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	NAB1916829975
District RP	2RP-5488
Facility ID	
Application ID	pAB1916829056

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)* NAB1916829975
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.644094° Longitude -103.956946°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Bubbles 22 15 Federal #003H	Site Type Production Well Facility
Date Release Discovered 6/1/2019	API# *(if applicable)* 30-015-45253

Unit Letter	Section	Township	Range	County
J	22	19S	30E	Eddy

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

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)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 10.5	Volume Recovered (bbls) 10
	Is the concentration of total dissolved solids (TDS) 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

A contract employee allowed an overflow of frac tanks to occur due to inattention and incorrect placement of valves. Fluid was released to lined temporary containment and to the well pad due to overspray. Additional third party resources have been retained to assist with remediation. Remediation can begin as soon as well completion activities are concluded at the well pad.

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Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAB1916829975
District RP	2RP-5488
Facility ID	
Application ID	pAB1916829056

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

Initial Response

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

☒ 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: 6/13/19

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

OCD Only

Received by: Amalia Bustamante Date: 6/17/2019

Incident ID	NAB1916829975
District RP	2RP-5488
Facility ID	
Application ID	pAB1916829056

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?	51-100 (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	NAB1916829975
District RP	2RP-5488
Facility ID	
Application ID	pAB1916829056

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: 2/27/2020

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

OCD Only

Received by: Date:

Incident ID	NAB1916829975
District RP	2RP-5488
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Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: _____ Date: 2/27/2020

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

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

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

February 27, 2020

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

RE: Closure Request
Bubbles 22-15 Federal #003H
Remediation Permit Number 2RP-5488
Incident Number NAB1916829975
Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment, excavation, and soil sampling activities at the Bubbles 22 15 Federal #003H (Site) located in Unit J, Section 22, Township 19 South, Range 30 East, in Eddy 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 the release of produced water at the Site. Based on field observations, field screenings, and laboratory analytical results from the soil sampling activities, XTO is submitting this Closure Request and requesting no further action (NFA) for Remediation Permit (RP) Number 2RP-5488.

RELEASE BACKGROUND

On June 1, 2019 a frac tank overflowed due to contractor inattention and incorrect placement of values, resulting in the release of 10.5 barrels (bbls) of produced water into a temporary lined containment area and spray onto the well pad. A vacuum truck was dispatched to the Site to recover freestanding fluids; approximately 10 bbls of produced water were recovered from the containment. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on June 13, 2019 and was assigned RP Number 2RP-5488.

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 approximately 50 and 100 feet below ground surface (bgs) based on the nearest groundwater well data. The nearest permitted groundwater well with depth to groundwater data is the New Mexico Office of State Engineer (NMOSE) well number CP 00722, located approximately 1.58 miles southeast from the Site. The

groundwater well has a depth to groundwater of 65 feet bgs and a total depth of 350 feet bgs. The closest continuously flowing water or significant watercourse to the Site is a freshwater emergent wetland located approximately 1,966 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is located in a high 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): 100 mg/kg
- Chloride: 600 mg/kg

SITE ASSESSMENT, DELINEATION, AND EXCAVATION ACTIVITIES

On July 1, 2019, LTE personnel inspected the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. LTE personnel collected five preliminary soil samples (SS01 through SS05) from within the release extent and to the east, west, and south of the release extent from a depth of 0.5 feet bgs to assess the lateral extent of impacted surface soil. Soil from the preliminary soil samples was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

The preliminary 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-gasoline range organics (GRO),TPH-diesel range organics (DRO), TPH-oil range organics (ORO) following EPA Method 8015M/D, and chloride following EPA Method 300.0.

Further delineation and remediation efforts were postponed, however, as ongoing hydraulic fracturing operations at the well pad near the release resulted in activity restrictions being imposed due to safety concerns at the Site. Per 19.15.29.12.B.(1) NMAC, two extensions for

submission of a Remediation Plan or Closure Request were granted. The initial extension was requested and approved August 29, 2019, and the second was approved November 20, 2019, by the NMOCD District II office extending the deadline to February 28, 2020.

On November 13, 2019, after flowback operations were completed, LTE personnel returned to the Site to oversee additional soil assessment activities. The area of the release extent was excavated to a depth of 0.5 feet bgs. Potholes PH01, PH02, and PH03 were advanced at three locations via track hoe within the release extent. Delineation soil samples (PH01 through PH03) were collected from a depth of approximately one foot bgs and two feet bgs. Soil from the three potholes was field screened utilizing a PID and Hach® chloride QuanTab® test strips. Field screening results and observations for each pothole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The delineation soil sample locations are depicted on Figure 3. The delineation soil samples were collected, handled and analyzed for chloride as described above and submitted to Xenco in Carlsbad, New Mexico.

To direct excavation activities, LTE screened soil for volatile aromatic hydrocarbons and chloride utilizing a calibrated PID and Hach® chloride QuanTab® test strips, respectively. Following removal of impacted soil, LTE collected 5-point composite soil samples every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples SW01 through SW03 were collected from the sidewalls of the excavation from depths ranging from approximately 2 feet bgs to 2.5 feet bgs. Composite soil samples FS01 through FS20A were collected from the floor of the excavation from depths of 0.5 feet bgs to 2.5 feet bgs. The excavation soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Carlsbad, New Mexico. The excavation extent and excavation soil sample locations are depicted on Figure 4. Photographic documentation was conducted during excavation activities. Photographic logs are included in Attachment 1.

On February 21, 2020, after reviewing laboratory analytical results from the confirmation soil samples, the excavation was backfilled with clean backfill material. Photographic documentation was conducted during backfill activities and photographic logs included in Attachment 1.

ANALYTICAL RESULTS

Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in preliminary soil samples SS01, SS03, and SS05 collected at approximately 0.5 feet bgs and pothole delineation samples PH01 throughPH03A collected at depths of one foot bgs and two feet bgs. Soil samples SS02 and SS04 exceeded the Closure Criteria for chlorides with concentrations of 1,730 mg/kg and 612 mg/kg chloride respectively. Soil sample SS05 exceeded the Closure Criteria for TPH, with a TPH concentration of 173 mg/kg.

Following an initial excavation event, LTE collected confirmation soil samples within the excavation extent. Laboratory analytical results indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria in excavation soil samples FS05, FS06, FS08, FS09, FS10, FS11, FS13, FS14, FS17, FS19, and SW01 through SW03. Soil samples FS01 throughFS04, FS07, FS12, FS15, FS16, FS18, and FS20 exceeded Closure Criteria and the excavation floor was excavated further in those locations to depths between one foot bgs and two feet bgs.

Additional soil was removed and LTE collected subsequent confirmation soil samples within the excavation extent. Laboratory analytical results indicated that FS01A through FS04A, FS07A, FS12A, FS15A, FS16A, FS18A, and FS20A collected at depths ranging from 1 foot bgs to 1.5 feet bgs were compliant with Closure Criteria. Laboratory analytical results are presented in Table 1. The complete laboratory analytical reports are included as Attachment 3.

CONCLUSIONS

Initial and follow-up response efforts as a result of the produced water release included removal of freestanding fluid by a hydrovac truck, collection of soil samples, and excavation and removal of impacted soils. Preliminary soil samples were collected from within and around the release extent. Soil samples SS02, SS04, and SS05 indicated that chloride concentrations were elevated on the eastern side of the extent of contamination and that TPH concentrations were elevated in the central southern area. Based on the analytical results, the area was excavated, removing impacted soils from the surface to depths ranging between 0.5 feet bgs to 2.5 feet bgs. Laboratory analytical results for the final confirmation soil samples collected within the final excavation extent indicated that benzene, BTEX, TPH-GRO, TPH-DRO, TPH, and chloride concentrations were compliant with the NMOCD Closure Criteria. XTO respectfully requests NFA for RP Number 2RP-5488.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Christa Leilbli
Senior Hydrogeologist

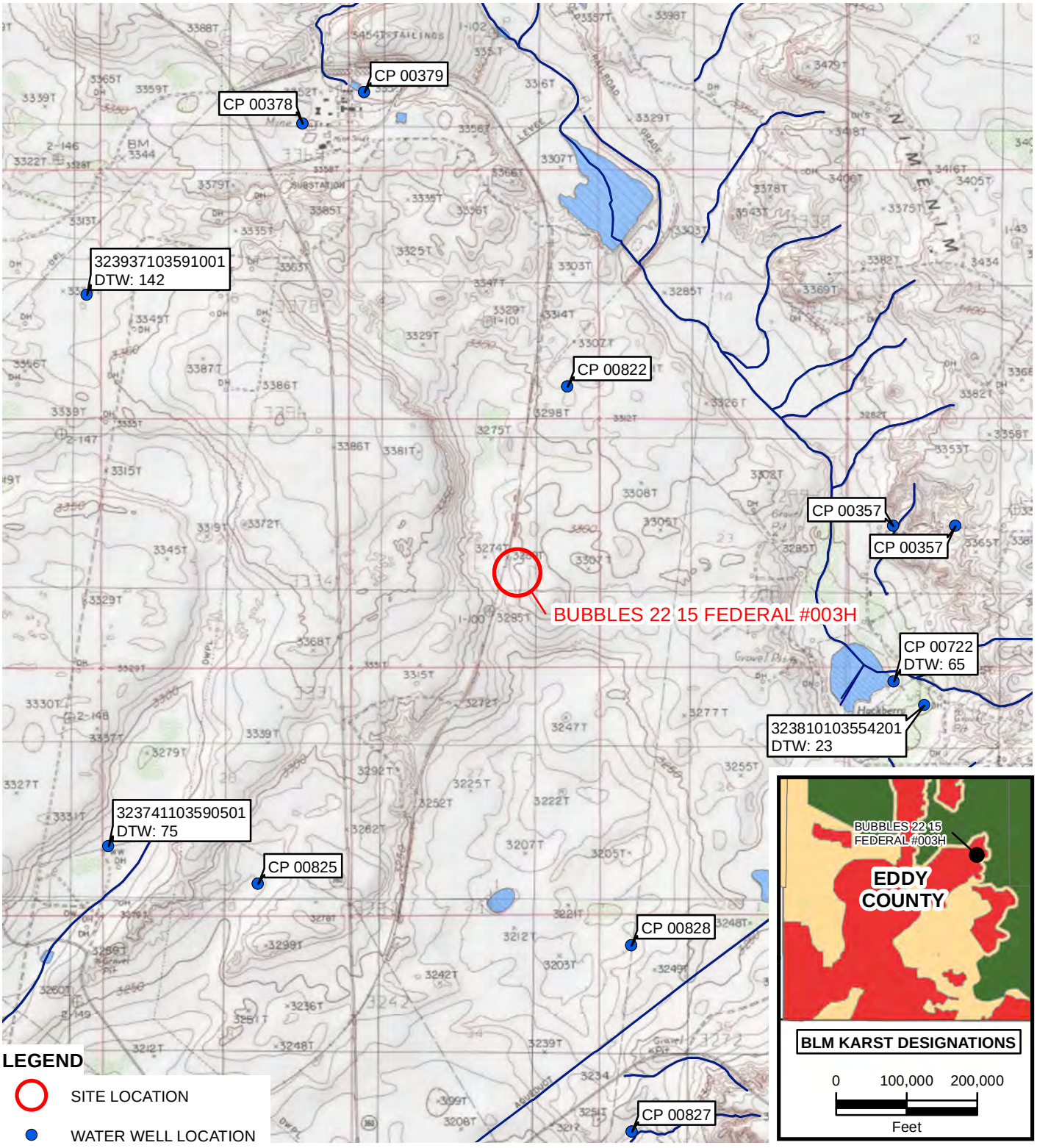
Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Jim Amos, BLM
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Appendices:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Delineation Soil Sample Locations
Figure 4	Excavation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Photographic Logs
Attachment 2	Lithologic/Soil Sampling Logs
Attachment 3	Laboratory Analytical Reports

