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 | NCE2002937020 |
| District RP | |
| Facility ID | |
| Application ID | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party XTO Energy | OGRID 5380 |
| Contact Name Kyle Littrell | Contact Telephone 432-221-7331 |
| Contact email Kyle_Littrell@xtoenergy.com | Incident # *(assigned by OCD)* |
| Contact mailing address 522 W. Mermod, Carlsbad, NM 88220 | |

## Location of Release Source

Latitude 32.254948 Longitude -103.608717
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name Mis Amigos CTB | Site Type Well Location |
| Date Release Discovered 11/20/2019 | API# *(if applicable)* 30-025-40590 (Mis Amigos State 001H) |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| O | 31 | 23S | 33E | LEA |

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

## Nature and Volume of Release

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

| | | |
|---|---|---|
| ☒ Crude Oil | Volume Released (bbls) 5.03 | Volume Recovered (bbls) 3.0 |
| ☐ Produced Water | Volume Released (bbls) 0.0 | Volume Recovered (bbls) 0.0 |
| | Is the concentration of dissolved chloride in the produced water >10,000 mg/l? | ☐ Yes ☐ No |
| ☐ Condensate | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| ☐ Other (describe) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |

Cause of Release: Sight glass on a knockout broke and released approximately 5.03 bbls of oil. Recovered approximately 3 bbls by vacuum truck. Additional third party resources have been retained to assist in the remediation.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NCE2002937020 |
| District RP | |
| Facility ID | |
| Application ID | |

| | |
|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br>☐ Yes ☒ No | If YES, for what reason(s) does the responsible party consider this a major release?<br>N/A |
| If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?<br>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*

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

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

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: Kyle Littrell Title: SH&E Supervisor

Signature: Date: 12/4/2019

email: Kyle_Littrell@xtoenergy.com Telephone:

**OCD Only**

Received by: Cristina Eads Date: 01/29/2020

NCE2002937020

| Location: | Mis Amigos CTB | |
|---|---|---|
| Spill Date: | 11/20/2019 | |
| **Area 1** | | |
| Approximate Area = | 701.00 | sq. ft. |
| Average Saturation (or depth) of spill = | 0.75 | inches |
| Average Porosity Factor = | 0.20 | |
| VOLUME OF LEAK | | |
| Total Oil = | 4.56 | bbls |
| **Area 2** | | |
| Approximate Area = | 2537.00 | sq. ft. |
| Average Saturation (or depth) of spill = | 0.06 | inches |

| | | |
|---|---|---|
| Approximate oil % = | 100.00 | |
| Average Porosity Factor = | 0.20 | |
| VOLUME OF LEAK | | |
| Total Oil = | 0.47 | bbls |
| **TOTAL VOLUME OF LEAK** | | |
| **Total Oil =** | **5.03** | **bbls** |
| **TOTAL VOLUME RECOVERED** | | |
| **Total Oil =** | **3.00** | **bbls** |

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NCE2002937020 |
| District RP | |
| 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? | >100 (ft bgs) |
| Did this release impact groundwater or surface water? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | ☐ Yes ☒ No |
| Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a wetland? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying a subsurface mine? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | ☐ Yes ☒ No |
| Are the lateral extents of the release within a 100-year floodplain? | ☐ Yes ☒ No |
| Did the release impact areas **not** on an exploration, development, production, or storage site? | ☐ Yes ☒ No |

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

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

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

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

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Page 4

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NCE2002937020 |
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| 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 Supervisor

Signature: Date: 02/13/2020

email: Kyle_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: Date:

| | |
|---|---|
| Incident ID | NCE2002937020 |
| District RP | |
| Facility ID | |
| Application ID | |

# Remediation Plan

**Remediation Plan Checklist**: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only**: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☒ Extents of contamination must be fully delineated.

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: _____ Date: 02/13/2020

email: Kyle_Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: _____ Date: _____

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

Signature: _____ Date: _____

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LT Environmental, Inc.
3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

February 18, 2020

District I
New Mexico Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88240

**RE: Deferral Request**
**Mis Amigos CTB**
**Incident Number NCE2002937020**
**Lea County, New Mexico**

To Whom It May Concern:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Deferral Request detailing site assessment and soil sampling activities at the Mis Amigos CTB (Site) in Unit O, Section 31, Township 23 South, Range 33 East, in Lea County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to confirm the presence or absence of impacts to soil following a release of crude oil at the Site. Based on field observations, field screening, and laboratory analytical results from soil sampling activities, XTO is submitting this Deferral Request, describing remediation that has occurred and requesting deferral of final remediation for this release event until major reconstruction or abandonment of the well.

## RELEASE BACKGROUND

On November 20, 2019, a sight glass on a knockout tank broke, resulting in the release of 5.03 barrels (bbls) of crude oil into the lined earthen berm containment. A vacuum truck was dispatched to the Site to recover freestanding fluids; approximately 3 bbls of crude oil were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Form C-141 on December 4, 2019 and was assigned Incident Number NCE2002937020.

## 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 greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is United States Geological Survey (USGS) Well 321555103381501, located approximately 1.90 miles northwest of the Site. The groundwater well has a depth to groundwater of approximately 487 feet bgs and a total depth of approximately 700 feet bgs. Three New Mexico Office of the State Engineer (NMOSE) wells are closer to the Site (C 03565, C 03565 and C 03591), however, there is no depth to groundwater

data associated with these wells. The closest continuously flowing water or significant watercourse to the Site is an intermittent streambed, located approximately 1.71 miles southeast 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 low potential karst area. The Site receptors are identified on Figure 1.

## 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
- Chloride: 20,000 mg/kg

## SITE ASSESSMENT AND SOIL SAMPLING ACTIVITIES

On December 10, 2019, LTE evaluated the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected three preliminary soil samples (SS01 through SS03) within the earthen berm containment and surrounding the point of release at a depth of approximately 0.5 feet bgs to assess the presence or absence of soil impacts at the ground surface. The preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

The 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 Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

On January 23, 2019 through January 28, 2019, LTE personnel retuned to the Site to oversee additional soil assessment and soil excavation activities. Excavation of impacted soil was conducted inside the containment where a liner was encountered at one foot bgs. Approximately 30 cubic yards of impacted soil above the liner was removed within the release outline with a

hydro-excavator until the liner was exposed. The impacted soil was transported offsite for disposal at R360 in Hobbs, New Mexico. The excavation extent is depicted on Figure 4.

Due to the presence of the liner, no excavation confirmation samples could be collected. Instead, LTE personnel conducted a liner integrity inspection and determined the liner was inadequate due to the presence of a hole in the liner. Vertical delineation soil sampling was completed at the location of the hole found during the liner integrity inspection. One borehole (BH01) was advanced via hand-auger until refusal at a depth of approximately 12.75 feet bgs. Soil from the borehole was field screened at one foot intervals for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for each sample were documented on a lithologic/soil sampling log which is included as Attachment 1. Samples were collected at six feet and nine feet bgs, handled as described above and submitted to Xenco in Carlsbad, New Mexico. Impacted soil from the borehole was disposed of within the hydro-excavation soil pile, which was disposed of at R360 in Hobbs, New Mexico. Photographic documentation was conducted during the Site visit. Photographs are included in Attachment 2. The borehole was backfilled with clean fill and XTO personnel repaired the liner. The borehole and vertical delineation soil sample location is depicted on Figure 3.

## ANALYTICAL RESULTS

Laboratory analytical results indicated benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were exceeding the Closure Criteria in preliminary soil samples SS01 and SS03 collected at approximately 0.5 feet bgs. Impacted soil within the earthen berm containment was removed with a hydro-excavator until a liner was exposed. A hole was identified in the liner and two soil samples were collected from a subsequent borehole advanced through the hole. Laboratory analytical results for delineation soil sample BH01, collected at approximately 6 feet bgs, indicated that TPH-GRO + TPH-DRO and TPH concentrations exceeded the Closure Criteria. Laboratory analytical results indicated benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in delineation soil sample BH01A collected at a depth of approximately nine feet bgs. Laboratory analytical results are presented on Figures 2 and 3 and summarized in Table 1. The complete laboratory analytical reports are included as Attachment 3.

## DEFERRAL REQUEST

XTO recovered free liquids associated with the November 20, 2019 release of crude oil in a lined containment. Impacted soil within the lined containment was identified and removed with a hydroexcavator until the liner was exposed. Following a failed liner integrity inspection, LTE personnel advanced one borehole in the location of the hole in the compromised liner. Delineation soil samples BH01 and BH01A were collected from depths ranging from approximately six and nine feet bgs to assess for the presence or absence of soil impacts beneath

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the liner. Laboratory analytical results indicated that TPH-GRO, TPH-DRO, and TPH concentrations exceeded the Closure Criteria in delineation soil sample BH01, collected at approximately six feet bgs. Laboratory analytical results indicated benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in delineation soil sample BH01A collected at approximately nine feet bgs, respectively.

Residual impacted soil in the area of delineation borehole BH01 was left in place under the lined earthen berm containment in which active operating equipment exists. Vertical delineation was achieved at approximately nine feet bgs. The lateral extent of impacted soil remaining in place is defined by the lined earthen berm containment. An estimated 233 cubic yards of impacted soil remains in place surrounding borehole BH01 beneath the lined earthen berm containment, assuming a maximum nine-foot depth based on soil sample BH01A collected at a depth of nine feet bgs that was compliant with the Closure Criteria.

Based on the site characterization indicating depth to groundwater is greater than 100 feet bgs and no nearby sensitive surface features, LTE and XTO do not believe deferment will result in imminent risk to human health, the environment, or groundwater. The liner was repaired by XTO and will restrict potential vertical migration of residual impacts. XTO requests deferral of final remediation for this release event until final reclamation of the well pad or major construction, whichever comes first. An updated Form C-141 is attached to this Deferral Request.

