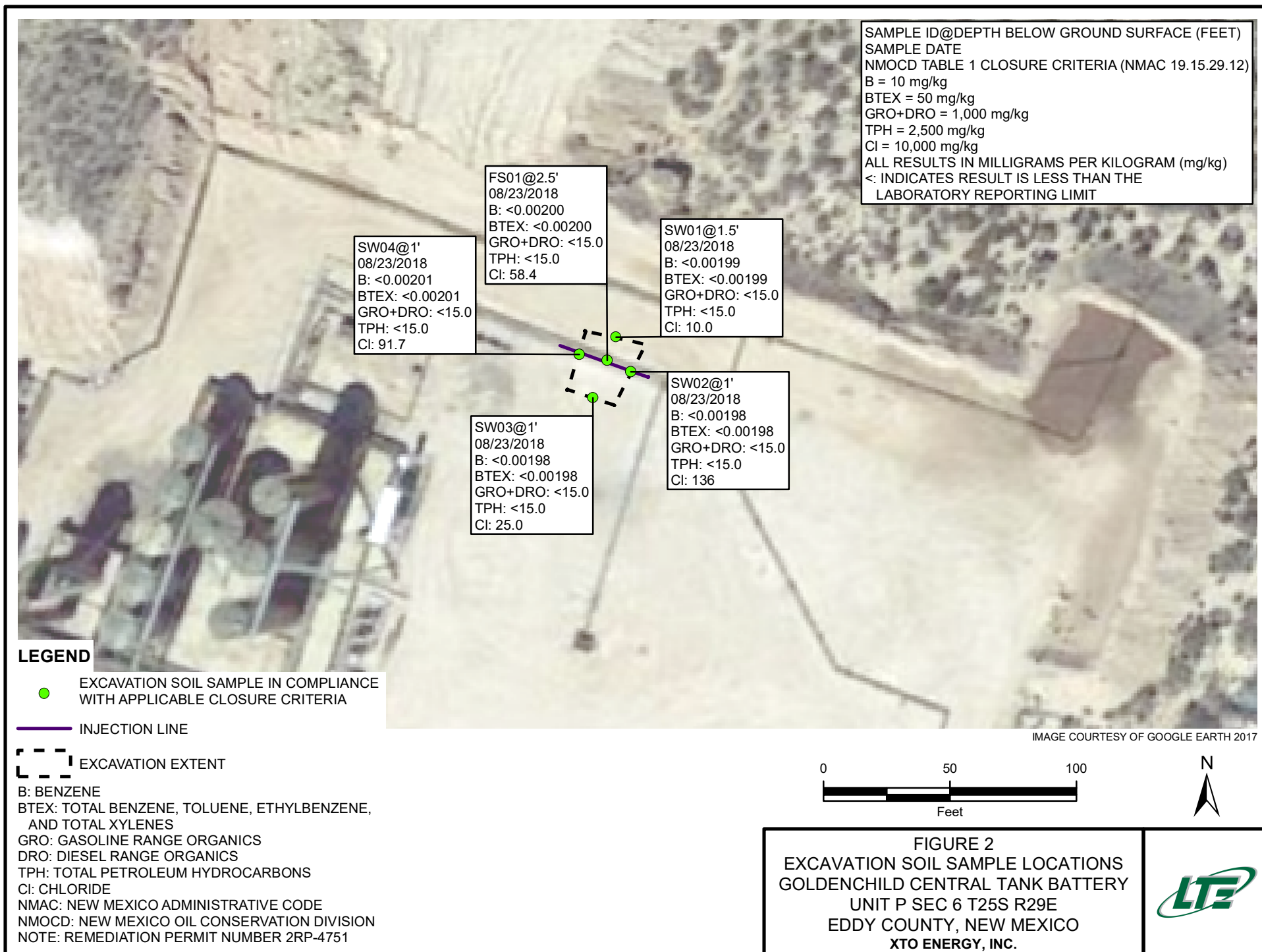
○ SITE LOCATION



NOTE: REMEDIATION PERMIT  
NUMBERS 2RP-4636, 2RP-4777,  
& 2RP-4751

**FIGURE 1**  
**SITE LOCATION MAP**  
**GOLDENCHILD CENTRAL TANK BATTERY**  
**UNIT P SEC 6 T25S R29E**  
**EDDY COUNTY, NEW MEXICO**  
**XTO ENERGY, INC.**