FIGURES



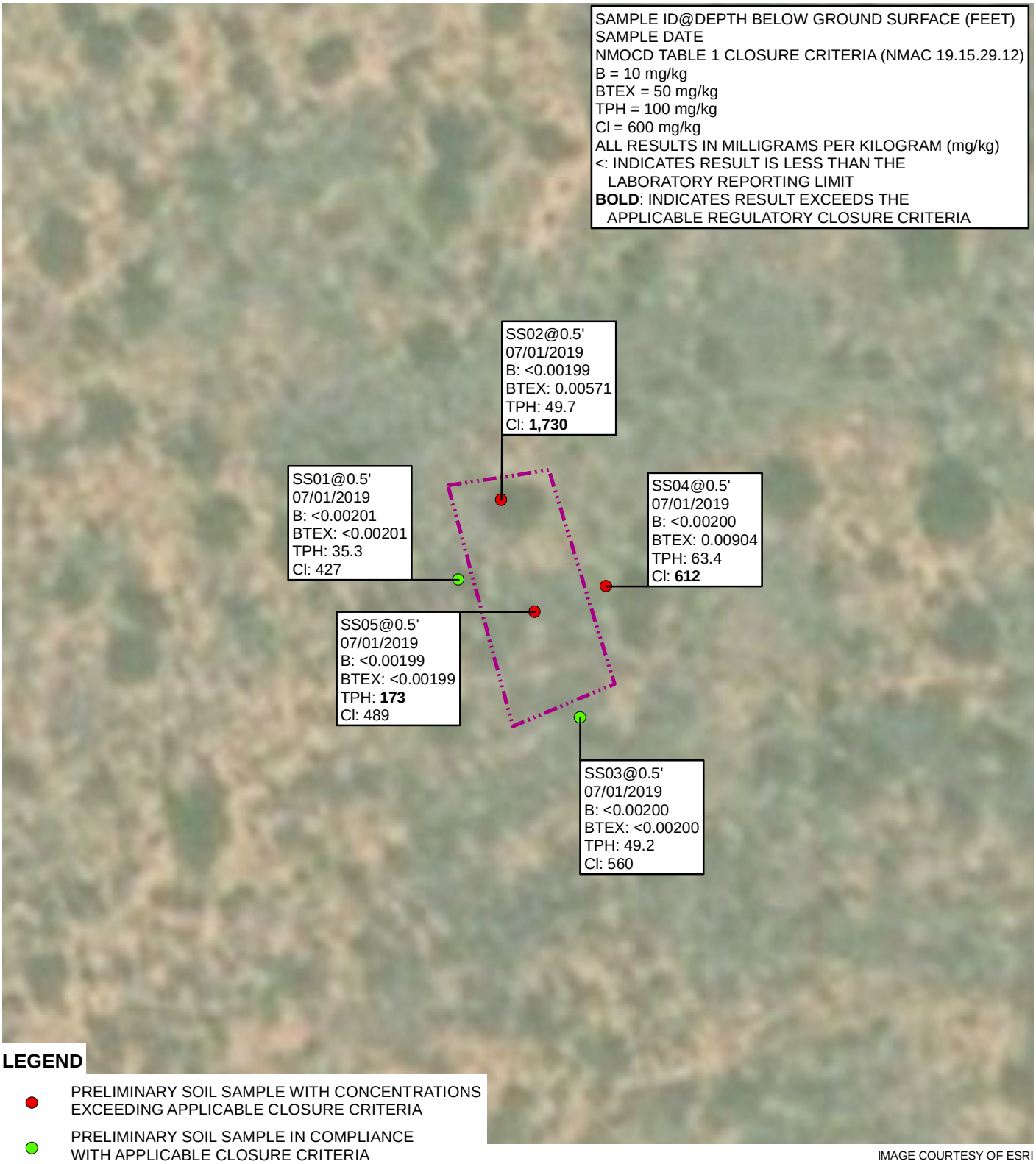
LEGEND

- SITE LOCATION
- WATER WELL LOCATION
- NATIONAL HYDROGRAPHY DATASET SURFACE WATER FEATURE
- NATIONAL WETLANDS INVENTORY SURFACE WATER FEATURE
- LOW KARST
- MEDIUM KARST
- HIGH KARST

NOTE: REMEDIATION PERMIT NUMBER 2RP-5488
DTW: DEPTH TO WATER IN FEET

FIGURE 1
SITE LOCATION MAP
BUBBLES 22 15 FEDERAL #003H
UNIT J SEC 22 T19S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

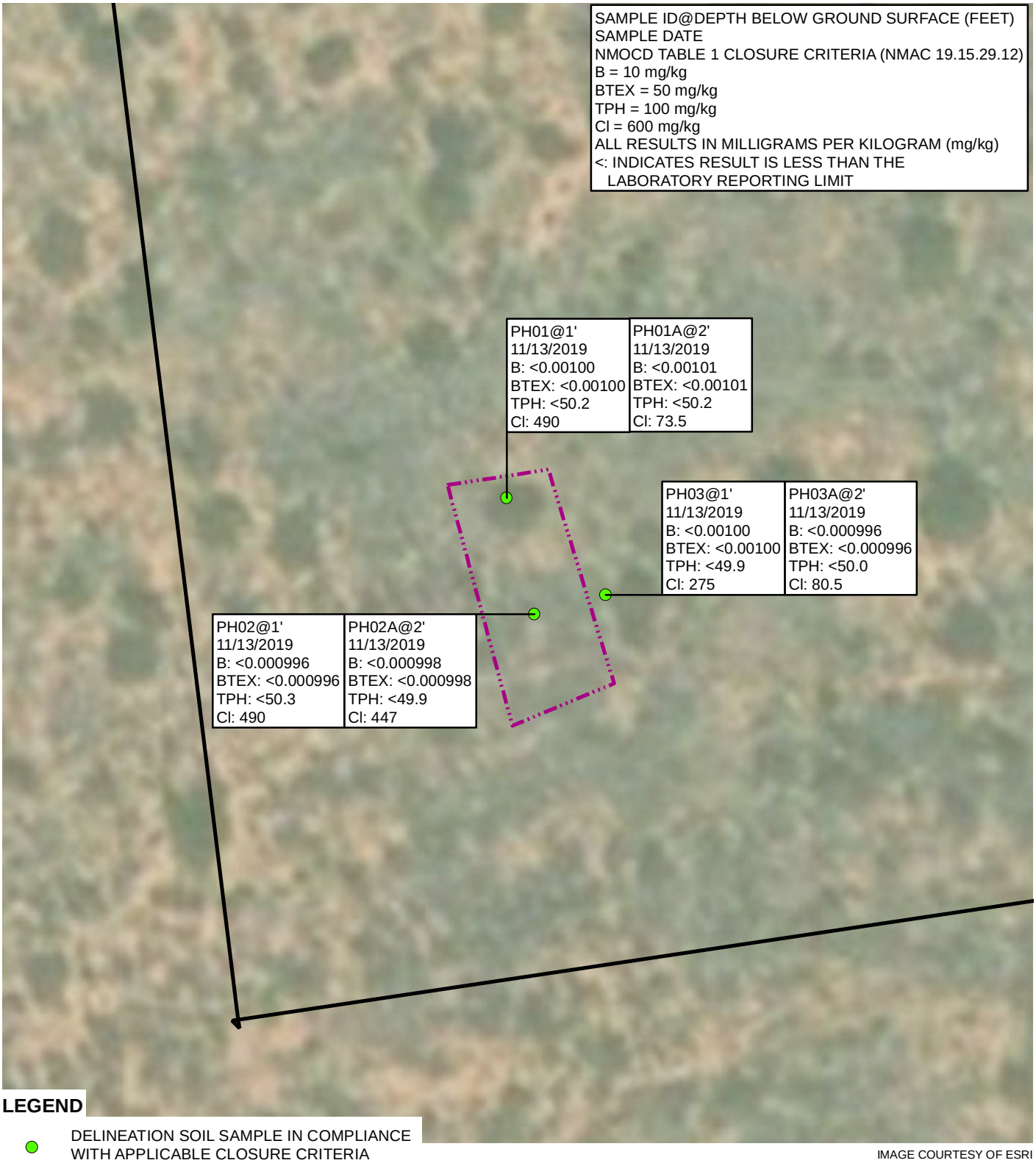
P:\XTO Energy\GIS\MXD\012919143_BUBLES 22-15 FED 1H\012919143_FIG01_SL_5488.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5488

FIGURE 2
PRELIMINARY SOIL SAMPLE LOCATIONS
BUBBLES 22-15 FED 003H
UNIT J SEC 22 T19S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919143_BUBLES 22-15 FED 1H\012919143_FIG02_PRELIMINARY_5488.mxd



B: BENZENE
BTEX: TOTAL BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
TPH: TOTAL PETROLEUM HYDROCARBONS
Cl: CHLORIDE
NMAC: NEW MEXICO ADMINISTRATIVE CODE
NMOCD: NEW MEXICO OIL CONSERVATION DIVISION
NOTE: REMEDIATION PERMIT NUMBER 2RP-5488