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

Sincerely,
LT ENVIRONMENTAL, INC.

Kalei Jennings
Project Environmental Scientist

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Ryan Mann, State Land Office

Appendices:

| | |
|---|---|
| Figure 1 | Site Location Map |
| Figure 2 | Preliminary Soil Sample Locations |
| Figure 3 | Delineation Soil Sample Locations |
| Figure 4 | Excavation Soil Sample Locations |

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TABLES

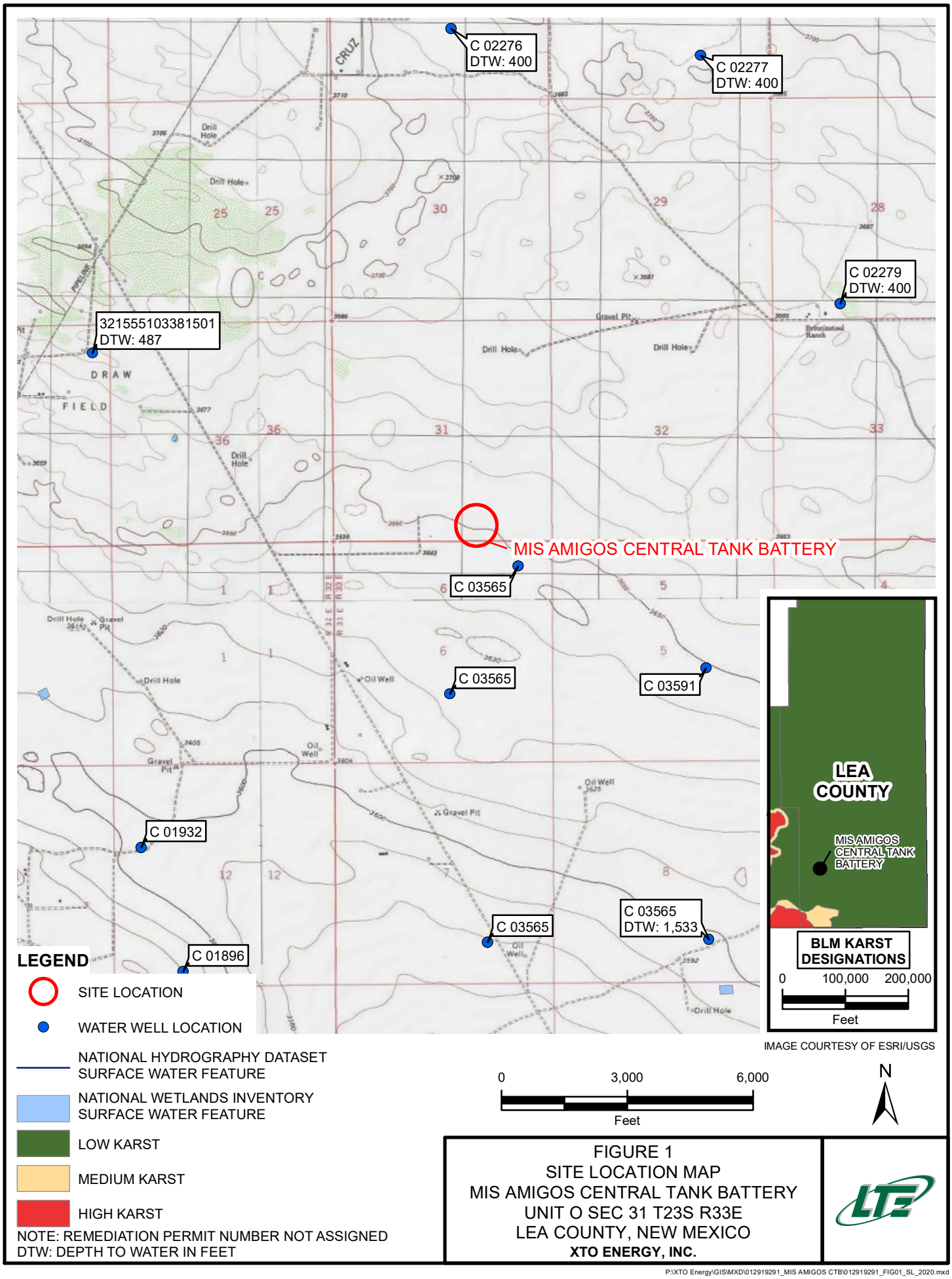
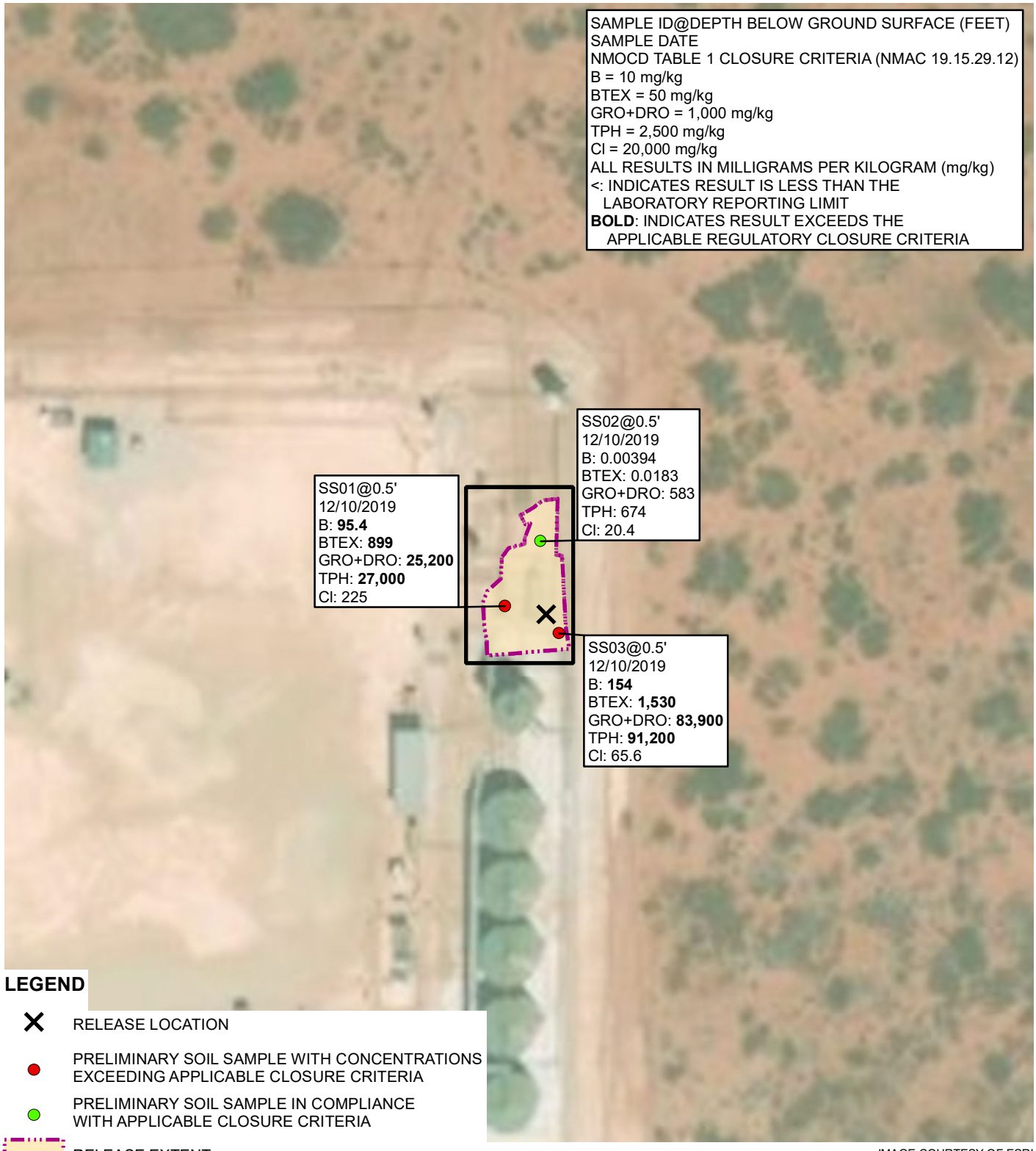



FIGURE 1
SITE LOCATION MAP
MIS AMIGOS CENTRAL TANK BATTERY
UNIT O SEC 31 T23S R33E
LEA COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012919291_MIS AMIGOS CTB\012919291_FIG01_SL_2020.mxd




B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER NOT ASSIGNED

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
MIS AMIGOS CENTRAL TANK BATTERY
UNIT O SEC 31 T23S R33E
LEA COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012919291_MIS AMIGOS CTB\012919291_FIG02_PRELIMINARY_2020.mxd