TABLES



**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**GOLDENCHILD CENTRAL TANK BATTERY**  
**REMEDIATION PERMIT NUMBER 2RP-4751**  
**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 GRO (mg/kg)	C10-C28 DRO (mg/kg)	C28-C40 ORO (mg/kg)	GRO and DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
FS01	2.5	08/23/2018	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	58.4
SW01	1.5	08/23/2018	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	10.0
SW02	1	08/23/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	136
SW03	1	08/23/2018	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15.0	<15.0	25.0
SW04	1	08/23/2018	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	91.7
NMOCD Remediation Action Levels			10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	10,000

**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

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

TPH - total petroleum hydrocarbons

&lt; - indicates result is below laboratory reporting limits

**Bold** - indicates result exceeds the applicable regulatory standard.

ATTACHMENT 1: INITIAL/FINAL NMOCD FORM C-141 (2RP-4751)



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 15 2018

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  
District II-Artesia, NM 88210 with 19.15.29 NMAC.

## Release Notification and Corrective Action

**NAB1813754317**

<b>OPERATOR</b>		<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Name of Company: XTO Energy <b>5380</b>		Contact: Amy C. Ruth	
Address: 3104 E. Greene St., Carlsbad, N.M. 88220		Telephone No: 575-689-3380	
Facility Name: Goldenchild Central Tank Battery (API for Goldenchild 6 St. SWD #001)		Facility Type: Exploration and Production	
Surface Owner: State		Mineral Owner: State	API No: 30-015-41846

## LOCATION OF RELEASE

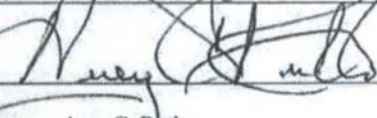

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	6	25S	29E	958	South	320	East	Eddy

Latitude 32.154685° Longitude -104.01618° NAD83

## NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	8.5 BPW	Volume Recovered	8 BPW
Source of Release	Injection pump line	Date and Hour of Occurrence	4/30/2018 time unknown	Date and Hour of Discovery	4/30/2018 8 am
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	N/A		
By Whom?	N/A	Date and Hour:	N/A		
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.* A hole formed in the discharge line of the injection pump due to corrosion. The line was repaired and the facility was returned to production.					
Describe Area Affected and Cleanup Action Taken.* The release affected the north portion of the well pad and standing fluids were recovered. An environmental contractor was retained to assist with remediation efforts.					

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Amy C. Ruth		Signed By: 	
Title: Environmental Coordinator		Approved by Environmental Specialist:	
E-mail Address: Amy.Ruth@xtoenergy.com		Approval Date: 5/16/18	Expiration Date: N/A
Date: 5/15/2018 Phone: 575-689-3380		Conditions of Approval: See attached	Attached <input type="checkbox"/> 22P-4751

\* Attach Additional Sheets If Necessary

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	
District RP	2RP-4751
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party: XTO Energy, Inc	OGRID: 5380
Contact Name: Kyle Littrell	Contact Telephone: (432)-221-7331
Contact email: Kyle_Littrell@xtoenergy.com	Incident #: 2RP-4751
Contact mailing address: 522 W. Mermod, Suite 704 Carlsbad, NM 88220	

### Location of Release Source

Latitude N 32.154685 Longitude W -104.01618  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Goldenchild Central Tank Battery	Site Type: Production Well Facility
Date Release Discovered: 4/30/2018	API# (if applicable): 30-015-41846

Unit Letter	Section	Township	Range	County
P	6	25S	29E	Eddy

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

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls):	Volume Recovered (bbls):
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): 8.5	Volume Recovered (bbls): 8
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

A hole formed in the discharge line of the injection pump due to corrosion. The release affected the north portion of the well pad, standing fluids were recovered. The line was repaired, and the facility was returned to production.