FIGURE 3
DELINEATION SOIL SAMPLE LOCATIONS
BUBBLES 22-15 FED 003H
UNIT J SEC 22 T19S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919143_BUBLES 22-15 FED 1H\012919143_FIG03_DELINEATION_5488.mxd

LEGEND

EXCAVATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

EXCAVATION EXTENT

APPROXIMATE PAD BOUNDARY

IMAGE COURTESY OF ESRI

0 40 80

Feet

N

NOTE: REMEDIATION PERMIT NUMBER 2RP-5488

FIGURE 4
EXCAVATION SOIL SAMPLE LOCATIONS
BUBBLES 22-15 FED 003H
UNIT J SEC 22 T19S R30E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012919143_BUBLES 22-15 FED 1H\012919143_FIG04_EXCAVATION_5488.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

BUBBLES 22 15 FEDERAL #003H
REMEDIATION PERMIT NUMBER 2RP-5488
EDDY 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	NE	**100**	**600**
SS01	0.5	07/01/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	35.3	<15.0	35.3	35.3	427
SS02	0.5	07/01/2019	<0.00199	<0.00199	<0.00199	0.00571	0.00571	<15.0	49.7	<15.0	49.7	49.7	**1,730**
SS03	0.5	07/01/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	49.2	<15.0	49.2	49.2	560
SS04	0.5	07/01/2019	<0.00200	<0.00200	<0.00200	0.00904	0.00904	<15.0	63.4	<15.0	63.4	63.4	**612**
SS05	0.5	07/01/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	143	30.0	143	**173**	489
PH01	1	11/13/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	490
PH01A	2	11/13/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	73.5
PH02	1	11/13/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.3	<50.3	<50.3	<50.3	<50.3	490
PH02A	2	11/13/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<49.9	<49.9	<49.9	<49.9	<49.9	447
PH03	1	11/13/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<49.9	<49.9	<49.9	<49.9	<49.9	275
PH03A	2	11/13/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.0	<50.0	<50.0	<50.0	<50.0	80.5
SW01	2.0	11/14/2019	<0.00101	<0.00101	<0.00101	0.00132	0.00132	<49.8	<49.8	<49.8	<49.8	<49.8	73.7
SW02	2.5	11/14/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	71.5	<50.2	71.5	71.5	41.0
SW03	2.5	11/14/2019	<0.00101	<0.00101	<0.00101	0.00157	0.00157	<50.2	<50.2	<50.2	<50.2	<50.2	101
FS01	0.5	11/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	**1,370**
FS01A	1	11/25/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	275
FS02	0.5	11/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	**904**
FS02A	1	11/25/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	295
FS03	0.5	11/14/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.2	<50.2	<50.2	<50.2	<50.2	**826**
FS03A	1	11/25/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	327
FS04	0.5	11/14/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.1	<50.1	<50.1	<50.1	<50.1	**692**
FS04A	1	11/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	503
FS05	0.5	11/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	<50.3	<50.3	<50.3	<50.3	501
FS06	0.5	11/14/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.1	<50.1	<50.1	<50.1	<50.1	316

TABLE 1
SOIL ANALYTICAL RESULTS

BUBBLES 22 15 FEDERAL #003H
REMEDIATION PERMIT NUMBER 2RP-5488
EDDY 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	NE	**100**	**600**
FS07	0.5	11/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	199	<50.1	199	**199**	318
FS07A	1	11/25/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.3	<50.3	<50.3	<50.3	<50.3	287
FS08	0.5	11/14/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.3	<50.3	<50.3	<50.3	<50.3	65.0
FS09	2.0	11/14/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.1	<50.1	<50.1	<50.1	<50.1	37.8
FS10	0.5	11/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.1	<50.1	<50.1	<50.1	<50.1	153
FS11	0.5	11/14/2019	<0.000996	<0.000996	<0.000996	<0.000996	<0.000996	<50.0	<50.0	<50.0	<50.0	<50.0	226
FS12	0.5	11/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.3	276	<50.3	276	**276**	586
FS12A	1.5	11/25/2019	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	46.7
FS13	0.5	11/14/2019	<0.000994	<0.000994	<0.000994	<0.000994	<0.000994	<50.3	<50.3	<50.3	<50.3	<50.3	358
FS14	0.5	11/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<50.2	<50.2	<50.2	<50.2	<50.2	409
FS15	0.5	11/14/2019	<0.000998	<0.000998	<0.000998	<0.000998	<0.000998	<50.3	78.2	<50.3	78.2	78.2	**632**
FS15A	1.5	11/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	99.6
FS16	0.5	11/14/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	3,170	<50.3	**3,170**	**3,170**	586
FS16A	1.5	11/25/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	65.1
FS17	0.5	11/14/2019	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<50.3	<50.3	<50.3	<50.3	<50.3	551
FS18	0.5	11/14/2019	<0.000998	0.00103	0.00288	0.0215	0.0254	<50.1	375	<50.1	375	**375**	451
FS18A	1.5	11/25/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	54.8	<50.1	54.8	54.8	230
FS19	2.5	11/14/2019	<0.00100	<0.00100	<0.00100	0.00184	0.00184	<49.9	<49.9	<49.9	<49.9	<49.9	69.5
FS20	2.5	11/14/2019	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	<49.9	237	<49.9	237	**237**	49.1
FS20A	1.5	11/25/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	52.8

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
ORO - 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

ATTACHMENT 1: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Photograph 1: Southern view of the release location and extent.

Photograph 2: Eastern view of the release location and extent.

Photograph 3: Southern view of excavation extent.

Photograph 4: Western view of excavation extent.

BACKFILL PHOTOGRAPHIC LOG

Photograph 1: On-pad

Photograph 2: On-pad

ATTACHMENT 2: LITHOLOGIC/SOIL SAMPLING LOGS

LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220
A proud member of WSP
Compliance · Engineering · Remediation

BH or PH Name: PH01	Date: 11/13/2019
Site Name: Bubbles22-15 Federal 1H	
RP or Incident Number: 2RP-5488	
LTE Job Number: 12919143	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Will Mather / Method: Trackhoe
Lat/Long:	Field Screening: Chloride, PID
Hole Diameter: 3'	Total Depth: 2'
Comments:	

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
D	216	0.4	N	PH01		1	CCHE	Caliche, medium-large grain sand, poorly graded, tan, dry, no stain, no odor,
D	<128	0.0	N	PH01A		2	SW-SC	SAND, fine grain, well graded, Red/Brown, few clay, low plasticity, cohesive, dry, no stain, no odor

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Carlsbad, New Mexico 88220
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BH or PH Name: PH02	Date: 11/13/2019
Site Name: Bubbles22-15 Federal 1H	
RP or Incident Number: 2RP-5488	
LTE Job Number: 12919143	

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: Will Mather	Method: Trackhoe		
Lat/Long:	Field Screening: Chloride, PID	Hole Diameter: 3'	Total Depth: 2'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
D	216	0.2	N	PH02		1	CCHE	Caliche, medium-large grain sand, poorly graded, tan, dry, no stain, no odor,
D	<128	0.2	N	PH02A		2	SW-SC	SAND, fine grain, well graded, Red/Brown, few clay, low plasticity, cohesive, dry, no stain, no odor

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BH or PH Name: PH03	Date: 11/13/2019
Site Name: Bubbles22-15 Federal 1H	
RP or Incident Number: 2RP-5488	
LTE Job Number: 12919143	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Will Mather / Method: Trackhoe
Lat/Long:	Field Screening: Chloride, PID / Hole Diameter: 3' / Total Depth: 4'
Comments:	

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
D	152	0.2	N	PH03		1	CCHE	Caliche, medium-large grain sand, poorly graded, tan, dry, no stain, no odor,
D	<128	0.3	N	PH03A		2	SW-SC	SAND, fine grain, well graded, Red/Brown, few clay, low plasticity, cohesive, dry, no stain, no odor
						3		
D	<128	0.4	N	PH03B		4	SW-SC	SAND, fine grain, well graded, Red/Brown, few clay, low plasticity, cohesive, dry, no stain, no odor

ATTACHMENT 3: LABORATORY ANALYTICAL REPORTS

Analytical Report 629723

for

LT Environmental, Inc.

Project Manager: Ashley Ager

Bubbles 22-15 Fed (2RP-5488)

012919143

11-JUL-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

11-JUL-19

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

Reference: XENCO Report No(s): **629723**
Bubbles 22-15 Fed (2RP-5488)
Project Address: Delaware Basin

Ashley Ager:

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) 629723. 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. 629723 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 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	07-01-19 15:45	6 ft	629723-001
SS02	S	07-01-19 16:00	6 ft	629723-002
SS03	S	07-01-19 16:15	6 ft	629723-003
SS04	S	07-01-19 16:30	6 ft	629723-004
SS05	S	07-01-19 16:45	6 ft	629723-005

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Bubbles 22-15 Fed (2RP-5488)

Project ID: *012919143*
Work Order Number(s): *629723*

Report Date: *11-JUL-19*
Date Received: *07/02/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3094461 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.
Samples affected are: 629723-005.