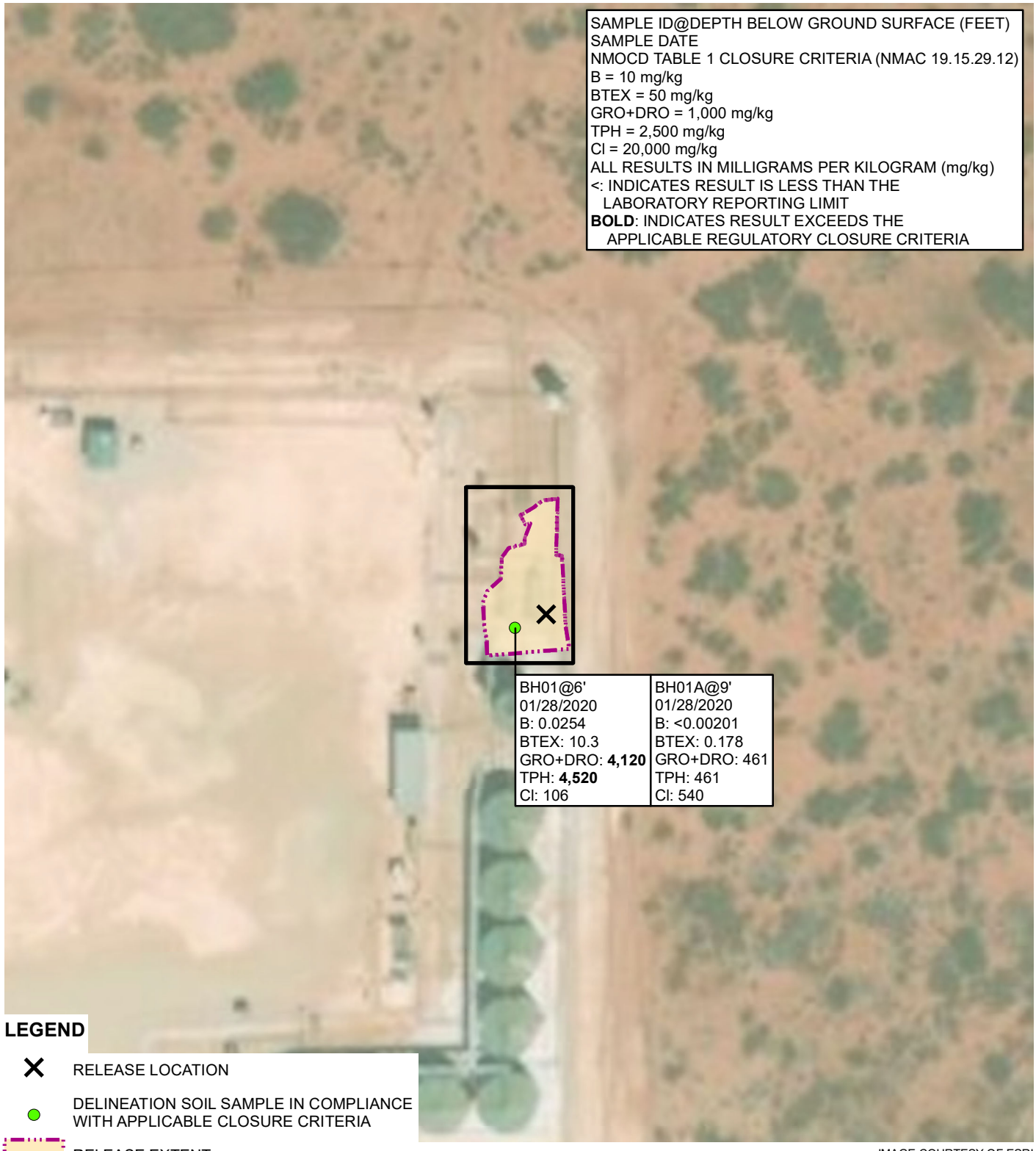
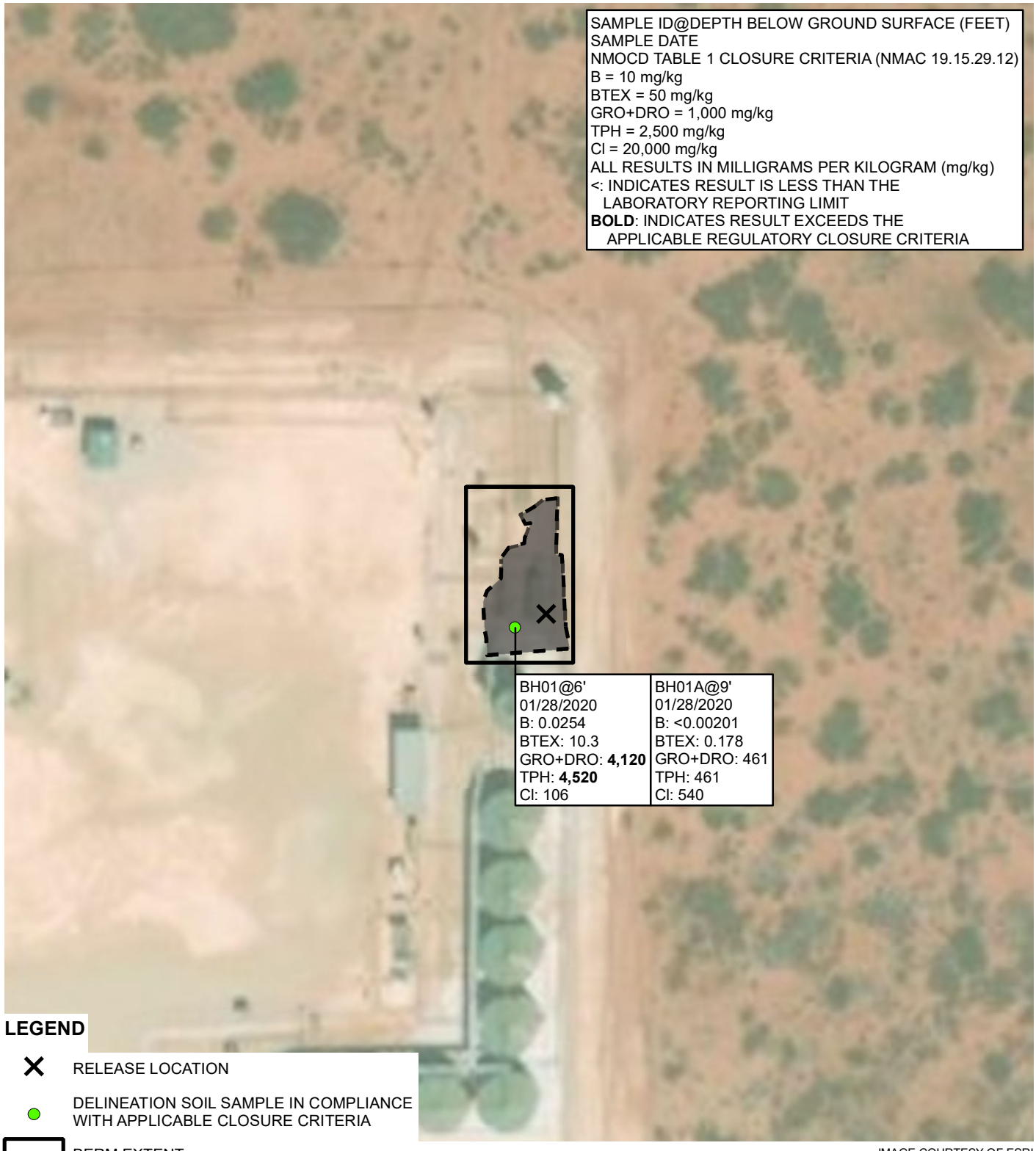



FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
MIS AMIGOS CENTRAL TANK BATTERY
UNIT O SEC 31 T23S R33E
LEA COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012919291_MIS AMIGOS CTB\012919291_FIG03_DELINEATION_2020.mxd




B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
GRO: GASOLINE RANGE ORGANICS
DRO: DIESEL RANGE ORGANICS
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER NOT ASSIGNED

FIGURE 4
EXCAVATION SOIL SAMPLE LOCATIONS
MIS AMIGOS CENTRAL TANK BATTERY
UNIT O SEC 31 T23S R33E
LEA COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\MXD\012919291_MIS AMIGOS CTB\012919291_FIG04_EXCAVATION_2020.mxd

# TABLES

# TABLE 1
# SOIL ANALYTICAL RESULTS

## MIS AMIGOS CTB
## INCIDENT NUMBER NCE2002937020
## LEA COUNTY, NEW MEXICO
## XTO ENERGY, INC.

| Sample Name | Sample Depth (feet bgs) | Sample Date | Benzene (mg/kg) | Toluene (mg/kg) | Ethyl-benzene (mg/kg) | Total Xylenes (mg/kg) | Total BTEX (mg/kg) | GRO (mg/kg) | DRO (mg/kg) | ORO (mg/kg) | Total GRO+DRO (mg/kg) | TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria** | | | 10 | NE | NE | NE | **50** | NE | NE | NE | **1,000** | **2,500** | **20,000** |
| SS01 | 0.5 | 12/10/2019 | **95.4** | 393 | 78.2 | 332 | **899** | 11,200 | 14,000 | 1,830 | **25,200** | **27,000** | 225 |
| SS02 | 0.5 | 12/10/2019 | 0.00394 | 0.00759 | <0.00201 | 0.00674 | 0.0183 | <50.0 | 583 | 90.6 | 583 | 674 | 20.4 |
| SS03 | 0.5 | 12/10/2019 | **154** | 642 | 134 | 598 | **1,530** | 25,400 | 58,500 | 7,300 | **83,900** | **91,200** | 65.6 |
| BH01 | 6 | 01/28/2020 | 0.0254 | 1.77 | 1.34 | 7.17 | 10.3 | 322 | 3,800 | 402 | **4,120** | **4,520** | 106 |
| BH01A | 9 | 01/28/2020 | <0.00201 | 0.0285 | 0.0235 | 0.126 | 0.178 | <50.0 | 461 | <50.0 | 461 | 461 | 540 |

**Notes:**

bgs - below ground surface
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
MRO - motor oil range organics
NMAC - New Mexico Administrative Code
NMOCD - New Mexico Oil Conservation Division
NE - not established
TPH - total petroleum hydrocarbons
**Bold** - indicates result exceeds the applicable regulatory standard
< - indicates result is below laboratory reporting limits
Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

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# ATTACHMENT 1: LITHOLOGIC SOIL SAMPLE LOGS

**LT Environmental, Inc.**
508 West Stevens Street
Carlsbad, New Mexico 88220
Compliance · Engineering · Remediation

| | | | |
|---|---|---|---|
| | | Identifier: BH01 | Date: 1/28/20 |
| | | Project Nam Mis Amigos CTB | RP Number: 11-20-19 |
| **LITHOLOGIC / SOIL SAMPLING LOG** | | Logged By: Armando Trejo | Method: Hand Auger |
| Lat/Long: (32.254948, -103.608717) | Field Screening: Chlorides, PID | Hole Diame 2.5" | Total Depth: 12.75' |