State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	2RP-4751
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release volume was less than 25 bbls.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

**Initial Response**

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: N/A	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&amp;E Supervisor</u>
Signature: 	Date: <u>11-15-2019</u>
email: <u>Kyle_Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

Incident ID	
District RP	2RP-4751
Facility ID	
Application ID	

## Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>51-100</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

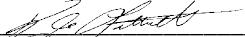
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	2RP-4751
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Kyle Littrell Title: SH&E SupervisorSignature:  Date: 11-15-2019email: Kyle Littrell@xtoenergy.com Telephone: (432)-221-7331**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	2RP-4751
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 Supervisor


Signature:  Date: 11-15-2019

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: 3/20/2023


Printed Name: Brittany Hall Title: Environmental Specialist

ATTACHMENT 2: PHOTOGRAPHIC LOG





East facing view of the open excavation.

Project: 012918021	XTO Energy, Inc. Goldenchild Central Tank Battery	 Advancing Opportunity
August 28, 2018	Photographic Log	



**Southwest facing view of the backfilled excavation area.**

Project: 012918021

XTO Energy, Inc.  
Goldenchild Central Tank Battery

November 8, 2019

Photographic Log



ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS



# Analytical Report 597094

for  
**LT Environmental, Inc.**

**Project Manager: Adrian Baker**

**Golden Child 2RP-4751**

**Golden Child 2RP-4751**

**28-AUG-18**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-16)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



28-AUG-18

Project Manager: **Adrian Baker**  
**LT Environmental, Inc.**  
4600 W. 60th Avenue  
Arvada, CO 80003

Reference: XENCO Report No(s): **597094**  
**Golden Child 2RP-4751**  
Project Address: NM-Eddy

**Adrian Baker:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 597094. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 597094 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'.

**Jessica Kramer**  
Project Assistant

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

**Sample Cross Reference 597094****LT Environmental, Inc., Arvada, CO**

Golden Child 2RP-4751

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	08-23-18 15:30	1.5 ft	597094-001
SW02	S	08-23-18 15:35	1 ft	597094-002
SW03	S	08-23-18 15:40	1 ft	597094-003
SW04	S	08-23-18 15:45	1 ft	597094-004
FS01	S	08-23-18 15:50	2.5 ft	597094-005



## CASE NARRATIVE

**Client Name:** *LT Environmental, Inc.*

**Project Name:** *Golden Child 2RP-4751*

Project ID: *Golden Child 2RP-4751*  
Work Order Number(s): *597094*

Report Date: *28-AUG-18*  
Date Received: *08/27/2018*

---

**Sample receipt non conformances and comments:**

None

---

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3061402 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



# Certificate of Analysis Summary 597094

LT Environmental, Inc., Arvada, CO

Project Name: Golden Child 2RP-4751



**Project Id:** Golden Child 2RP-4751  
**Contact:** Adrian Baker  
**Project Location:** NM-Eddy

**Date Received in Lab:** Mon Aug-27-18 10:00 am  
**Report Date:** 28-AUG-18  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	597094-001	597094-002	597094-003	597094-004	597094-005	
	<i>Field Id:</i>	SW01	SW02	SW03	SW04	FS01	
	<i>Depth:</i>	1.5- ft	1- ft	1- ft	1- ft	2.5- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Aug-23-18 15:30	Aug-23-18 15:35	Aug-23-18 15:40	Aug-23-18 15:45	Aug-23-18 15:50	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-27-18 12:00	Aug-27-18 12:00	Aug-27-18 12:00	Aug-27-18 12:00	Aug-27-18 12:00	
	<i>Analyzed:</i>	Aug-27-18 21:14	Aug-27-18 22:15	Aug-27-18 22:35	Aug-27-18 22:55	Aug-27-18 23:16	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	
Toluene		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	
m,p-Xylenes		<0.00398 0.00398	<0.00397 0.00397	<0.00396 0.00396	<0.00402 0.00402	<0.00401 0.00401	
o-Xylene		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	
Total BTEX		<0.00199 0.00199	<0.00198 0.00198	<0.00198 0.00198	<0.00201 0.00201	<0.00200 0.00200	
<b>Inorganic Anions by EPA 300</b>	<i>Extracted:</i>	Aug-27-18 16:00	Aug-27-18 16:00	Aug-27-18 16:00	Aug-27-18 16:00	Aug-27-18 16:00	
	<i>Analyzed:</i>	Aug-27-18 22:19	Aug-27-18 22:35	Aug-27-18 22:41	Aug-27-18 22:46	Aug-27-18 22:52	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		10.0 5.00	136 5.00	25.0 4.96	91.7 4.95	58.4 4.96	
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Aug-27-18 11:00	Aug-27-18 11:00	Aug-27-18 11:00	Aug-27-18 11:00	Aug-27-18 11:00	
	<i>Analyzed:</i>	Aug-27-18 14:55	Aug-27-18 15:16	Aug-27-18 15:36	Aug-27-18 15:56	Aug-27-18 16:16	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Oil Range Hydrocarbons (ORO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