Batch: LBA-3094952 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3094957 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 629723

LT Environmental, Inc., Arvada, CO

Project Name: Bubbles 22-15 Fed (2RP-5488)

Project Id: 012919143
Contact: Ashley Ager
Project Location: Delaware Basin

Date Received in Lab: Tue Jul-02-19 08:05 am
Report Date: 11-JUL-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	629723-001		629723-002		629723-003		629723-004		629723-005	
	Field Id:	SS01		SS02		SS03		SS04		SS05	
	Depth:	6- ft		6- ft		6- ft		6- ft		6- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-01-19 15:45		Jul-01-19 16:00		Jul-01-19 16:15		Jul-01-19 16:30		Jul-01-19 16:45	
BTEX by EPA 8021B SUB: T104704400-18-16	*Extracted:*	Jul-08-19 15:00		Jul-08-19 15:00		Jul-09-19 11:15		Jul-09-19 11:15		Jul-09-19 11:15	
	Analyzed:	Jul-10-19 10:06		Jul-10-19 10:28		Jul-10-19 01:43		Jul-10-19 02:06		Jul-10-19 02:29	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Toluene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
Ethylbenzene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
m,p-Xylenes		<0.00402	0.00402	0.00571	0.00398	<0.00400	0.00400	0.00701	0.00399	<0.00398	0.00398
o-Xylene		<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	0.00203	0.00200	<0.00199	0.00199
Total Xylenes		<0.00201	0.00201	0.00571	0.00199	<0.00200	0.00200	0.00904	0.00200	<0.00199	0.00199
Total BTEX		<0.00201	0.00201	0.00571	0.00199	<0.00200	0.00200	0.00904	0.00200	<0.00199	0.00199
Chloride by EPA 300 SUB: T104704400-18-16	*Extracted:*	Jul-03-19 16:00		Jul-03-19 16:00		Jul-05-19 11:00		Jul-05-19 11:00		Jul-05-19 11:00	
	Analyzed:	Jul-05-19 18:15		Jul-05-19 18:23		Jul-05-19 21:05		Jul-05-19 20:43		Jul-05-19 21:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		427	5.05	1730	25.0	560	4.98	612	5.03	489	4.97
TPH by SW8015 Mod SUB: T104704400-18-16	*Extracted:*	Jul-03-19 14:00		Jul-03-19 14:00		Jul-03-19 14:00		Jul-03-19 14:00		Jul-04-19 10:00	
	Analyzed:	Jul-04-19 05:00		Jul-04-19 05:25		Jul-04-19 05:49		Jul-04-19 06:13		Jul-05-19 05:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		35.3	15.0	49.7	15.0	49.2	15.0	63.4	15.0	143	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	30.0	15.0
Total TPH		35.3	15.0	49.7	15.0	49.2	15.0	63.4	15.0	173	15.0
Total GRO-DRO		35.3	15.0	49.7	15.0	49.2	15.0	63.4	15.0	143	15.0

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Certificate of Analytical Results 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629723-001	Date Collected:	07.01.19 15.45	Sample Depth:	6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.03.19 16.00	Basis:	Wet Weight
Seq Number:	3094579			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**427**	5.05	mg/kg	07.05.19 18.15		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.03.19 14.00	Basis:	Wet Weight
Seq Number:	3094458			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.04.19 05.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	**35.3**	15.0	mg/kg	07.04.19 05.00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.04.19 05.00	U	1
Total TPH	PHC635	**35.3**	15.0	mg/kg	07.04.19 05.00		1
Total GRO-DRO	PHC628	**35.3**	15.0	mg/kg	07.04.19 05.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	07.04.19 05.00	
o-Terphenyl	84-15-1	89	%	70-135	07.04.19 05.00	

Certificate of Analytical Results 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id:	**SS01**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629723-001	Date Collected:	07.01.19 15.45	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	AMB	Date Prep:	07.08.19 15.00	Basis:	Wet Weight
Seq Number:	3094957			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	07.10.19 10.06	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	07.10.19 10.06	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	07.10.19 10.06	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	07.10.19 10.06	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	07.10.19 10.06	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	07.10.19 10.06	U	1
Total BTEX		<0.00201	0.00201	mg/kg	07.10.19 10.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	07.10.19 10.06	
4-Bromofluorobenzene	460-00-4	111	%	70-130	07.10.19 10.06	

Certificate of Analytical Results 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629723-002	Date Collected:	07.01.19 16.00	Sample Depth:	6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	07.03.19 16.00	Basis:	Wet Weight
Seq Number:	3094579			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1730**	25.0	mg/kg	07.05.19 18.23		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.03.19 14.00	Basis:	Wet Weight
Seq Number:	3094458			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.04.19 05.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	**49.7**	15.0	mg/kg	07.04.19 05.25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.04.19 05.25	U	1
Total TPH	PHC635	**49.7**	15.0	mg/kg	07.04.19 05.25		1
Total GRO-DRO	PHC628	**49.7**	15.0	mg/kg	07.04.19 05.25		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	07.04.19 05.25	
o-Terphenyl	84-15-1	94	%	70-135	07.04.19 05.25	

Certificate of Analytical Results 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id:	**SS02**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629723-002	Date Collected:	07.01.19 16.00	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	AMB	Date Prep:	07.08.19 15.00	Basis:	Wet Weight
Seq Number:	3094957			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.10.19 10.28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.10.19 10.28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.10.19 10.28	U	1
m,p-Xylenes	179601-23-1	**0.00571**	0.00398	mg/kg	07.10.19 10.28		1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.10.19 10.28	U	1
Total Xylenes	1330-20-7	**0.00571**	0.00199	mg/kg	07.10.19 10.28		1
Total BTEX		**0.00571**	0.00199	mg/kg	07.10.19 10.28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	07.10.19 10.28	
4-Bromofluorobenzene	460-00-4	113	%	70-130	07.10.19 10.28	

Certificate of Analytical Results 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629723-003	Date Collected:	07.01.19 16.15	Sample Depth:	6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.05.19 11.00	Basis:	Wet Weight
Seq Number:	3094582			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**560**	4.98	mg/kg	07.05.19 21.05		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.03.19 14.00	Basis:	Wet Weight
Seq Number:	3094458			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.04.19 05.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	**49.2**	15.0	mg/kg	07.04.19 05.49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.04.19 05.49	U	1
Total TPH	PHC635	**49.2**	15.0	mg/kg	07.04.19 05.49		1
Total GRO-DRO	PHC628	**49.2**	15.0	mg/kg	07.04.19 05.49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	07.04.19 05.49	
o-Terphenyl	84-15-1	80	%	70-135	07.04.19 05.49	

Certificate of Analytical Results 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id:	**SS03**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629723-003	Date Collected:	07.01.19 16.15	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 01.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 01.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 01.43	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	07.10.19 01.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	07.10.19 01.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	07.10.19 01.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	07.10.19 01.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	07.10.19 01.43	
1,4-Difluorobenzene	540-36-3	90	%	70-130	07.10.19 01.43	

Certificate of Analytical Results 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629723-004	Date Collected:	07.01.19 16.30	Sample Depth:	6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.05.19 11.00	Basis:	Wet Weight
Seq Number:	3094582			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**612**	5.03	mg/kg	07.05.19 20.43		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.03.19 14.00	Basis:	Wet Weight
Seq Number:	3094458			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.04.19 06.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	**63.4**	15.0	mg/kg	07.04.19 06.13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	07.04.19 06.13	U	1
Total TPH	PHC635	**63.4**	15.0	mg/kg	07.04.19 06.13		1
Total GRO-DRO	PHC628	**63.4**	15.0	mg/kg	07.04.19 06.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	07.04.19 06.13	
o-Terphenyl	84-15-1	84	%	70-135	07.04.19 06.13	

Certificate of Analytical Results 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id:	**SS04**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629723-004	Date Collected:	07.01.19 16.30	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	07.10.19 02.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	07.10.19 02.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	07.10.19 02.06	U	1
m,p-Xylenes	179601-23-1	**0.00701**	0.00399	mg/kg	07.10.19 02.06		1
o-Xylene	95-47-6	**0.00203**	0.00200	mg/kg	07.10.19 02.06		1
Total Xylenes	1330-20-7	**0.00904**	0.00200	mg/kg	07.10.19 02.06		1
Total BTEX		**0.00904**	0.00200	mg/kg	07.10.19 02.06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	07.10.19 02.06	
4-Bromofluorobenzene	460-00-4	115	%	70-130	07.10.19 02.06	

Certificate of Analytical Results 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629723-005	Date Collected:	07.01.19 16.45	Sample Depth:	6 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SPC			% Moisture:	
Analyst:	SPC	Date Prep:	07.05.19 11.00	Basis:	Wet Weight
Seq Number:	3094582			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**489**	4.97	mg/kg	07.05.19 21.12		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	07.04.19 10.00	Basis:	Wet Weight
Seq Number:	3094461			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	07.05.19 05.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	**143**	15.0	mg/kg	07.05.19 05.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**30.0**	15.0	mg/kg	07.05.19 05.58		1
Total TPH	PHC635	**173**	15.0	mg/kg	07.05.19 05.58		1
Total GRO-DRO	PHC628	**143**	15.0	mg/kg	07.05.19 05.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	07.05.19 05.58	
o-Terphenyl	84-15-1	67	%	70-135	07.05.19 05.58	**

Certificate of Analytical Results 629723

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Fed (2RP-5488)

Sample Id:	**SS05**	Matrix:	Soil	Date Received:	07.02.19 08.05
Lab Sample Id:	629723-005	Date Collected:	07.01.19 16.45	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	DVM			% Moisture:	
Analyst:	FOV	Date Prep:	07.09.19 11.15	Basis:	Wet Weight
Seq Number:	3094952			SUB:	T104704400-18-16

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	07.10.19 02.29	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	07.10.19 02.29	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	07.10.19 02.29	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	07.10.19 02.29	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	07.10.19 02.29	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	07.10.19 02.29	U	1
Total BTEX		<0.00199	0.00199	mg/kg	07.10.19 02.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	70-130	07.10.19 02.29	
1,4-Difluorobenzene	540-36-3	88	%	70-130	07.10.19 02.29	

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 629723

LT Environmental, Inc.

Bubbles 22-15 Fed (2RP-5488)

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094579 Matrix: Solid Date Prep: 07.03.19
MB Sample Id: 7681373-1-BLK LCS Sample Id: 7681373-1-BKS LCSD Sample Id: 7681373-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	273	109	273	109	90-110	0	20	mg/kg	07.05.19 14:39	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094582 Matrix: Solid Date Prep: 07.05.19
MB Sample Id: 7681412-1-BLK LCS Sample Id: 7681412-1-BKS LCSD Sample Id: 7681412-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	264	106	264	106	90-110	0	20	mg/kg	07.05.19 20:28	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094579 Matrix: Soil Date Prep: 07.03.19
Parent Sample Id: 629707-002 MS Sample Id: 629707-002 S MSD Sample Id: 629707-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	114	250	426	125	426	125	90-110	0	20	mg/kg	07.05.19 15:01	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094579 Matrix: Soil Date Prep: 07.03.19
Parent Sample Id: 629707-011 MS Sample Id: 629707-011 S MSD Sample Id: 629707-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	35.4	252	339	120	338	120	90-110	0	20	mg/kg	07.05.19 16:55	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094582 Matrix: Soil Date Prep: 07.05.19
Parent Sample Id: 629723-004 MS Sample Id: 629723-004 S MSD Sample Id: 629723-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	612	252	853	96	853	96	90-110	0	20	mg/kg	07.05.19 20:50	

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 629723

LT Environmental, Inc.