Comments:

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Depth (ft. bgs.) | Sample Depth | Soil/Rock Type | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| moist | 173.6 | 222 | N | | 5 | | SW | |
| moist | <173.6 | 109 | N | BH01 | 6 | 6' | SW | SAND, moist, brown, well-graded, medium-grained, staining, strong odor. |
| moist | <173.6 | 207 | N | | 7 | | SW | |
| moist | <173.6 | 297 | N | | 8 | | SW | |
| moist | 649.6 | 72.0 | N | BH01A | 9 | 9' | SW-SM | SAND/w silt, medium-fine grain, well-graded, poorly sorted, low plasticity, non cohesive, staining, strong odor. |
| moist | 649.6 | 200 | N | | 10 | | | |
| moist | 1,187 | 199 | N | | 11 | | | |
| moist | 929 | 144 | N | | 12 | | | |
| moist | 593 | 49.0 | N | | 12.75 | | | Auger Refusal |
| | | | | | | | | Total Depth 12.75 feet bgs |

# ATTACHMENT 2: PHOTOGRAPHIC LOG

# PHOTOGRAPHIC LOG

**Photograph 1:** Northeast view of release extent.

**Photograph 2:** View of compromised containment liner near release extent.

**Photograph 3:** Western view of delineation activities within release extent.

**Photograph 4:** Southern view of release extent following remediation activities.

Mis Amigos CTB
32.254948, -103.608717
Photographs Taken: January 24, 2020 – February 11, 2020

# ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS

# Analytical Report 645827

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**Mis Amigos CTB**

**17-DEC-19**

Collected By: Client


**1089 N Canal Street**
**Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

17-DEC-19

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

Reference: XENCO Report No(s): **645827**
**Mis Amigos CTB**
Project Address:

**Dan Moir**:

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) 645827. 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. 645827 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,

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 645827

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SS01 | S | 12-10-19 12:20 | 0.5 ft | 645827-001 |
| SS02 | S | 12-10-19 12:25 | 0.5 ft | 645827-002 |
| SS03 | S | 12-10-19 12:30 | 0.5 ft | 645827-003 |

# CASE NARRATIVE

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

***Project Name: Mis Amigos CTB***

Project ID:
Work Order Number(s): *645827*

Report Date: *17-DEC-19*
Date Received: *12/10/2019*

**Sample receipt non conformances and comments:**

None

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

None

**Analytical non conformances and comments:**

Batch: LBA-3110518 Chloride by EPA 300
Lab Sample ID 646178-009 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.
Samples in the analytical batch are: 645827-001, -002, -003.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3110704 BTEX by EPA 8021B
Lab Sample ID 645827-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Ethylbenzene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. m,p-Xylenes , o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 645827-001, -002, -003.
The Laboratory Control Sample for m,p-Xylenes , Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 1,4-Difluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 645827-001,645827-003.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 645827-003,645827-001.

Due to matrix, the initial run for sample 001 was performed at a dilution of 500X.
Due to matrix, the initial run for sample 003 was performed at a dilution of 1000X.

# Certificate of Analysis Summary 645827

## LT Environmental, Inc., Arvada, CO

## Project Name: Mis Amigos CTB

**Project Id:**
**Contact:** Dan Moir
**Project Location:**

**Date Received in Lab:** Tue Dec-10-19 04:25 pm
**Report Date:** 17-DEC-19
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 645827-001 | | 645827-002 | | 645827-003 | | | |
| | ***Field Id:*** | SS01 | | SS02 | | SS03 | | | |
| | ***Depth:*** | 0.5- ft | | 0.5- ft | | 0.5- ft | | | |
| | ***Matrix:*** | SOIL | | SOIL | | SOIL | | | |
| | ***Sampled:*** | Dec-10-19 12:20 | | Dec-10-19 12:25 | | Dec-10-19 12:30 | | | |
| **BTEX by EPA 8021B SUB: T104704400-19-19** | ***Extracted:*** | Dec-16-19 12:00 | | Dec-16-19 12:00 | | Dec-16-19 12:00 | | | |
| | ***Analyzed:*** | Dec-16-19 18:58 | | Dec-16-19 18:17 | | Dec-16-19 19:18 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Benzene | | 95.4 | 1.01 | 0.00394 | 0.00201 | 154 | 2.00 | | |
| Toluene | | 393 D | 2.02 | 0.00759 | 0.00201 | 642 D | 4.00 | | |
| Ethylbenzene | | 78.2 | 1.01 | <0.00201 | 0.00201 | 134 | 2.00 | | |
| m,p-Xylenes | | 242 | 2.02 | 0.00449 | 0.00402 | 438 | 4.00 | | |
| o-Xylene | | 90.4 | 1.01 | 0.00225 | 0.00201 | 160 | 2.00 | | |
| Total Xylenes | | 332 | 1.01 | 0.00674 | 0.00201 | 598 | 2.00 | | |
| Total BTEX | | 899 | 1.01 | 0.0183 | 0.00201 | 1530 | 2.00 | | |
| **Chloride by EPA 300 SUB: T104704400-19-19** | ***Extracted:*** | Dec-13-19 08:30 | | Dec-13-19 08:30 | | Dec-13-19 08:30 | | | |
| | ***Analyzed:*** | Dec-13-19 09:18 | | Dec-13-19 09:24 | | Dec-13-19 09:29 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Chloride | | 225 | 5.03 | 20.4 | 4.97 | 65.6 | 5.01 | | |
| **TPH by SW8015 Mod SUB: T104704400-19-19** | ***Extracted:*** | Dec-12-19 13:00 | | Dec-12-19 13:00 | | Dec-12-19 13:00 | | | |
| | ***Analyzed:*** | Dec-13-19 09:14 | | Dec-13-19 04:27 | | Dec-13-19 09:33 | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | mg/kg | RL | | |
| Gasoline Range Hydrocarbons (GRO) | | 11200 | 249 | <50.0 | 50.0 | 25400 | 499 | | |
| Diesel Range Organics (DRO) | | 14000 | 249 | 583 | 50.0 | 58500 | 499 | | |
| Motor Oil Range Hydrocarbons (MRO) | | 1830 | 249 | 90.6 | 50.0 | 7300 | 499 | | |
| Total GRO-DRO | | 25200 | 249 | 583 | 50.0 | 83900 | 499 | | |
| Total TPH | | 27000 | 249 | 674 | 50.0 | 91200 | 499 | | |





Version: 1.%

Jessica Kramer
Project Assistant

# Certificate of Analytical Results 645827

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS01** | Matrix: | Soil | Date Received: | 12.10.19 16.25 |
| Lab Sample Id: | 645827-001 | Date Collected: | 12.10.19 12.20 | Sample Depth: | 0.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 12.13.19 08.30 | Basis: | Wet Weight |
| Seq Number: | 3110518 | | | SUB: | T104704400-19-19 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **225** | 5.03 | mg/kg | 12.13.19 09.18 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DVM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 12.12.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110381 | | | SUB: | T104704400-19-19 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **11200** | 249 | mg/kg | 12.13.19 09.14 | | 5 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **14000** | 249 | mg/kg | 12.13.19 09.14 | | 5 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **1830** | 249 | mg/kg | 12.13.19 09.14 | | 5 |
| **Total GRO-DRO** | PHC628 | **25200** | 249 | mg/kg | 12.13.19 09.14 | | 5 |
| **Total TPH** | PHC635 | **27000** | 249 | mg/kg | 12.13.19 09.14 | | 5 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 101 | % | 70-135 | 12.13.19 09.14 | |
| o-Terphenyl | 84-15-1 | 96 | % | 70-135 | 12.13.19 09.14 | |

# Certificate of Analytical Results 645827

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS01** | Matrix: | Soil | Date Received: | 12.10.19 16.25 |
| Lab Sample Id: | 645827-001 | Date Collected: | 12.10.19 12.20 | Sample Depth: | 0.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | KTL | | | % Moisture: | |
| Analyst: | KTL | Date Prep: | 12.16.19 12.00 | Basis: | Wet Weight |
| Seq Number: | 3110704 | | | SUB: | T104704400-19-19 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Benzene** | 71-43-2 | **95.4** | 1.01 | mg/kg | 12.16.19 18.58 | | 500 |
| **Toluene** | 108-88-3 | **393** | 2.02 | mg/kg | 12.17.19 13.47 | D | 1000 |
| **Ethylbenzene** | 100-41-4 | **78.2** | 1.01 | mg/kg | 12.16.19 18.58 | | 500 |
| **m,p-Xylenes** | 179601-23-1 | **242** | 2.02 | mg/kg | 12.16.19 18.58 | | 500 |
| **o-Xylene** | 95-47-6 | **90.4** | 1.01 | mg/kg | 12.16.19 18.58 | | 500 |
| **Total Xylenes** | 1330-20-7 | **332** | 1.01 | mg/kg | 12.16.19 18.58 | | 500 |
| **Total BTEX** | | **899** | 1.01 | mg/kg | 12.17.19 13.47 | | 1000 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 164 | % | 70-130 | 12.16.19 18.58 | ** |
| 1,4-Difluorobenzene | 540-36-3 | 146 | % | 70-130 | 12.16.19 18.58 | ** |