*Jessica Kramer*

Jessica Kramer  
Project Assistant



# Certificate of Analytical Results 597094



## LT Environmental, Inc., Arvada, CO

Golden Child 2RP-4751

Sample Id: **SW01**  
Lab Sample Id: 597094-001

Matrix: Soil  
Date Collected: 08.23.18 15.30

Date Received: 08.27.18 10.00  
Sample Depth: 1.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061370

Date Prep: 08.27.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.0	5.00	mg/kg	08.27.18 22.19		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061397

Date Prep: 08.27.18 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.27.18 14.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.27.18 14.55	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.27.18 14.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.27.18 14.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	08.27.18 14.55	
o-Terphenyl	84-15-1	99	%	70-135	08.27.18 14.55	



# Certificate of Analytical Results 597094



## LT Environmental, Inc., Arvada, CO

Golden Child 2RP-4751

Sample Id: **SW01**  
Lab Sample Id: 597094-001

Matrix: Soil  
Date Collected: 08.23.18 15.30

Date Received: 08.27.18 10.00  
Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3061402

Date Prep: 08.27.18 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	08.27.18 21.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	08.27.18 21.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	08.27.18 21.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	08.27.18 21.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	08.27.18 21.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	08.27.18 21.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	08.27.18 21.14	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.27.18 21.14		
1,4-Difluorobenzene	540-36-3	84	%	70-130	08.27.18 21.14		



# Certificate of Analytical Results 597094



## LT Environmental, Inc., Arvada, CO

Golden Child 2RP-4751

Sample Id: **SW02**  
Lab Sample Id: 597094-002

Matrix: Soil  
Date Collected: 08.23.18 15.35

Date Received: 08.27.18 10.00  
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061370

Date Prep: 08.27.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	136	5.00	mg/kg	08.27.18 22.35		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061397

Date Prep: 08.27.18 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.27.18 15.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.27.18 15.16	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.27.18 15.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.27.18 15.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.27.18 15.16	
o-Terphenyl	84-15-1	95	%	70-135	08.27.18 15.16	



# Certificate of Analytical Results 597094



## LT Environmental, Inc., Arvada, CO

Golden Child 2RP-4751

Sample Id: **SW02**  
Lab Sample Id: 597094-002

Matrix: Soil  
Date Collected: 08.23.18 15.35

Date Received: 08.27.18 10.00  
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3061402

Date Prep: 08.27.18 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.27.18 22.15	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.27.18 22.15	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.27.18 22.15	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	08.27.18 22.15	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.27.18 22.15	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.27.18 22.15	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.27.18 22.15	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	94	%	70-130	08.27.18 22.15		
1,4-Difluorobenzene	540-36-3	89	%	70-130	08.27.18 22.15		



# Certificate of Analytical Results 597094



## LT Environmental, Inc., Arvada, CO

Golden Child 2RP-4751

Sample Id: **SW03**  
Lab Sample Id: 597094-003

Matrix: Soil  
Date Collected: 08.23.18 15.40

Date Received: 08.27.18 10.00  
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061370

Date Prep: 08.27.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.0	4.96	mg/kg	08.27.18 22.41		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061397

Date Prep: 08.27.18 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.27.18 15.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.27.18 15.36	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.27.18 15.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.27.18 15.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.27.18 15.36	
o-Terphenyl	84-15-1	97	%	70-135	08.27.18 15.36	