Bubbles 22-15 Fed (2RP-5488)

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3094582 Matrix: Soil Date Prep: 07.05.19
Parent Sample Id: 629906-005 MS Sample Id: 629906-005 S MSD Sample Id: 629906-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	45.0	252	328	112	327	112	90-110	0	20	mg/kg	07.05.19 22:32	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094458 Matrix: Solid Date Prep: 07.03.19
MB Sample Id: 7681379-1-BLK LCS Sample Id: 7681379-1-BKS LCSD Sample Id: 7681379-1-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)	<8.00	1000	1140	114	1120	112	70-135	2	20	mg/kg	07.03.19 21:19	
Diesel Range Organics (DRO)	<8.13	1000	1140	114	1140	114	70-135	0	20	mg/kg	07.03.19 21:19	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		103		100		70-135	%	07.03.19 21:19
o-Terphenyl	91		103		107		70-135	%	07.03.19 21:19

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094461 Matrix: Solid Date Prep: 07.04.19
MB Sample Id: 7681387-1-BLK LCS Sample Id: 7681387-1-BKS LCSD Sample Id: 7681387-1-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)	<8.00	1000	1180	118	1100	110	70-135	7	20	mg/kg	07.04.19 21:09	
Diesel Range Organics (DRO)	<8.13	1000	1190	119	1150	115	70-135	3	20	mg/kg	07.04.19 21:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		111		103		70-135	%	07.04.19 21:09
o-Terphenyl	83		110		97		70-135	%	07.04.19 21:09

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094458 Matrix: Soil Date Prep: 07.03.19
Parent Sample Id: 629716-001 MS Sample Id: 629716-001 S MSD Sample Id: 629716-001 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)	11.5	998	1070	106	1170	116	70-135	9	20	mg/kg	07.03.19 22:33	
Diesel Range Organics (DRO)	10.3	998	1080	107	1210	120	70-135	11	20	mg/kg	07.03.19 22:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	92		101		70-135	%	07.03.19 22:33
o-Terphenyl	100		108		70-135	%	07.03.19 22:33

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 629723

LT Environmental, Inc.

Bubbles 22-15 Fed (2RP-5488)

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3094461 Matrix: Soil Date Prep: 07.04.19
Parent Sample Id: 629498-001 MS Sample Id: 629498-001 S MSD Sample Id: 629498-001 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)	9.21	997	1180	117	1190	118	70-135	1	20	mg/kg	07.04.19 22:20	
Diesel Range Organics (DRO)	13.6	997	1080	107	1050	104	70-135	3	20	mg/kg	07.04.19 22:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		102		70-135	%	07.04.19 22:20
o-Terphenyl	79		76		70-135	%	07.04.19 22:20

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3094957 Matrix: Solid Date Prep: 07.08.19
MB Sample Id: 7681583-1-BLK LCS Sample Id: 7681583-1-BKS LCSD Sample Id: 7681583-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0843	85	0.0920	92	70-130	9	35	mg/kg	07.09.19 04:01	
Toluene	<0.00199	0.0994	0.0821	83	0.0861	86	70-130	5	35	mg/kg	07.09.19 04:01	
Ethylbenzene	<0.00199	0.0994	0.0901	91	0.0953	95	70-130	6	35	mg/kg	07.09.19 04:01	
m,p-Xylenes	<0.00398	0.199	0.180	90	0.190	95	70-130	5	35	mg/kg	07.09.19 04:01	
o-Xylene	<0.00199	0.0994	0.0856	86	0.0913	91	70-130	6	35	mg/kg	07.09.19 04:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		93		96		70-130	%	07.09.19 04:01
4-Bromofluorobenzene	100		103		109		70-130	%	07.09.19 04:01

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3094952 Matrix: Solid Date Prep: 07.09.19
MB Sample Id: 7681643-1-BLK LCS Sample Id: 7681643-1-BKS LCSD Sample Id: 7681643-1-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	0.0812	81	0.0870	87	70-130	7	35	mg/kg	07.09.19 23:17	
Toluene	<0.000456	0.100	0.101	101	0.106	106	70-130	5	35	mg/kg	07.09.19 23:17	
Ethylbenzene	<0.00200	0.100	0.116	116	0.120	120	70-130	3	35	mg/kg	07.09.19 23:17	
m,p-Xylenes	<0.00101	0.200	0.231	116	0.241	121	70-130	4	35	mg/kg	07.09.19 23:17	
o-Xylene	0.000359	0.100	0.109	109	0.114	114	70-130	4	35	mg/kg	07.09.19 23:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		87		88		70-130	%	07.09.19 23:17
4-Bromofluorobenzene	107		109		107		70-130	%	07.09.19 23:17

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

QC Summary 629723

LT Environmental, Inc.

Bubbles 22-15 Fed (2RP-5488)

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3094957 Matrix: Soil Date Prep: 07.08.19
Parent Sample Id: 629707-001 MS Sample Id: 629707-001 S MSD Sample Id: 629707-001 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	0.0998	0.0779	78	0.0746	74	70-130	4	35	mg/kg	07.09.19 04:45	
Toluene	<0.00200	0.0998	0.0757	76	0.0732	72	70-130	3	35	mg/kg	07.09.19 04:45	
Ethylbenzene	<0.00200	0.0998	0.0815	82	0.0791	78	70-130	3	35	mg/kg	07.09.19 04:45	
m,p-Xylenes	<0.00399	0.200	0.163	82	0.157	78	70-130	4	35	mg/kg	07.09.19 04:45	
o-Xylene	<0.00200	0.0998	0.0801	80	0.0748	74	70-130	7	35	mg/kg	07.09.19 04:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		99		70-130	%	07.09.19 04:45
4-Bromofluorobenzene	122		124		70-130	%	07.09.19 04:45

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3094952 Matrix: Soil Date Prep: 07.09.19
Parent Sample Id: 629723-003 MS Sample Id: 629723-003 S MSD Sample Id: 629723-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0729	73	0.0768	77	70-130	5	35	mg/kg	07.10.19 00:03	
Toluene	0.000780	0.100	0.0881	87	0.0928	92	70-130	5	35	mg/kg	07.10.19 00:03	
Ethylbenzene	<0.000566	0.100	0.0953	95	0.101	101	70-130	6	35	mg/kg	07.10.19 00:03	
m,p-Xylenes	0.00262	0.200	0.190	94	0.202	99	70-130	6	35	mg/kg	07.10.19 00:03	
o-Xylene	0.00101	0.100	0.0913	90	0.0967	96	70-130	6	35	mg/kg	07.10.19 00:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		90		70-130	%	07.10.19 00:03
4-Bromofluorobenzene	110		111		70-130	%	07.10.19 00:03

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

XENCO LABORATORIES
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 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com

Work Order No: 629725

Page 1 of 1

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental	Company Name:	XTO
Address:	3300 North A Street	Address:	3104 E. Green Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	432.236.3849	Email:	slo@ltenv.com

Work Order Comments

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

Project Name:	Bubbles 22-15 Fed (2RP-5488)	Turn Around	
Project Number:	012919143	Routine ☑	
Project Location		Rush:	
Sampler's Name:	Spencer Lo	Due Date:	
PO #:		Quote #:	

SAMPLE RECEIPT			
Temperature (°C):	5.2	Temp Blank:	Yes No
Received Intact:	Yes No	Wet Ice:	Yes No
Cooler Custody Seals:	Yes No N/A	Thermometer ID	TX1007
Sample Custody Seals:	Yes No N/A	Correction Factor:	-0.2
		Total Containers:	5

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8012)	BTEX (EPA 8021)	Chloride (EPA 300)	Sample Comments
	SS01	S	7/1/19	1545	6"	1	X	X	X	
	SS02	S	7/1/19	1600	6"	1	X	X	X	
	SS03	S	7/1/19	1615	6"	1	X	X	X	
	SS04	S	7/1/19	1630	6"	1	X	X	X	
	SS05	S	7/1/19	1645	6"	1	X	X	X	

Preservative Codes

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day received by the lab, if received by 4:00pm

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
Spencer Lo		07/02/19 0805	2		
			4		
			6		

Revised Date 022619 Rev. 2019.1

Inter-Office Shipment

IOS Number **42710**

Date/Time: 07/02/19 11:06
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: 775624086614

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
629723-001	S	SS01	07/01/19 15:45	SW8015MOD_NM	TPH by SW8015 Mod	07/09/19	07/15/19	JKR	GRO-DRO PHCC10C28 PI	
629723-001	S	SS01	07/01/19 15:45	E300_CL	Chloride by EPA 300	07/09/19	12/28/19	JKR	CL	
629723-001	S	SS01	07/01/19 15:45	SW8021B	BTEX by EPA 8021B	07/09/19	07/15/19	JKR	BR4FBZ BZ BZME EBZ X	
629723-002	S	SS02	07/01/19 16:00	SW8021B	BTEX by EPA 8021B	07/09/19	07/15/19	JKR	BR4FBZ BZ BZME EBZ X	
629723-002	S	SS02	07/01/19 16:00	SW8015MOD_NM	TPH by SW8015 Mod	07/09/19	07/15/19	JKR	GRO-DRO PHCC10C28 PI	
629723-002	S	SS02	07/01/19 16:00	E300_CL	Chloride by EPA 300	07/09/19	12/28/19	JKR	CL	
629723-003	S	SS03	07/01/19 16:15	SW8015MOD_NM	TPH by SW8015 Mod	07/09/19	07/15/19	JKR	GRO-DRO PHCC10C28 PI	
629723-003	S	SS03	07/01/19 16:15	SW8021B	BTEX by EPA 8021B	07/09/19	07/15/19	JKR	BR4FBZ BZ BZME EBZ X	
629723-003	S	SS03	07/01/19 16:15	E300_CL	Chloride by EPA 300	07/09/19	12/28/19	JKR	CL	
629723-004	S	SS04	07/01/19 16:30	SW8015MOD_NM	TPH by SW8015 Mod	07/09/19	07/15/19	JKR	GRO-DRO PHCC10C28 PI	
629723-004	S	SS04	07/01/19 16:30	E300_CL	Chloride by EPA 300	07/09/19	12/28/19	JKR	CL	
629723-004	S	SS04	07/01/19 16:30	SW8021B	BTEX by EPA 8021B	07/09/19	07/15/19	JKR	BR4FBZ BZ BZME EBZ X	
629723-005	S	SS05	07/01/19 16:45	SW8021B	BTEX by EPA 8021B	07/09/19	07/15/19	JKR	BR4FBZ BZ BZME EBZ X	
629723-005	S	SS05	07/01/19 16:45	SW8015MOD_NM	TPH by SW8015 Mod	07/09/19	07/15/19	JKR	GRO-DRO PHCC10C28 PI	
629723-005	S	SS05	07/01/19 16:45	E300_CL	Chloride by EPA 300	07/09/19	12/28/19	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 07/02/2019

Received By: Brianna Teel

Date Received: 07/03/2019 11:28

Cooler Temperature: 0.4

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 42710

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

Sent By: Elizabeth McClellan **Date Sent:** 07/02/2019 11:06 AM

Received By: Brianna Teel **Date Received:** 07/03/2019 11:28 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.4	
#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: 07/03/2019

Brianna Teel

Analytical Report 643207

for

LT Environmental, Inc.