# Certificate of Analytical Results 645827

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02** | Matrix: | Soil | Date Received: | 12.10.19 16.25 |
| Lab Sample Id: | 645827-002 | Date Collected: | 12.10.19 12.25 | Sample Depth: | 0.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 12.13.19 08.30 | Basis: | Wet Weight |
| Seq Number: | 3110518 | | | SUB: | T104704400-19-19 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **20.4** | 4.97 | mg/kg | 12.13.19 09.24 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DVM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 12.12.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110381 | | | SUB: | T104704400-19-19 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 12.13.19 04.27 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **583** | 50.0 | mg/kg | 12.13.19 04.27 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **90.6** | 50.0 | mg/kg | 12.13.19 04.27 | | 1 |
| **Total GRO-DRO** | PHC628 | **583** | 50.0 | mg/kg | 12.13.19 04.27 | | 1 |
| **Total TPH** | PHC635 | **674** | 50.0 | mg/kg | 12.13.19 04.27 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 102 | % | 70-135 | 12.13.19 04.27 | |
| o-Terphenyl | 84-15-1 | 119 | % | 70-135 | 12.13.19 04.27 | |

# Certificate of Analytical Results 645827

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS02** | Matrix: | Soil | Date Received: | 12.10.19 16.25 |
| Lab Sample Id: | 645827-002 | Date Collected: | 12.10.19 12.25 | Sample Depth: | 0.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | KTL | | | % Moisture: | |
| Analyst: | KTL | Date Prep: | 12.16.19 12.00 | Basis: | Wet Weight |
| Seq Number: | 3110704 | | | SUB: | T104704400-19-19 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Benzene** | 71-43-2 | **0.00394** | 0.00201 | mg/kg | 12.16.19 18.17 | | 1 |
| **Toluene** | 108-88-3 | **0.00759** | 0.00201 | mg/kg | 12.16.19 18.17 | | 1 |
| Ethylbenzene | 100-41-4 | <0.00201 | 0.00201 | mg/kg | 12.16.19 18.17 | U | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.00449** | 0.00402 | mg/kg | 12.16.19 18.17 | | 1 |
| **o-Xylene** | 95-47-6 | **0.00225** | 0.00201 | mg/kg | 12.16.19 18.17 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.00674** | 0.00201 | mg/kg | 12.16.19 18.17 | | 1 |
| **Total BTEX** | | **0.0183** | 0.00201 | mg/kg | 12.16.19 18.17 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 113 | % | 70-130 | 12.16.19 18.17 | |
| 4-Bromofluorobenzene | 460-00-4 | 99 | % | 70-130 | 12.16.19 18.17 | |

# Certificate of Analytical Results 645827

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03** | Matrix: | Soil | Date Received: | 12.10.19 16.25 |
| Lab Sample Id: | 645827-003 | Date Collected: | 12.10.19 12.30 | Sample Depth: | 0.5 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | CHE | | | % Moisture: | |
| Analyst: | CHE | Date Prep: | 12.13.19 08.30 | Basis: | Wet Weight |
| Seq Number: | 3110518 | | | SUB: | T104704400-19-19 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **65.6** | 5.01 | mg/kg | 12.13.19 09.29 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DVM | | | % Moisture: | |
| Analyst: | ARM | Date Prep: | 12.12.19 13.00 | Basis: | Wet Weight |
| Seq Number: | 3110381 | | | SUB: | T104704400-19-19 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **25400** | 499 | mg/kg | 12.13.19 09.33 | | 10 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **58500** | 499 | mg/kg | 12.13.19 09.33 | | 10 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **7300** | 499 | mg/kg | 12.13.19 09.33 | | 10 |
| **Total GRO-DRO** | PHC628 | **83900** | 499 | mg/kg | 12.13.19 09.33 | | 10 |
| **Total TPH** | PHC635 | **91200** | 499 | mg/kg | 12.13.19 09.33 | | 10 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 108 | % | 70-135 | 12.13.19 09.33 | |
| o-Terphenyl | 84-15-1 | 89 | % | 70-135 | 12.13.19 09.33 | |

# Certificate of Analytical Results 645827

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SS03** | Matrix: | Soil | Date Received: | 12.10.19 16.25 |
| Lab Sample Id: | 645827-003 | Date Collected: | 12.10.19 12.30 | Sample Depth: | 0.5 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | KTL | | | % Moisture: | |
| Analyst: | KTL | Date Prep: | 12.16.19 12.00 | Basis: | Wet Weight |
| Seq Number: | 3110704 | | | SUB: | T104704400-19-19 |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Benzene** | 71-43-2 | **154** | 2.00 | mg/kg | 12.16.19 19.18 | | 1000 |
| **Toluene** | 108-88-3 | **642** | 4.00 | mg/kg | 12.17.19 14.08 | D | 2000 |
| **Ethylbenzene** | 100-41-4 | **134** | 2.00 | mg/kg | 12.16.19 19.18 | | 1000 |
| **m,p-Xylenes** | 179601-23-1 | **438** | 4.00 | mg/kg | 12.16.19 19.18 | | 1000 |
| **o-Xylene** | 95-47-6 | **160** | 2.00 | mg/kg | 12.16.19 19.18 | | 1000 |
| **Total Xylenes** | 1330-20-7 | **598** | 2.00 | mg/kg | 12.16.19 19.18 | | 1000 |
| **Total BTEX** | | **1530** | 2.00 | mg/kg | 12.17.19 14.08 | | 2000 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 152 | % | 70-130 | 12.16.19 19.18 | ** |
| 1,4-Difluorobenzene | 540-36-3 | 138 | % | 70-130 | 12.16.19 19.18 | ** |

# 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

# QC Summary 645827



## LT Environmental, Inc.

Mis Amigos CTB

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3110518 — Matrix: Solid — Date Prep: 12.13.19
MB Sample Id: 7692386-1-BLK — LCS Sample Id: 7692386-1-BKS — LCSD Sample Id: 7692386-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.858 | 250 | 249 | 100 | 249 | 100 | 90-110 | 0 | 20 | mg/kg | 12.13.19 08:52 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3110518 — Matrix: Soil — Date Prep: 12.13.19
Parent Sample Id: 645827-001 — MS Sample Id: 645827-001 S — MSD Sample Id: 645827-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 225 | 252 | 446 | 88 | 453 | 90 | 90-110 | 2 | 20 | mg/kg | 12.13.19 14:42 | X |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3110518 — Matrix: Soil — Date Prep: 12.13.19
Parent Sample Id: 646178-009 — MS Sample Id: 646178-009 S — MSD Sample Id: 646178-009 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 150 | 249 | 387 | 95 | 389 | 96 | 90-110 | 1 | 20 | mg/kg | 12.13.19 09:08 | |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3110381 — Matrix: Solid — Date Prep: 12.12.19
MB Sample Id: 7692316-1-BLK — LCS Sample Id: 7692316-1-BKS — LCSD Sample Id: 7692316-1-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 | 1100 | 110 | 1100 | 110 | 70-135 | 0 | 20 | mg/kg | 12.12.19 22:42 | |
| Diesel Range Organics (DRO) | <15.0 | 1000 | 1100 | 110 | 1110 | 111 | 70-135 | 1 | 20 | mg/kg | 12.12.19 22:42 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 101 | | 129 | | 126 | | 70-135 | % | 12.12.19 22:42 |
| o-Terphenyl | 102 | | 115 | | 110 | | 70-135 | % | 12.12.19 22:42 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3110381 — Matrix: Solid — Date Prep: 12.12.19
MB Sample Id: 7692316-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 12.12.19 22:23 | |

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

# QC Summary 645827



## LT Environmental, Inc.

Mis Amigos CTB

**Analytical Method:** TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3110381 | Matrix: Soil | Date Prep: 12.12.19
Parent Sample Id: 646079-001 | MS Sample Id: 646079-001 S | MSD Sample Id: 646079-001 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 | 998 | 1110 | 111 | 1100 | 110 | 70-135 | 1 | 20 | mg/kg | 12.12.19 23:39 | |
| Diesel Range Organics (DRO) | 32.9 | 998 | 1110 | 108 | 1110 | 108 | 70-135 | 0 | 20 | mg/kg | 12.12.19 23:39 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 128 | | 126 | | 70-135 | % | 12.12.19 23:39 |
| o-Terphenyl | 115 | | 111 | | 70-135 | % | 12.12.19 23:39 |

**Analytical Method:** BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3110704 | Matrix: Solid | Date Prep: 12.16.19
MB Sample Id: 7692505-1-BLK | LCS Sample Id: 7692505-1-BKS | LCSD Sample Id: 7692505-1-BSD

| 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 | 0.126 | 126 | 0.111 | 111 | 70-130 | 13 | 35 | mg/kg | 12.16.19 16:05 | |
| Toluene | <0.00200 | 0.100 | 0.113 | 113 | 0.0998 | 100 | 70-130 | 12 | 35 | mg/kg | 12.16.19 16:05 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.113 | 113 | 0.0998 | 100 | 70-130 | 12 | 35 | mg/kg | 12.16.19 16:05 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.229 | 115 | 0.203 | 102 | 70-130 | 12 | 35 | mg/kg | 12.16.19 16:05 | |
| o-Xylene | <0.00200 | 0.100 | 0.111 | 111 | 0.0989 | 99 | 70-130 | 12 | 35 | mg/kg | 12.16.19 16:05 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 113 | | 112 | | 111 | | 70-130 | % | 12.16.19 16:05 |
| 4-Bromofluorobenzene | 91 | | 96 | | 94 | | 70-130 | % | 12.16.19 16:05 |