# Certificate of Analytical Results 597094

## LT Environmental, Inc., Arvada, CO

Golden Child 2RP-4751

Sample Id: **SW03**  
 Lab Sample Id: 597094-003

Matrix: Soil  
 Date Collected: 08.23.18 15.40

Date Received: 08.27.18 10.00  
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.27.18 12.00

Basis: Wet Weight

Seq Number: 3061402

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	08.27.18 22.35	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	08.27.18 22.35	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	08.27.18 22.35	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	08.27.18 22.35	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	08.27.18 22.35	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	08.27.18 22.35	U	1
Total BTEX		<0.00198	0.00198	mg/kg	08.27.18 22.35	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	101	%	70-130	08.27.18 22.35		
1,4-Difluorobenzene	540-36-3	92	%	70-130	08.27.18 22.35		



# Certificate of Analytical Results 597094



## LT Environmental, Inc., Arvada, CO

Golden Child 2RP-4751

Sample Id: **SW04**  
Lab Sample Id: 597094-004

Matrix: Soil  
Date Collected: 08.23.18 15.45

Date Received: 08.27.18 10.00  
Sample Depth: 1 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061370

Date Prep: 08.27.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	91.7	4.95	mg/kg	08.27.18 22.46		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061397

Date Prep: 08.27.18 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.27.18 15.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.27.18 15.56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.27.18 15.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.27.18 15.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	08.27.18 15.56	
o-Terphenyl	84-15-1	95	%	70-135	08.27.18 15.56	



# Certificate of Analytical Results 597094

## LT Environmental, Inc., Arvada, CO

Golden Child 2RP-4751

Sample Id: **SW04**  
 Lab Sample Id: 597094-004

Matrix: Soil  
 Date Collected: 08.23.18 15.45

Date Received: 08.27.18 10.00  
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: ALJ

% Moisture:

Analyst: ALJ

Date Prep: 08.27.18 12.00

Basis: Wet Weight

Seq Number: 3061402

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.27.18 22.55	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.27.18 22.55	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.27.18 22.55	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.27.18 22.55	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.27.18 22.55	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.27.18 22.55	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.27.18 22.55	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	99	%	70-130	08.27.18 22.55		
1,4-Difluorobenzene	540-36-3	93	%	70-130	08.27.18 22.55		



# Certificate of Analytical Results 597094



## LT Environmental, Inc., Arvada, CO

Golden Child 2RP-4751

Sample Id: **FS01**  
Lab Sample Id: 597094-005

Matrix: Soil  
Date Collected: 08.23.18 15.50

Date Received: 08.27.18 10.00  
Sample Depth: 2.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: SCM

Analyst: SCM

Seq Number: 3061370

Date Prep: 08.27.18 16.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	58.4	4.96	mg/kg	08.27.18 22.52		1

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3061397

Date Prep: 08.27.18 11.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.27.18 16.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.27.18 16.16	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.27.18 16.16	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.27.18 16.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.27.18 16.16	
o-Terphenyl	84-15-1	96	%	70-135	08.27.18 16.16	



# Certificate of Analytical Results 597094



## LT Environmental, Inc., Arvada, CO

Golden Child 2RP-4751

Sample Id: **FS01**  
Lab Sample Id: 597094-005

Matrix: Soil  
Date Collected: 08.23.18 15.50

Date Received: 08.27.18 10.00  
Sample Depth: 2.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: ALJ

Analyst: ALJ

Seq Number: 3061402

Date Prep: 08.27.18 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	08.27.18 23.16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	08.27.18 23.16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	08.27.18 23.16	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	08.27.18 23.16	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	08.27.18 23.16	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	08.27.18 23.16	U	1
Total BTEX		<0.00200	0.00200	mg/kg	08.27.18 23.16	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	92	%	70-130	08.27.18 23.16		
4-Bromofluorobenzene	460-00-4	94	%	70-130	08.27.18 23.16		



## Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection

**PQL** Practical Quantitation Limit      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

**BKS/LCS** Blank Spike/Laboratory Control Sample      **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

**MD/SD** Method Duplicate/Sample Duplicate      **MS** Matrix Spike      **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



**LT Environmental, Inc.**  
Golden Child 2RP-4751

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061370

MB Sample Id: 7661227-1-BLK

Matrix: Solid

LCS Sample Id: 7661227-1-BKS

Prep Method: E300P

Date Prep: 08.27.18

LCSD Sample Id: 7661227-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	254	102	250	100	90-110	2	20	mg/kg	08.27.18 22:08	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061370