Project Manager: Dan Moir

Bubbles 22-15 Federal #003H

012919143

15-NOV-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)

15-NOV-19

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

Reference: XENCO Report No(s): **643207**
Bubbles 22-15 Federal #003H
Project Address: Eddy County

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) 643207. 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. 643207 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 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	11-13-19 09:21	1 ft	643207-001
PH01A	S	11-13-19 09:26	2 ft	643207-002
PH02	S	11-13-19 09:40	1 ft	643207-003
PH02A	S	11-13-19 09:45	2 ft	643207-004
PH03	S	11-13-19 10:00	1 ft	643207-005
PH03A	S	11-13-19 10:05	2 ft	643207-006
PH03B	S	11-13-19 10:23	4 ft	Not Analyzed

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Bubbles 22-15 Federal #003H

Project ID: *012919143*
Work Order Number(s): *643207*

Report Date: *15-NOV-19*
Date Received: *11/14/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107589 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3107677 TPH by SW8015 Mod
Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 643207-006.
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 643207-006,643207-001.

Certificate of Analysis Summary 643207

LT Environmental, Inc., Arvada, CO

Project Name: Bubbles 22-15 Federal #003H

Project Id: 012919143
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Nov-14-19 11:30 am
Report Date: 15-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	643207-001		643207-002		643207-003		643207-004		643207-005		643207-006	
	Field Id:	PH01		PH01A		PH02		PH02A		PH03		PH03A	
	Depth:	1- ft		2- ft		1- ft		2- ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-13-19 09:21		Nov-13-19 09:26		Nov-13-19 09:40		Nov-13-19 09:45		Nov-13-19 10:00		Nov-13-19 10:05	
BTEX by EPA 8021B	***Extracted:***	Nov-14-19 12:00		Nov-14-19 12:00		Nov-14-19 12:00		Nov-14-19 12:00		Nov-14-19 12:00		Nov-14-19 12:00	
	Analyzed:	Nov-14-19 18:11		Nov-14-19 18:30		Nov-14-19 18:50		Nov-14-19 19:09		Nov-14-19 19:27		Nov-14-19 20:37	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
Toluene		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
Ethylbenzene		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
m,p-Xylenes		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
o-Xylene		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
Total Xylenes		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
Total BTEX		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
Chloride by EPA 300	***Extracted:***	Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30	
	Analyzed:	Nov-15-19 09:25		Nov-15-19 09:31		Nov-15-19 09:37		Nov-15-19 09:42		Nov-15-19 09:48		Nov-15-19 10:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		490	49.7	73.5	9.98	490	49.4	447	50.4	275	10.1	80.5	10.0
TPH by SW8015 Mod	***Extracted:***	Nov-14-19 17:00		Nov-14-19 17:00		Nov-14-19 17:00		Nov-14-19 17:00		Nov-14-19 17:00		Nov-14-19 17:00	
	Analyzed:	Nov-15-19 10:04		Nov-15-19 10:24		Nov-15-19 10:44		Nov-15-19 11:05		Nov-15-19 11:25		Nov-15-19 11:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.2	50.2	<50.2	50.2	<50.3	50.3	<49.9	49.9	<49.9	49.9	<50.0	50.0
Diesel Range Organics (DRO)		<50.2	50.2	<50.2	50.2	<50.3	50.3	<49.9	49.9	<49.9	49.9	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2	<50.2	50.2	<50.3	50.3	<49.9	49.9	<49.9	49.9	<50.0	50.0
Total GRO-DRO		<50.2	50.2	<50.2	50.2	<50.3	50.3	<49.9	49.9	<49.9	49.9	<50.0	50.0
Total TPH		<50.2	50.2	<50.2	50.2	<50.3	50.3	<49.9	49.9	<49.9	49.9	<50.0	50.0

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-001	Date Collected:	11.13.19 09.21	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**490**	49.7	mg/kg	11.15.19 09.25		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.15.19 10.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.15.19 10.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.15.19 10.04	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.15.19 10.04	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.15.19 10.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	135	%	70-135	11.15.19 10.04	
o-Terphenyl	84-15-1	143	%	70-135	11.15.19 10.04	**

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-001	Date Collected:	11.13.19 09.21	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.14.19 18.11	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	11.14.19 18.11	
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.14.19 18.11	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-002	Date Collected:	11.13.19 09.26	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**73.5**	9.98	mg/kg	11.15.19 09.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.15.19 10.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.15.19 10.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.15.19 10.24	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.15.19 10.24	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.15.19 10.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	11.15.19 10.24	
o-Terphenyl	84-15-1	95	%	70-135	11.15.19 10.24	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-002	Date Collected:	11.13.19 09.26	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.14.19 18.30	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.14.19 18.30	
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.14.19 18.30	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-003	Date Collected:	11.13.19 09.40	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**490**	49.4	mg/kg	11.15.19 09.37		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.15.19 10.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.15.19 10.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.15.19 10.44	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.15.19 10.44	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.15.19 10.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.15.19 10.44	
o-Terphenyl	84-15-1	116	%	70-135	11.15.19 10.44	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-003	Date Collected:	11.13.19 09.40	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.14.19 18.50	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.14.19 18.50	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.14.19 18.50	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-004	Date Collected:	11.13.19 09.45	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**447**	50.4	mg/kg	11.15.19 09.42		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.15.19 11.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.15.19 11.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.15.19 11.05	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.15.19 11.05	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.15.19 11.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.15.19 11.05	
o-Terphenyl	84-15-1	96	%	70-135	11.15.19 11.05	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-004	Date Collected:	11.13.19 09.45	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.14.19 19.09	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.14.19 19.09	
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.14.19 19.09	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-005	Date Collected:	11.13.19 10.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**275**	10.1	mg/kg	11.15.19 09.48		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.15.19 11.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.15.19 11.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.15.19 11.25	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.15.19 11.25	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.15.19 11.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.15.19 11.25	
o-Terphenyl	84-15-1	110	%	70-135	11.15.19 11.25	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-005	Date Collected:	11.13.19 10.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.14.19 19.27	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.14.19 19.27	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.14.19 19.27	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-006	Date Collected:	11.13.19 10.05	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**80.5**	10.0	mg/kg	11.15.19 10.06		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.15.19 11.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.15.19 11.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.15.19 11.45	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.15.19 11.45	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.15.19 11.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	139	%	70-135	11.15.19 11.45	**
o-Terphenyl	84-15-1	152	%	70-135	11.15.19 11.45	**

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-006	Date Collected:	11.13.19 10.05	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.14.19 20.37	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.14.19 20.37	
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.14.19 20.37	

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 643207

LT Environmental, Inc.

Bubbles 22-15 Federal #003H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3107636 Matrix: Solid Date Prep: 11.15.19
MB Sample Id: 7690444-1-BLK LCS Sample Id: 7690444-1-BKS LCSD Sample Id: 7690444-1-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	248	99	249	100	90-110	0	20	mg/kg	11.15.19 08:14	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3107636 Matrix: Soil Date Prep: 11.15.19
Parent Sample Id: 643198-028 MS Sample Id: 643198-028 S MSD Sample Id: 643198-028 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	681	199	860	90	868	94	90-110	1	20	mg/kg	11.15.19 08:32	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3107636 Matrix: Soil Date Prep: 11.15.19
Parent Sample Id: 643207-005 MS Sample Id: 643207-005 S MSD Sample Id: 643207-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	275	199	477	102	478	102	90-110	0	20	mg/kg	11.15.19 09:54	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107677 Matrix: Solid Date Prep: 11.14.19
MB Sample Id: 7690450-1-BLK LCS Sample Id: 7690450-1-BKS LCSD Sample Id: 7690450-1-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	983	98	916	92	70-135	7	35	mg/kg	11.15.19 08:24	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1030	103	70-135	6	35	mg/kg	11.15.19 08:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		134		125		70-135	%	11.15.19 08:24
o-Terphenyl	114		120		110		70-135	%	11.15.19 08:24

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107677 Matrix: Solid Date Prep: 11.14.19
MB Sample Id: 7690450-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.15.19 08:04	

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 643207

LT Environmental, Inc.