**Analytical Method:** BTEX by EPA 8021B | Prep Method: SW5030B
Seq Number: 3110704 | Matrix: Soil | Date Prep: 12.16.19
Parent Sample Id: 645827-002 | MS Sample Id: 645827-002 S | MSD Sample Id: 645827-002 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.00394 | 0.0994 | 0.111 | 108 | 0.0939 | 90 | 70-130 | 17 | 35 | mg/kg | 12.16.19 16:46 | |
| Toluene | 0.00759 | 0.0994 | 0.0954 | 88 | 0.0798 | 72 | 70-130 | 18 | 35 | mg/kg | 12.16.19 16:46 | |
| Ethylbenzene | 0.00130 | 0.0994 | 0.0695 | 69 | 0.0538 | 53 | 70-130 | 25 | 35 | mg/kg | 12.16.19 16:46 | X |
| m,p-Xylenes | 0.00449 | 0.199 | 0.144 | 70 | 0.112 | 54 | 70-130 | 25 | 35 | mg/kg | 12.16.19 16:46 | X |
| o-Xylene | 0.00225 | 0.0994 | 0.0726 | 71 | 0.0566 | 54 | 70-130 | 25 | 35 | mg/kg | 12.16.19 16:46 | X |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 116 | | 114 | | 70-130 | % | 12.16.19 16:46 |
| 4-Bromofluorobenzene | 109 | | 107 | | 70-130 | % | 12.16.19 16:46 |

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

# Chain of Custody

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com

Work Order No: 445827

Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Dan Moir | Bill to: (if different) | Kyle Littrel |
| Company Name: | LT Environmental, Inc., Permian office | Company Name: | XTO-Energy |
| Address: | 3300 North A Street | Address: | |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM |
| Phone: | 432.704.5178 | Email: | dmoir@ltenv.com rmcafee@ltenv.com |

**Work Order Comments**

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

| | | | |
|---|---|---|---|
| Project Name: | Mis Amigos CTB | Turn Around | |
| Project Number: | | Routine | ☑ |
| P.O. Number: | Spill Date 11-20-19 | Rush: | |
| Sampler's Name: | Robert McAfee | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 2.0 | Thermometer ID | TNM007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 3 |

ANALYSIS REQUEST

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| SS01 | S | 12/10/19 | 1220 | 0.5' | 1 | X | X | X |
| SS02 | S | 12/10/19 | 1225 | 0.5' | 1 | X | X | X |
| SS03 | S | 12/10/19 | 1230 | 0.5' | 1 | X | X | X |

**Work Order Notes**

TAT starts the day recevied by the lab, if received by 4:30pm

**Sample Comments**

discrete

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

*Circle Method(s) and Metal(s) to be analyzed* **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

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 $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | Robert McAfee | | 12/10/19 16:25 | 2 | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# Inter-Office Shipment





**IOS Number** **53999**

Date/Time: 12/11/19 10:05
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.:

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

| Sample Id | Matrix | Client Sample Id | Sample Collection | Method | Method Name | Lab Due | HT Due | PM | Analytes | Sign |
|---|---|---|---|---|---|---|---|---|---|---|
| 645827-001 | S | SS01 | 12/10/19 12:20 | SW8021B | BTEX by EPA 8021B | 12/16/19 | 12/24/19 | JKR | BZ BZME EBZ XYLENES | |
| 645827-001 | S | SS01 | 12/10/19 12:20 | SW8015MOD_NM | TPH by SW8015 Mod | 12/16/19 | 12/24/19 | JKR | GRO-DRO PHCC10C28 PI | |
| 645827-001 | S | SS01 | 12/10/19 12:20 | E300_CL | Chloride by EPA 300 | 12/16/19 | 06/07/20 | JKR | CL | |
| 645827-002 | S | SS02 | 12/10/19 12:25 | SW8015MOD_NM | TPH by SW8015 Mod | 12/16/19 | 12/24/19 | JKR | GRO-DRO PHCC10C28 PI | |
| 645827-002 | S | SS02 | 12/10/19 12:25 | SW8021B | BTEX by EPA 8021B | 12/16/19 | 12/24/19 | JKR | BZ BZME EBZ XYLENES | |
| 645827-002 | S | SS02 | 12/10/19 12:25 | E300_CL | Chloride by EPA 300 | 12/16/19 | 06/07/20 | JKR | CL | |
| 645827-003 | S | SS03 | 12/10/19 12:30 | SW8015MOD_NM | TPH by SW8015 Mod | 12/16/19 | 12/24/19 | JKR | GRO-DRO PHCC10C28 PI | |
| 645827-003 | S | SS03 | 12/10/19 12:30 | SW8021B | BTEX by EPA 8021B | 12/16/19 | 12/24/19 | JKR | BZ BZME EBZ XYLENES | |
| 645827-003 | S | SS03 | 12/10/19 12:30 | E300_CL | Chloride by EPA 300 | 12/16/19 | 06/07/20 | JKR | CL | |

**Inter Office Shipment or Sample Comments:**

Relinquished By: Elizabeth McClellan

Date Relinquished: 12/11/2019

Received By: Brianna Teel

Date Received: 12/11/2019 16:06

Cooler Temperature: 2.3

# XENCO Laboratories

## Inter Office Report- Sample Receipt Checklist

**Sent To:** Midland

**IOS #:** 53999

**Acceptable Temperature Range: 0 - 6 degC**
**Air and Metal samples Acceptable Range: Ambient**
**Temperature Measuring device used : R8**

**Sent By:** Elizabeth McClellan **Date Sent:** 12/11/2019 10:05 AM

**Received By:** Brianna Teel **Date Received:** 12/11/2019 04:06 PM

| Sample Receipt Checklist | | Comments |
|---|---|---|
| #1 *Temperature of cooler(s)? | 2.3 | |
| #2 *Shipping container in good condition? | **Yes** | |
| #3 *Samples received with appropriate temperature? | **Yes** | |
| #4 *Custody Seals intact on shipping container/ cooler? | **Yes** | |
| #5 *Custody Seals Signed and dated for Containers/coolers | **Yes** | |
| #6 *IOS present? | **Yes** | |
| #7 Any missing/extra samples? | **No** | |
| #8 IOS agrees with sample label(s)/matrix? | **Yes** | |
| #9 Sample matrix/ properties agree with IOS? | **Yes** | |
| #10 Samples in proper container/ bottle? | **Yes** | |
| #11 Samples properly preserved? | **Yes** | |
| #12 Sample container(s) intact? | **Yes** | |
| #13 Sufficient sample amount for indicated test(s)? | **Yes** | |
| #14 All samples received within hold time? | **Yes** | |

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

**NonConformance:**

**Corrective Action Taken:**

**Nonconformance Documentation**

**Contact:** _____ **Contacted by :** _____ **Date:** _____

**Checklist reviewed by:** Brianna Teel Date: 12/11/2019

Brianna Teel

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 12/10/2019 04:25:00 PM

**Work Order #:** 645827

**Acceptable Temperature Range: 0 - 6 degC**
**Air and Metal samples Acceptable Range: Ambient**

**Temperature Measuring device used : T-NM-007**

| Sample Receipt Checklist | | Comments |
|---|---|---|
| #1 *Temperature of cooler(s)? | 2 | |
| #2 *Shipping container in good condition? | **Yes** | |
| #3 *Samples received on ice? | **Yes** | |
| #4 *Custody Seals intact on shipping container/ cooler? | **Yes** | |
| #5 Custody Seals intact on sample bottles? | **Yes** | |
| #6*Custody Seals Signed and dated? | **Yes** | |
| #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)? | **Yes** | Subbed to Midland. |
| #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:** Elizabeth McClellan Date: 12/10/2019

**Checklist reviewed by:** Jessica Kramer Date: 12/12/2019

Jessica Kramer

# Analytical Report 650583

## for

## LT Environmental, Inc.

**Project Manager: Dan Moir**

**Mis Amigos CTB**

**012919291**

**30-JAN-20**

Collected By: Client


**1089 N Canal Street**
**Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

30-JAN-20

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

Reference: XENCO Report No(s): **650583**
**Mis Amigos CTB**
Project Address: Lea

**Dan Moir**:

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) 650583. 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. 650583 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,

Jessica Kramer

**Jessica Kramer**
Project Assistant

# Sample Cross Reference 650583

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| BH01 | S | 01-28-20 11:54 | 6 ft | 650583-001 |
| BH01A | S | 01-28-20 12:10 | 9 ft | 650583-002 |
| BH01B | S | 01-28-20 12:54 | 12.75 ft | Not Analyzed |

# CASE NARRATIVE

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

***Project Name: Mis Amigos CTB***

Project ID: *012919291*
Work Order Number(s): *650583*

Report Date: *30-JAN-20*
Date Received: *01/28/2020*

**Sample receipt non conformances and comments:**

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

None

**Analytical non conformances and comments:**

Batch: LBA-3114753 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3114902 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

# Certificate of Analysis Summary 650583

## LT Environmental, Inc., Arvada, CO

## Project Name: Mis Amigos CTB

**Project Id:** 012919291
**Contact:** Dan Moir
**Project Location:** Lea

**Date Received in Lab:** Tue Jan-28-20 04:15 pm
**Report Date:** 30-JAN-20
**Project Manager:** Jessica Kramer

| *Analysis Requested* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Lab Id:*** | 650583-001 | | 650583-002 | | | | | |
| | ***Field Id:*** | BH01 | | BH01A | | | | | |
| | ***Depth:*** | 6- ft | | 9- ft | | | | | |
| | ***Matrix:*** | SOIL | | SOIL | | | | | |
| | ***Sampled:*** | Jan-28-20 11:54 | | Jan-28-20 12:10 | | | | | |
| **BTEX by EPA 8021B** | ***Extracted:*** | Jan-28-20 18:00 | | Jan-29-20 12:00 | | | | | |
| | ***Analyzed:*** | Jan-28-20 21:54 | | Jan-29-20 19:46 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Benzene | | 0.0254 | 0.0208 | <0.00201 | 0.00201 | | | | |
| Toluene | | 1.77 | 0.0833 | 0.0285 | 0.00201 | | | | |
| Ethylbenzene | | 1.34 | 0.0833 | 0.0235 | 0.00201 | | | | |
| m,p-Xylenes | | 4.70 | 0.167 | 0.0814 | 0.00402 | | | | |
| o-Xylene | | 2.47 | 0.0833 | 0.0447 | 0.00201 | | | | |
| Total Xylenes | | 7.17 | 0.0833 | 0.126 | 0.00201 | | | | |
| Total BTEX | | 10.3 | 0.0208 | 0.178 | 0.00201 | | | | |
| **Chloride by EPA 300** | ***Extracted:*** | Jan-28-20 17:30 | | Jan-29-20 17:51 | | | | | |
| | ***Analyzed:*** | Jan-28-20 17:52 | | Jan-29-20 21:26 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Chloride | | 106 | 10.0 | 540 | 9.88 | | | | |
| **TPH by SW8015 Mod** | ***Extracted:*** | Jan-28-20 17:00 | | Jan-29-20 17:30 | | | | | |
| | ***Analyzed:*** | Jan-28-20 17:39 | | Jan-30-20 13:56 | | | | | |
| | ***Units/RL:*** | mg/kg | RL | mg/kg | RL | | | | |
| Gasoline Range Hydrocarbons (GRO) | | 322 | 50.2 | <50.0 | 50.0 | | | | |
| Diesel Range Organics (DRO) | | 3800 | 50.2 | 461 | 50.0 | | | | |
| Motor Oil Range Hydrocarbons (MRO) | | 402 | 50.2 | <50.0 | 50.0 | | | | |
| Total GRO-DRO | | 4120 | 50.2 | 461 | 50.0 | | | | |
| Total TPH | | 4520 | 50.2 | 461 | 50.0 | | | | |