Parent Sample Id: 596609-016

Matrix: Soil

MS Sample Id: 596609-016 S

Prep Method: E300P

Date Prep: 08.27.18

MSD Sample Id: 596609-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	167	285	449	99	451	100	90-110	0	20	mg/kg	08.27.18 23:41	

**Analytical Method: Inorganic Anions by EPA 300**

Seq Number: 3061370

Parent Sample Id: 597094-001

Matrix: Soil

MS Sample Id: 597094-001 S

Prep Method: E300P

Date Prep: 08.27.18

MSD Sample Id: 597094-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.0	250	263	101	267	103	90-110	2	20	mg/kg	08.27.18 22:24	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3061397

MB Sample Id: 7661243-1-BLK

Matrix: Solid

LCS Sample Id: 7661243-1-BKS

Prep Method: TX1005P

Date Prep: 08.27.18

LCSD Sample Id: 7661243-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	915	92	1020	102	70-135	11	20	mg/kg	08.27.18 12:35	
Diesel Range Organics (DRO)	<15.0	1000	935	94	1050	105	70-135	12	20	mg/kg	08.27.18 12:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		113		126		70-135	%	08.27.18 12:35
o-Terphenyl	100		100		109		70-135	%	08.27.18 12:35

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C-A) / B$   
 $RPD = 200 * |(C-E) / (C+E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec



**LT Environmental, Inc.**  
Golden Child 2RP-4751

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3061397

Parent Sample Id: 596931-009

Matrix: Soil

MS Sample Id: 596931-009 S

Prep Method: TX1005P

Date Prep: 08.27.18

MSD Sample Id: 596931-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	888	89	886	89	70-135	0	20	mg/kg	08.27.18 13:35	
Diesel Range Organics (DRO)	<15.0	999	917	92	925	93	70-135	1	20	mg/kg	08.27.18 13:35	

**Surrogate**

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		112		70-135	%	08.27.18 13:35
o-Terphenyl	101		102		70-135	%	08.27.18 13:35

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061402

MB Sample Id: 7661244-1-BLK

Matrix: Solid

LCS Sample Id: 7661244-1-BKS

Prep Method: SW5030B

Date Prep: 08.27.18

LCSD Sample Id: 7661244-1-BSO

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.108	108	0.103	102	70-130	5	35	mg/kg	08.27.18 14:54	
Toluene	<0.00200	0.100	0.104	104	0.104	103	70-130	0	35	mg/kg	08.27.18 14:54	
Ethylbenzene	<0.00200	0.100	0.115	115	0.110	109	70-130	4	35	mg/kg	08.27.18 14:54	
m,p-Xylenes	<0.00401	0.200	0.223	112	0.211	104	70-130	6	35	mg/kg	08.27.18 14:54	
o-Xylene	<0.00200	0.100	0.103	103	0.0973	96	70-130	6	35	mg/kg	08.27.18 14:54	

**Surrogate**

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		98		91		70-130	%	08.27.18 14:54
4-Bromofluorobenzene	94		94		91		70-130	%	08.27.18 14:54

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3061402

Parent Sample Id: 596507-003

Matrix: Soil

MS Sample Id: 596507-003 S

Prep Method: SW5030B

Date Prep: 08.27.18

MSD Sample Id: 596507-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0749	75	0.0881	88	70-130	16	35	mg/kg	08.27.18 15:36	
Toluene	<0.00200	0.0998	0.0548	55	0.0952	95	70-130	54	35	mg/kg	08.27.18 15:36	XF
Ethylbenzene	<0.00200	0.0998	0.0424	42	0.0811	81	70-130	63	35	mg/kg	08.27.18 15:36	XF
m,p-Xylenes	<0.00399	0.200	0.0800	40	0.156	78	70-130	64	35	mg/kg	08.27.18 15:36	XF
o-Xylene	<0.00200	0.0998	0.0377	38	0.0700	70	70-130	60	35	mg/kg	08.27.18 15:36	XF