Bubbles 22-15 Federal #003H

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3107677 — Matrix: Soil — Date Prep: 11.14.19
Parent Sample Id: 643198-033 — MS Sample Id: 643198-033 S — MSD Sample Id: 643198-033 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)	<50.3	1010	917	91	905	91	70-135	1	35	mg/kg	11.15.19 09:24	
Diesel Range Organics (DRO)	<50.3	1010	1040	103	1020	102	70-135	2	35	mg/kg	11.15.19 09:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		110		70-135	%	11.15.19 09:24
o-Terphenyl	109		112		70-135	%	11.15.19 09:24

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3107589 — Matrix: Solid — Date Prep: 11.14.19
MB Sample Id: 7690312-1-BLK — LCS Sample Id: 7690312-1-BKS — LCSD Sample Id: 7690312-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0989	99	0.0948	95	70-130	4	35	mg/kg	11.14.19 10:38	
Toluene	<0.00100	0.100	0.0995	100	0.0957	96	70-130	4	35	mg/kg	11.14.19 10:38	
Ethylbenzene	<0.00100	0.100	0.101	101	0.0969	97	71-129	4	35	mg/kg	11.14.19 10:38	
m,p-Xylenes	<0.00200	0.200	0.215	108	0.206	103	70-135	4	35	mg/kg	11.14.19 10:38	
o-Xylene	<0.00100	0.100	0.107	107	0.102	102	71-133	5	35	mg/kg	11.14.19 10:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		103		70-130	%	11.14.19 10:38
4-Bromofluorobenzene	105		113		111		70-130	%	11.14.19 10:38

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3107589 — Matrix: Soil — Date Prep: 11.14.19
Parent Sample Id: 643116-021 — MS Sample Id: 643116-021 S — MSD Sample Id: 643116-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000998	0.0998	0.0940	94	0.0874	88	70-130	7	35	mg/kg	11.14.19 11:16	
Toluene	<0.000998	0.0998	0.0943	94	0.0913	92	70-130	3	35	mg/kg	11.14.19 11:16	
Ethylbenzene	<0.000998	0.0998	0.0945	95	0.0924	94	71-129	2	35	mg/kg	11.14.19 11:16	
m,p-Xylenes	<0.00200	0.200	0.201	101	0.197	99	70-135	2	35	mg/kg	11.14.19 11:16	
o-Xylene	<0.000998	0.0998	0.101	101	0.0991	100	71-133	2	35	mg/kg	11.14.19 11:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		103		70-130	%	11.14.19 11:16
4-Bromofluorobenzene	119		119		70-130	%	11.14.19 11:16

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: 4B207

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

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 ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Bubbles 22-15 Federal #003H	Turn Around	
Project Number:	012919143	Routine ☐	
P.O. Number:	Eddy County	Rush: 3 day	
Sampler's Name:	William Mather	Due Date: 11/17/19	

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:	7	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Work Order Notes / Sample Comments
PH01	s	11/13/2019	9:21	1'	1	x	x	x	discrete
PH01A	s	11/13/2019	9:26	2'	1	x	x	x	discrete
PH02	s	11/13/2019	9:40	1'	1	x	x	x	discrete
PH02A	s	11/13/2019	9:45	2'	1	x	x	x	discrete
PH03	s	11/13/2019	10:00	1'	1	x	x	x	discrete
PH03A	s	11/13/2019	10:05	2'	1	x	x	x	discrete
PH03B	s	11/13/2019	10:23	4'	1	x	x	x	discrete

ANALYSIS REQUEST

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	Anna Byers	11/14/19 0910	2 Anna Byers		11/14/19 11:30
			4		
			6		

Revised Date 051418 Rev. 2018.1

Analytical Report 643207

for

LT Environmental, Inc.

Project Manager: Dan Moir

Bubbles 22-15 Federal #001H

012919143

18-NOV-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)

18-NOV-19

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

Reference: XENCO Report No(s): **643207**
Bubbles 22-15 Federal #001H
Project Address: Eddy County

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) 643207. 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. 643207 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 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	11-13-19 09:21	1 ft	643207-001
PH01A	S	11-13-19 09:26	2 ft	643207-002
PH02	S	11-13-19 09:40	1 ft	643207-003
PH02A	S	11-13-19 09:45	2 ft	643207-004
PH03	S	11-13-19 10:00	1 ft	643207-005
PH03A	S	11-13-19 10:05	2 ft	643207-006
PH03B	S	11-13-19 10:23	4 ft	Not Analyzed

Version: 1.%

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Bubbles 22-15 Federal #001H

Project ID: *012919143*
Work Order Number(s): *643207*

Report Date: *18-NOV-19*
Date Received: *11/14/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107589 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3107677 TPH by SW8015 Mod
Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 643207-006.
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 643207-006,643207-001.

Certificate of Analysis Summary 643207

LT Environmental, Inc., Arvada, CO

Project Name: Bubbles 22-15 Federal #001H

Project Id: 012919143
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Nov-14-19 11:30 am
Report Date: 18-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	643207-001		643207-002		643207-003		643207-004		643207-005		643207-006	
	Field Id:	PH01		PH01A		PH02		PH02A		PH03		PH03A	
	Depth:	1- ft		2- ft		1- ft		2- ft		1- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-13-19 09:21		Nov-13-19 09:26		Nov-13-19 09:40		Nov-13-19 09:45		Nov-13-19 10:00		Nov-13-19 10:05	
BTEX by EPA 8021B	*Extracted:*	Nov-14-19 12:00		Nov-14-19 12:00		Nov-14-19 12:00		Nov-14-19 12:00		Nov-14-19 12:00		Nov-14-19 12:00	
	Analyzed:	Nov-14-19 18:11		Nov-14-19 18:30		Nov-14-19 18:50		Nov-14-19 19:09		Nov-14-19 19:27		Nov-14-19 20:37	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
Toluene		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
Ethylbenzene		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
m,p-Xylenes		<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00199	0.00199
o-Xylene		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
Total Xylenes		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
Total BTEX		<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.000998	0.000998	<0.00100	0.00100	<0.000996	0.000996
Chloride by EPA 300	*Extracted:*	Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30	
	Analyzed:	Nov-15-19 09:25		Nov-15-19 09:31		Nov-15-19 09:37		Nov-15-19 09:42		Nov-15-19 09:48		Nov-15-19 10:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		490	49.7	73.5	9.98	490	49.4	447	50.4	275	10.1	80.5	10.0
TPH by SW8015 Mod	*Extracted:*	Nov-14-19 17:00		Nov-14-19 17:00		Nov-14-19 17:00		Nov-14-19 17:00		Nov-14-19 17:00		Nov-14-19 17:00	
	Analyzed:	Nov-15-19 10:04		Nov-15-19 10:24		Nov-15-19 10:44		Nov-15-19 11:05		Nov-15-19 11:25		Nov-15-19 11:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.2	50.2	<50.2	50.2	<50.3	50.3	<49.9	49.9	<49.9	49.9	<50.0	50.0
Diesel Range Organics (DRO)		<50.2	50.2	<50.2	50.2	<50.3	50.3	<49.9	49.9	<49.9	49.9	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2	<50.2	50.2	<50.3	50.3	<49.9	49.9	<49.9	49.9	<50.0	50.0
Total GRO-DRO		<50.2	50.2	<50.2	50.2	<50.3	50.3	<49.9	49.9	<49.9	49.9	<50.0	50.0
Total TPH		<50.2	50.2	<50.2	50.2	<50.3	50.3	<49.9	49.9	<49.9	49.9	<50.0	50.0

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-001	Date Collected:	11.13.19 09.21	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**490**	49.7	mg/kg	11.15.19 09.25		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.15.19 10.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.15.19 10.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.15.19 10.04	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.15.19 10.04	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.15.19 10.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	135	%	70-135	11.15.19 10.04	
o-Terphenyl	84-15-1	143	%	70-135	11.15.19 10.04	**

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH01**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-001	Date Collected:	11.13.19 09.21	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.14.19 18.11	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.14.19 18.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	109	%	70-130	11.14.19 18.11	
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.14.19 18.11	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-002	Date Collected:	11.13.19 09.26	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**73.5**	9.98	mg/kg	11.15.19 09.31		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.15.19 10.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.15.19 10.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.15.19 10.24	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.15.19 10.24	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.15.19 10.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	11.15.19 10.24	
o-Terphenyl	84-15-1	95	%	70-135	11.15.19 10.24	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH01A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-002	Date Collected:	11.13.19 09.26	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.14.19 18.30	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.14.19 18.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.14.19 18.30	
4-Bromofluorobenzene	460-00-4	90	%	70-130	11.14.19 18.30	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-003	Date Collected:	11.13.19 09.40	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**490**	49.4	mg/kg	11.15.19 09.37		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.15.19 10.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.15.19 10.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.15.19 10.44	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.15.19 10.44	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.15.19 10.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.15.19 10.44	
o-Terphenyl	84-15-1	116	%	70-135	11.15.19 10.44	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH02**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-003	Date Collected:	11.13.19 09.40	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.14.19 18.50	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.14.19 18.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.14.19 18.50	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.14.19 18.50	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-004	Date Collected:	11.13.19 09.45	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**447**	50.4	mg/kg	11.15.19 09.42		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.15.19 11.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.15.19 11.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.15.19 11.05	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.15.19 11.05	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.15.19 11.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.15.19 11.05	
o-Terphenyl	84-15-1	96	%	70-135	11.15.19 11.05	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH02A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-004	Date Collected:	11.13.19 09.45	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.14.19 19.09	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.14.19 19.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	112	%	70-130	11.14.19 19.09	
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.14.19 19.09	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-005	Date Collected:	11.13.19 10.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**275**	10.1	mg/kg	11.15.19 09.48		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.15.19 11.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.15.19 11.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.15.19 11.25	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.15.19 11.25	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.15.19 11.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.15.19 11.25	
o-Terphenyl	84-15-1	110	%	70-135	11.15.19 11.25	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH03**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-005	Date Collected:	11.13.19 10.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.14.19 19.27	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.14.19 19.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.14.19 19.27	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.14.19 19.27	

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-006	Date Collected:	11.13.19 10.05	Sample Depth:	2 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**80.5**	10.0	mg/kg	11.15.19 10.06		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.14.19 17.00	Basis:	Wet Weight
Seq Number:	3107677				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.15.19 11.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.15.19 11.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.15.19 11.45	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.15.19 11.45	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.15.19 11.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	139	%	70-135	11.15.19 11.45	**
o-Terphenyl	84-15-1	152	%	70-135	11.15.19 11.45	**

Certificate of Analytical Results 643207

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #001H

Sample Id:	**PH03A**	Matrix:	Soil	Date Received:	11.14.19 11.30
Lab Sample Id:	643207-006	Date Collected:	11.13.19 10.05	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 12.00	Basis:	Wet Weight
Seq Number:	3107589				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.14.19 20.37	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.14.19 20.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.14.19 20.37	
4-Bromofluorobenzene	460-00-4	113	%	70-130	11.14.19 20.37	

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 643207

LT Environmental, Inc.