Version: 1.%

Jessica Kramer
Project Assistant

# Certificate of Analytical Results 650583

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01** | Matrix: | Soil | Date Received: | 01.28.20 16.15 |
| Lab Sample Id: | 650583-001 | Date Collected: | 01.28.20 11.54 | Sample Depth: | 6 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.28.20 17.30 | Basis: | Wet Weight |
| Seq Number: | 3114772 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **106** | 10.0 | mg/kg | 01.28.20 17.52 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.28.20 17.00 | Basis: | Wet Weight |
| Seq Number: | 3114766 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **322** | 50.2 | mg/kg | 01.28.20 17.39 | | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **3800** | 50.2 | mg/kg | 01.28.20 17.39 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **402** | 50.2 | mg/kg | 01.28.20 17.39 | | 1 |
| **Total GRO-DRO** | PHC628 | **4120** | 50.2 | mg/kg | 01.28.20 17.39 | | 1 |
| **Total TPH** | PHC635 | **4520** | 50.2 | mg/kg | 01.28.20 17.39 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 127 | % | 70-135 | 01.28.20 17.39 | |
| o-Terphenyl | 84-15-1 | 113 | % | 70-135 | 01.28.20 17.39 | |

# Certificate of Analytical Results 650583

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01** | Matrix: | Soil | Date Received: | 01.28.20 16.15 |
| Lab Sample Id: | 650583-001 | Date Collected: | 01.28.20 11.54 | Sample Depth: | 6 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.28.20 18.00 | Basis: | Wet Weight |
| Seq Number: | 3114753 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Benzene** | 71-43-2 | **0.0254** | 0.0208 | mg/kg | 01.28.20 21.54 | | 1 |
| **Toluene** | 108-88-3 | **1.77** | 0.0833 | mg/kg | 01.28.20 21.54 | | 1 |
| **Ethylbenzene** | 100-41-4 | **1.34** | 0.0833 | mg/kg | 01.28.20 21.54 | | 1 |
| **m,p-Xylenes** | 179601-23-1 | **4.70** | 0.167 | mg/kg | 01.28.20 21.54 | | 1 |
| **o-Xylene** | 95-47-6 | **2.47** | 0.0833 | mg/kg | 01.28.20 21.54 | | 1 |
| **Total Xylenes** | 1330-20-7 | **7.17** | 0.0833 | mg/kg | 01.28.20 21.54 | | 1 |
| **Total BTEX** | | **10.3** | 0.0208 | mg/kg | 01.28.20 21.54 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 109 | % | 70-130 | 01.28.20 21.54 | |
| 1,4-Difluorobenzene | 540-36-3 | 99 | % | 70-130 | 01.28.20 21.54 | |

# Certificate of Analytical Results 650583

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01A** | Matrix: | Soil | Date Received: | 01.28.20 16.15 |
| Lab Sample Id: | 650583-002 | Date Collected: | 01.28.20 12.10 | Sample Depth: | 9 ft |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | Chloride by EPA 300 | | | Prep Method: | E300P |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.29.20 17.51 | Basis: | Wet Weight |
| Seq Number: | 3114900 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **540** | 9.88 | mg/kg | 01.29.20 21.26 | | 1 |

| | | | | | |
|---|---|---|---|---|---|
| Analytical Method: | TPH by SW8015 Mod | | | Prep Method: | SW8015P |
| Tech: | DTH | | | % Moisture: | |
| Analyst: | DTH | Date Prep: | 01.29.20 17.30 | Basis: | Wet Weight |
| Seq Number: | 3115017 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <50.0 | 50.0 | mg/kg | 01.30.20 13.56 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **461** | 50.0 | mg/kg | 01.30.20 13.56 | | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <50.0 | 50.0 | mg/kg | 01.30.20 13.56 | U | 1 |
| **Total GRO-DRO** | PHC628 | **461** | 50.0 | mg/kg | 01.30.20 13.56 | | 1 |
| **Total TPH** | PHC635 | **461** | 50.0 | mg/kg | 01.30.20 13.56 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 132 | % | 70-135 | 01.30.20 13.56 | |
| o-Terphenyl | 84-15-1 | 121 | % | 70-135 | 01.30.20 13.56 | |

# Certificate of Analytical Results 650583

## LT Environmental, Inc., Arvada, CO

Mis Amigos CTB

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **BH01A** | Matrix: | Soil | Date Received: | 01.28.20 16.15 |
| Lab Sample Id: | 650583-002 | Date Collected: | 01.28.20 12.10 | Sample Depth: | 9 ft |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5030B |
| Tech: | MAB | | | % Moisture: | |
| Analyst: | MAB | Date Prep: | 01.29.20 12.00 | Basis: | Wet Weight |
| Seq Number: | 3114902 | | | | |

| Parameter | Cas Number | Result | RL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.00201 | 0.00201 | mg/kg | 01.29.20 19.46 | U | 1 |
| **Toluene** | 108-88-3 | **0.0285** | 0.00201 | mg/kg | 01.29.20 19.46 | | 1 |
| **Ethylbenzene** | 100-41-4 | **0.0235** | 0.00201 | mg/kg | 01.29.20 19.46 | | 1 |
| **m,p-Xylenes** | 179601-23-1 | **0.0814** | 0.00402 | mg/kg | 01.29.20 19.46 | | 1 |
| **o-Xylene** | 95-47-6 | **0.0447** | 0.00201 | mg/kg | 01.29.20 19.46 | | 1 |
| **Total Xylenes** | 1330-20-7 | **0.126** | 0.00201 | mg/kg | 01.29.20 19.46 | | 1 |
| **Total BTEX** | | **0.178** | 0.00201 | mg/kg | 01.29.20 19.46 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 103 | % | 70-130 | 01.29.20 19.46 | |
| 1,4-Difluorobenzene | 540-36-3 | 101 | % | 70-130 | 01.29.20 19.46 | |

# 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

# QC Summary 650583



## LT Environmental, Inc.

Mis Amigos CTB

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114772 — Matrix: Solid — Date Prep: 01.28.20
MB Sample Id: 7695400-1-BLK — LCS Sample Id: 7695400-1-BKS — LCSD Sample Id: 7695400-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 247 | 99 | 247 | 99 | 90-110 | 0 | 20 | mg/kg | 01.28.20 15:49 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114900 — Matrix: Solid — Date Prep: 01.29.20
MB Sample Id: 7695510-1-BLK — LCS Sample Id: 7695510-1-BKS — LCSD Sample Id: 7695510-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <10.0 | 250 | 260 | 104 | 259 | 104 | 90-110 | 0 | 20 | mg/kg | 01.29.20 20:55 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114772 — Matrix: Soil — Date Prep: 01.28.20
Parent Sample Id: 650485-003 — MS Sample Id: 650485-003 S — MSD Sample Id: 650485-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 6.15 | 200 | 205 | 99 | 202 | 98 | 90-110 | 1 | 20 | mg/kg | 01.28.20 16:05 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114772 — Matrix: Soil — Date Prep: 01.28.20
Parent Sample Id: 650587-003 — MS Sample Id: 650587-003 S — MSD Sample Id: 650587-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 113 | 200 | 314 | 101 | 314 | 101 | 90-110 | 0 | 20 | mg/kg | 01.28.20 18:43 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3114900 — Matrix: Soil — Date Prep: 01.29.20
Parent Sample Id: 650762-006 — MS Sample Id: 650762-006 S — MSD Sample Id: 650762-006 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 4180 | 198 | 4400 | 111 | 4390 | 105 | 90-110 | 0 | 20 | mg/kg | 01.29.20 21:13 | X |