**Surrogate**

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		78		70-130	%	08.27.18 15:36
4-Bromofluorobenzene	94		93		70-130	%	08.27.18 15:36

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec



Setting the Standard since 1990  
 Stafford, Texas (281-240-4200)  
 Dallas Texas (214-902-0300)

# CHAIN OF C STUDY

Page 1 of 1

San Antonio, Texas (210-509-3334)  
 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

[www.xenco.com](http://www.xenco.com)

Xenco Quote # \_\_\_\_\_ Xenco Job # 597094

Client / Reporting Information		Project Information		Analytical Information												Matrix Codes	
Company Name / Branch: <u>LT Environmental, Inc. Permian Office</u>		Project Name/Number: <u>Golden Child 2RP-4751</u>		<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">           BTEX 821 (only BTEX)            TPH (DRO, GRO, ARO) 821/5            Chloride (300.0)         </div> <div>           W = Water            S = Soil/Sed/Solid            GW = Ground Water            DW = Drinking Water            P = Product            SW = Surface water            SL = Sludge            OW = Ocean/Sea Water            WI = Wipe            O = Oil            WW = Waste Water            A = Air         </div> </div>												Field Comments	
Company Address: <u>3300 N.A. St. Building Unit 103 Midland, TX 79701</u>		Project Location: <u>NM-Eddy</u>															
Email: <u>abaker@ltenv.com</u> Phone No: <u>(432) 704-5178</u>		Invoice To: <u>Kyle Littrell - XTO-Energy</u>															
Project Contact: <u>Adrian Baker</u>		PO Number:															
Samplers Name <u>Lynne Lamborn</u>																	
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE			
1	SW01	1.5'	08/23/18	15:30	S	1									X	X	
2	SW02	1'		15:35	S	1									X	X	
3	SW03	1'		15:40	S	1									X	X	
4	SW04	1'		15:45	S	1									X	X	
5	FS01	2.5'	V	15:50	S	1									X	X	
6																	
7																	
8																	
9																	
10																	
Turnaround Time (Business days)				Data Deliverable Information				Notes:									
<input checked="" type="checkbox"/> Same Day TAT		<input type="checkbox"/> 5 Day TAT		<input type="checkbox"/> Level II Std QC		<input type="checkbox"/> Level IV (Full Data Pkg /raw data)											
<input type="checkbox"/> Next Day EMERGENCY		<input type="checkbox"/> 7 Day TAT		<input type="checkbox"/> Level III Std QC+ Forms		<input type="checkbox"/> TRRP Level IV											
<input type="checkbox"/> 2 Day EMERGENCY		<input type="checkbox"/> Contract TAT		<input type="checkbox"/> Level 3 (CLP Forms)		<input type="checkbox"/> UST / RG -411											
<input type="checkbox"/> 3 Day EMERGENCY				<input type="checkbox"/> TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm																	
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																	
Relinquished By: Sampler		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:		Relinquished By:		Date Time:		Received By:	
1 <u>[Signature]</u>		08/23/2018 7:15		1 Pac-N-Mail cooler		2 <u>[Signature]</u>		8/24 15:30		2 <u>[Signature]</u>		3 <u>[Signature]</u>		8/27/18		10:00	
3				3		4				4		5					
Relinquished by:		Date Time:		Received By:		Custody Seal #		Preserved where applicable		On Ice		Cooler Temp.		Thermo. Corr. Factor			
5				5						<input checked="" type="checkbox"/>		18		28		0	

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



## XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 08/27/2018 10:00:00 AM

Work Order #: 597094

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	1.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Connie Hernandez

Date: 08/27/2018

Checklist reviewed by:

Jessica Kramer

Date: 08/27/2018

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
  
Action 198857

CONDITIONS

Operator:  XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:  5380
	Action Number:  198857
	Action Type:  [IM-SD] Well File Support Doc (ENV) (IM-BWF)

CONDITIONS

Created By	Condition	Condition Date
bhall	NMOCD disagrees with the depth to groundwater determination. There is a 20 ft elevation difference between the site where the monitor wells are located and where the impacted area is located. The 20 foot elevation difference puts depth to groundwater at the site at less than 50 feet. However, the site meets the most stringent closure criteria therefore; closure has been approved.	3/20/2023