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

# QC Summary 650583



## LT Environmental, Inc.

Mis Amigos CTB

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3114766 — Matrix: Solid — Date Prep: 01.28.20
MB Sample Id: 7695384-1-BLK — LCS Sample Id: 7695384-1-BKS — LCSD Sample Id: 7695384-1-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) | <50.0 | 1000 | 1230 | 123 | 1240 | 124 | 70-135 | 1 | 35 | mg/kg | 01.28.20 10:37 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1190 | 119 | 1190 | 119 | 70-135 | 0 | 35 | mg/kg | 01.28.20 10:37 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 117 | | 116 | | 118 | | 70-135 | % | 01.28.20 10:37 |
| o-Terphenyl | 117 | | 110 | | 105 | | 70-135 | % | 01.28.20 10:37 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3115017 — Matrix: Solid — Date Prep: 01.29.20
MB Sample Id: 7695507-1-BLK — LCS Sample Id: 7695507-1-BKS — LCSD Sample Id: 7695507-1-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) | <50.0 | 1000 | 1140 | 114 | 1170 | 117 | 70-135 | 3 | 35 | mg/kg | 01.30.20 08:44 | |
| Diesel Range Organics (DRO) | <50.0 | 1000 | 1040 | 104 | 1000 | 100 | 70-135 | 4 | 35 | mg/kg | 01.30.20 08:44 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 92 | | 126 | | 129 | | 70-135 | % | 01.30.20 08:44 |
| o-Terphenyl | 84 | | 130 | | 122 | | 70-135 | % | 01.30.20 08:44 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3114766 — Matrix: Solid — Date Prep: 01.28.20
MB Sample Id: 7695384-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 01.28.20 12:34 | |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3115017 — Matrix: Solid — Date Prep: 01.29.20
MB Sample Id: 7695507-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <50.0 | mg/kg | 01.30.20 16:11 | |

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

# QC Summary 650583



## LT Environmental, Inc.

Mis Amigos CTB

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3114766 — Matrix: Soil — Date Prep: 01.28.20
Parent Sample Id: 650479-001 — MS Sample Id: 650479-001 S — MSD Sample Id: 650479-001 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) | <50.1 | 1000 | 1060 | 106 | 1030 | 103 | 70-135 | 3 | 35 | mg/kg | 01.28.20 12:54 | |
| Diesel Range Organics (DRO) | <50.1 | 1000 | 1050 | 105 | 1040 | 104 | 70-135 | 1 | 35 | mg/kg | 01.28.20 12:54 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 128 | | 127 | | 70-135 | % | 01.28.20 12:54 |
| o-Terphenyl | 124 | | 121 | | 70-135 | % | 01.28.20 12:54 |

**Analytical Method:** TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3115017 — Matrix: Soil — Date Prep: 01.29.20
Parent Sample Id: 650761-001 — MS Sample Id: 650761-001 S — MSD Sample Id: 650761-001 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) | <50.1 | 1000 | 991 | 99 | 1100 | 110 | 70-135 | 10 | 35 | mg/kg | 01.30.20 09:23 | |
| Diesel Range Organics (DRO) | <50.1 | 1000 | 859 | 86 | 1110 | 111 | 70-135 | 25 | 35 | mg/kg | 01.30.20 09:23 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111 | | 141 | ** | 70-135 | % | 01.30.20 09:23 |
| o-Terphenyl | 102 | | 131 | | 70-135 | % | 01.30.20 09:23 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3114753 — Matrix: Solid — Date Prep: 01.28.20
MB Sample Id: 7695397-1-BLK — LCS Sample Id: 7695397-1-BKS — LCSD Sample Id: 7695397-1-BSD

| 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 | 0.0928 | 93 | 0.0917 | 92 | 70-130 | 1 | 35 | mg/kg | 01.28.20 12:56 | |
| Toluene | <0.00200 | 0.100 | 0.0906 | 91 | 0.0886 | 89 | 70-130 | 2 | 35 | mg/kg | 01.28.20 12:56 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0859 | 86 | 0.0845 | 85 | 71-129 | 2 | 35 | mg/kg | 01.28.20 12:56 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.177 | 89 | 0.174 | 87 | 70-135 | 2 | 35 | mg/kg | 01.28.20 12:56 | |
| o-Xylene | <0.00200 | 0.100 | 0.0888 | 89 | 0.0870 | 87 | 71-133 | 2 | 35 | mg/kg | 01.28.20 12:56 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 102 | | 102 | | 70-130 | % | 01.28.20 12:56 |
| 4-Bromofluorobenzene | 95 | | 96 | | 95 | | 70-130 | % | 01.28.20 12:56 |

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

# QC Summary 650583

## LT Environmental, Inc.

Mis Amigos CTB

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3114902 — Matrix: Solid — Date Prep: 01.29.20
MB Sample Id: 7695477-1-BLK — LCS Sample Id: 7695477-1-BKS — LCSD Sample Id: 7695477-1-BSD

| 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 | 0.0946 | 95 | 0.100 | 100 | 70-130 | 6 | 35 | mg/kg | 01.29.20 12:18 | |
| Toluene | <0.00200 | 0.100 | 0.0922 | 92 | 0.0964 | 96 | 70-130 | 4 | 35 | mg/kg | 01.29.20 12:18 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.0888 | 89 | 0.0915 | 92 | 71-129 | 3 | 35 | mg/kg | 01.29.20 12:18 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.182 | 91 | 0.187 | 94 | 70-135 | 3 | 35 | mg/kg | 01.29.20 12:18 | |
| o-Xylene | <0.00200 | 0.100 | 0.0917 | 92 | 0.0945 | 95 | 71-133 | 3 | 35 | mg/kg | 01.29.20 12:18 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 103 | | 102 | | 102 | | 70-130 | % | 01.29.20 12:18 |
| 4-Bromofluorobenzene | 98 | | 94 | | 92 | | 70-130 | % | 01.29.20 12:18 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3114753 — Matrix: Soil — Date Prep: 01.28.20
Parent Sample Id: 650479-001 — MS Sample Id: 650479-001 S — MSD Sample Id: 650479-001 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 | 0.100 | 0.111 | 111 | 0.121 | 122 | 70-130 | 9 | 35 | mg/kg | 01.28.20 13:37 | |
| Toluene | <0.00200 | 0.100 | 0.108 | 108 | 0.117 | 118 | 70-130 | 8 | 35 | mg/kg | 01.28.20 13:37 | |
| Ethylbenzene | <0.00200 | 0.100 | 0.104 | 104 | 0.112 | 113 | 71-129 | 7 | 35 | mg/kg | 01.28.20 13:37 | |
| m,p-Xylenes | <0.00400 | 0.200 | 0.212 | 106 | 0.230 | 116 | 70-135 | 8 | 35 | mg/kg | 01.28.20 13:37 | |
| o-Xylene | <0.00200 | 0.100 | 0.105 | 105 | 0.114 | 115 | 71-133 | 8 | 35 | mg/kg | 01.28.20 13:37 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 102 | | 104 | | 70-130 | % | 01.28.20 13:37 |
| 4-Bromofluorobenzene | 100 | | 97 | | 70-130 | % | 01.28.20 13:37 |

**Analytical Method:** BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3114902 — Matrix: Soil — Date Prep: 01.29.20
Parent Sample Id: 650618-001 — MS Sample Id: 650618-001 S — MSD Sample Id: 650618-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | 0.101 | 0.105 | 104 | 0.0932 | 93 | 70-130 | 12 | 35 | mg/kg | 01.29.20 12:59 | |
| Toluene | <0.00202 | 0.101 | 0.102 | 101 | 0.0912 | 91 | 70-130 | 11 | 35 | mg/kg | 01.29.20 12:59 | |
| Ethylbenzene | <0.00202 | 0.101 | 0.0984 | 97 | 0.0889 | 89 | 71-129 | 10 | 35 | mg/kg | 01.29.20 12:59 | |
| m,p-Xylenes | <0.00404 | 0.202 | 0.203 | 100 | 0.183 | 92 | 70-135 | 10 | 35 | mg/kg | 01.29.20 12:59 | |
| o-Xylene | <0.00202 | 0.101 | 0.101 | 100 | 0.0909 | 91 | 71-133 | 11 | 35 | mg/kg | 01.29.20 12:59 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 102 | | 70-130 | % | 01.29.20 12:59 |
| 4-Bromofluorobenzene | 97 | | 94 | | 70-130 | % | 01.29.20 12:59 |

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

# Chain of Custody

Work Order No: 1650583

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com

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| | | | |
|---|---|---|---|
| Project Manager: | Dan Moir | Bill to: (if different) | Kyle Littrell |
| Company Name: | LT Environmental, Inc., Permian office | Company Name: | XTO Energy |
| Address: | 3300 North A Street | Address: | |
| City, State ZIP: | Midland, Tx 79705 | City, State ZIP: | |
| Phone: | (432) 236-3849 | Email: | wmather@ltenv.com, dmoir@ltenv.com |

**Work Order Comments**

Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

| | | | |
|---|---|---|---|
| Project Name: | Mis Amigos CTB | Turn Around | |
| Project Number: | 012919291 | Routine ☐ | |
| P.O. Number: | Lea | Rush: 24hr | |
| Sampler's Name: | William Mather | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 1.0 | Thermometer ID | |
| Received Intact: | (Yes) No | TNM007 | |
| Cooler Custody Seals: | Yes (No) N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | 3 |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) | HOLD | Work Order Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| BH01 | s | 1/28/2020 | 11:54 | 6' | 1 | X | X | X | | Discrete |
| BH01A | s | 1/28/2020 | 12:10 | 9' | 1 | | | | X | Discrete. HOLD |
| BH01B | s | 1/28/2020 | 12:54 | 12.75' | 1 | | | | X | Discrete, HOLD |

ANALYSIS REQUEST

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Comments

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

*Circle Method(s) and Metal(s) to be analyzed* **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

**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 $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.**

| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | | 1/28/20 16:15 | 2 | | |
| | | | 4 | | |
| | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** LT Environmental, Inc.

**Date/ Time Received:** 01/28/2020 04:15:00 PM

**Work Order #:** 650583

**Acceptable Temperature Range: 0 - 6 degC**
**Air and Metal samples Acceptable Range: Ambient**

**Temperature Measuring device used : T-NM-007**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | 1 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **Yes** |
| #5 Custody Seals intact on sample bottles? | **Yes** |
| #6*Custody Seals Signed and dated? | **Yes** |
| #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:** Elizabeth McClellan Date: 01/28/2020

**Checklist reviewed by:** Jessica Kramer Date: 01/29/2020

Jessica Kramer