Bubbles 22-15 Federal #001H

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107636 — Matrix: Solid — Date Prep: 11.15.19
MB Sample Id: 7690444-1-BLK — LCS Sample Id: 7690444-1-BKS — LCSD Sample Id: 7690444-1-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	248	99	249	100	90-110	0	20	mg/kg	11.15.19 08:14	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107636 — Matrix: Soil — Date Prep: 11.15.19
Parent Sample Id: 643198-028 — MS Sample Id: 643198-028 S — MSD Sample Id: 643198-028 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	681	199	860	90	868	94	90-110	1	20	mg/kg	11.15.19 08:32	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107636 — Matrix: Soil — Date Prep: 11.15.19
Parent Sample Id: 643207-005 — MS Sample Id: 643207-005 S — MSD Sample Id: 643207-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	275	199	477	102	478	102	90-110	0	20	mg/kg	11.15.19 09:54	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3107677 — Matrix: Solid — Date Prep: 11.14.19
MB Sample Id: 7690450-1-BLK — LCS Sample Id: 7690450-1-BKS — LCSD Sample Id: 7690450-1-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	983	98	916	92	70-135	7	35	mg/kg	11.15.19 08:24	
Diesel Range Organics (DRO)	<50.0	1000	1090	109	1030	103	70-135	6	35	mg/kg	11.15.19 08:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		134		125		70-135	%	11.15.19 08:24
o-Terphenyl	114		120		110		70-135	%	11.15.19 08:24

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3107677 — Matrix: Solid — Date Prep: 11.14.19
MB Sample Id: 7690450-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.15.19 08:04	

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 643207

LT Environmental, Inc.

Bubbles 22-15 Federal #001H

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107677 Matrix: Soil Date Prep: 11.14.19
Parent Sample Id: 643198-033 MS Sample Id: 643198-033 S MSD Sample Id: 643198-033 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)	<50.3	1010	917	91	905	91	70-135	1	35	mg/kg	11.15.19 09:24	
Diesel Range Organics (DRO)	<50.3	1010	1040	103	1020	102	70-135	2	35	mg/kg	11.15.19 09:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		110		70-135	%	11.15.19 09:24
o-Terphenyl	109		112		70-135	%	11.15.19 09:24

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3107589 Matrix: Solid Date Prep: 11.14.19
MB Sample Id: 7690312-1-BLK LCS Sample Id: 7690312-1-BKS LCSD Sample Id: 7690312-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0989	99	0.0948	95	70-130	4	35	mg/kg	11.14.19 10:38	
Toluene	<0.00100	0.100	0.0995	100	0.0957	96	70-130	4	35	mg/kg	11.14.19 10:38	
Ethylbenzene	<0.00100	0.100	0.101	101	0.0969	97	71-129	4	35	mg/kg	11.14.19 10:38	
m,p-Xylenes	<0.00200	0.200	0.215	108	0.206	103	70-135	4	35	mg/kg	11.14.19 10:38	
o-Xylene	<0.00100	0.100	0.107	107	0.102	102	71-133	5	35	mg/kg	11.14.19 10:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		103		70-130	%	11.14.19 10:38
4-Bromofluorobenzene	105		113		111		70-130	%	11.14.19 10:38

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3107589 Matrix: Soil Date Prep: 11.14.19
Parent Sample Id: 643116-021 MS Sample Id: 643116-021 S MSD Sample Id: 643116-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000998	0.0998	0.0940	94	0.0874	88	70-130	7	35	mg/kg	11.14.19 11:16	
Toluene	<0.000998	0.0998	0.0943	94	0.0913	92	70-130	3	35	mg/kg	11.14.19 11:16	
Ethylbenzene	<0.000998	0.0998	0.0945	95	0.0924	94	71-129	2	35	mg/kg	11.14.19 11:16	
m,p-Xylenes	<0.00200	0.200	0.201	101	0.197	99	70-135	2	35	mg/kg	11.14.19 11:16	
o-Xylene	<0.000998	0.0998	0.101	101	0.0991	100	71-133	2	35	mg/kg	11.14.19 11:16	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		103		70-130	%	11.14.19 11:16
4-Bromofluorobenzene	119		119		70-130	%	11.14.19 11:16

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: 463207

XENCO LABORATORIES

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)

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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 ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Bubbles 22-15 Federal #003H	Turn Around	
Project Number:	012919143	Routine ☐	
P.O. Number:	Eddy County	Rush: 3 day	
Sampler's Name:	William Mather	Due Date: 11/17/19	

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:	7	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Work Order Notes / Sample Comments
PH01	s	11/13/2019	9:21	1'	1	x	x	x	discrete
PH01A	s	11/13/2019	9:26	2'	1	x	x	x	discrete
PH02	s	11/13/2019	9:40	1'	1	x	x	x	discrete
PH02A	s	11/13/2019	9:45	2'	1	x	x	x	discrete
PH03	s	11/13/2019	10:00	1'	1	x	x	x	discrete
PH03A	s	11/13/2019	10:05	2'	1	x	x	x	discrete
PH03B	s	11/13/2019	10:23	4'	1	x	x	x	discrete

ANALYSIS REQUEST

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	Anna Byers	11/14/19 0910	2 Anna Byers		11/14/19 11:30
			4		
			6		

Revised Date 051418 Rev. 2018.1

Analytical Report 643273

for

LT Environmental, Inc.

Project Manager: Dan Moir

Bubbles 22-15 Federal #003H

012919143

19-NOV-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)

19-NOV-19

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

Reference: XENCO Report No(s): **643273**
Bubbles 22-15 Federal #003H
Project Address: Eddy County

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) 643273. 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. 643273 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 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	11-14-19 08:42	0.5 ft	643273-001
FS02	S	11-14-19 08:46	0.5 ft	643273-002
FS03	S	11-14-19 08:49	0.5 ft	643273-003
FS04	S	11-14-19 08:52	0.5 ft	643273-004
FS05	S	11-14-19 09:45	0.5 ft	643273-005
FS06	S	11-14-19 09:47	0.5 ft	643273-006
FS07	S	11-14-19 09:50	0.5 ft	643273-007
FS08	S	11-14-19 09:53	0.5 ft	643273-008
FS09	S	11-14-19 09:36	2.0 ft	643273-009
FS10	S	11-14-19 10:13	0.5 ft	643273-010
FS11	S	11-14-19 10:16	0.5 ft	643273-011
FS12	S	11-14-19 10:19	0.5 ft	643273-012
FS13	S	11-14-19 10:47	0.5 ft	643273-013
FS14	S	11-14-19 10:50	0.5 ft	643273-014
FS15	S	11-14-19 10:54	0.5 ft	643273-015
FS16	S	11-14-19 10:56	0.5 ft	643273-016
FS17	S	11-14-19 11:18	0.5 ft	643273-017
FS18	S	11-14-19 11:21	0.5 ft	643273-018
FS19	S	11-14-19 11:23	2.5 ft	643273-019
FS20	S	11-14-19 11:25	2.5 ft	643273-020
SW01	S	11-14-19 09:38	2.0 ft	643273-021
SW02	S	11-14-19 11:29	2.5 ft	643273-022
SW03	S	11-14-19 11:31	2.5 ft	643273-023

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Bubbles 22-15 Federal #003H

Project ID: *012919143*
Work Order Number(s): *643273*

Report Date: *19-NOV-19*
Date Received: *11/14/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3107600 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3107730 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3107772 Chloride by EPA 300
Lab Sample ID 643273-016 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 643273-006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021, -022, -023.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 643273

LT Environmental, Inc., Arvada, CO

Project Name: Bubbles 22-15 Federal #003H

Project Id: 012919143
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Nov-14-19 04:42 pm
Report Date: 19-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	643273-001		643273-002		643273-003		643273-004		643273-005		643273-006	
	Field Id:	FS01		FS02		FS03		FS04		FS05		FS06	
	Depth:	0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-14-19 08:42		Nov-14-19 08:46		Nov-14-19 08:49		Nov-14-19 08:52		Nov-14-19 09:45		Nov-14-19 09:47	
BTEX by EPA 8021B	*Extracted:*	Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11	
	Analyzed:	Nov-15-19 11:32		Nov-15-19 11:51		Nov-15-19 12:10		Nov-15-19 17:43		Nov-15-19 12:49		Nov-15-19 13:08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998	<0.00101	0.00101	<0.000996	0.000996
Toluene		<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998	<0.00101	0.00101	<0.000996	0.000996
Ethylbenzene		<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998	<0.00101	0.00101	<0.000996	0.000996
m,p-Xylenes		<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199
o-Xylene		<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998	<0.00101	0.00101	<0.000996	0.000996
Total Xylenes		<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998	<0.00101	0.00101	<0.000996	0.000996
Total BTEX		<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.000998	0.000998	<0.00101	0.00101	<0.000996	0.000996
Chloride by EPA 300	*Extracted:*	Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 07:30		Nov-15-19 08:11	
	Analyzed:	Nov-15-19 10:41		Nov-15-19 10:47		Nov-15-19 10:53		Nov-15-19 10:59		Nov-15-19 11:05		Nov-15-19 11:40	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1370	99.4	904	49.6	826	9.98	692	50.1	501	50.4	316	9.94
TPH by SW8015 Mod	*Extracted:*	Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00	
	Analyzed:	Nov-15-19 18:19		Nov-15-19 19:20		Nov-15-19 19:41		Nov-15-19 20:01		Nov-15-19 20:21		Nov-15-19 20:42	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1	<50.2	50.2	<50.2	50.2	<50.1	50.1	<50.3	50.3	<50.1	50.1
Diesel Range Organics (DRO)		<50.1	50.1	<50.2	50.2	<50.2	50.2	<50.1	50.1	<50.3	50.3	<50.1	50.1
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1	<50.2	50.2	<50.2	50.2	<50.1	50.1	<50.3	50.3	<50.1	50.1
Total GRO-DRO		<50.1	50.1	<50.2	50.2	<50.2	50.2	<50.1	50.1	<50.3	50.3	<50.1	50.1
Total TPH		<50.1	50.1	<50.2	50.2	<50.2	50.2	<50.1	50.1	<50.3	50.3	<50.1	50.1

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 643273

LT Environmental, Inc., Arvada, CO

Project Name: Bubbles 22-15 Federal #003H

Project Id: 012919143
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Nov-14-19 04:42 pm
Report Date: 19-NOV-19
Project Manager: Jessica Kramer

Analysis Requested	*Lab Id:*	643273-007		643273-008		643273-009		643273-010		643273-011		643273-012	
	Field Id:	FS07		FS08		FS09		FS10		FS11		FS12	
	Depth:	0.5- ft		0.5- ft		2.0- ft		0.5- ft		0.5- ft		0.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-14-19 09:50		Nov-14-19 09:53		Nov-14-19 09:36		Nov-14-19 10:13		Nov-14-19 10:16		Nov-14-19 10:19	
BTEX by EPA 8021B	*Extracted:*	Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11	
	Analyzed:	Nov-15-19 13:27		Nov-15-19 14:31		Nov-15-19 14:50		Nov-15-19 15:10		Nov-15-19 15:29		Nov-15-19 15:48	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00101	0.00101	<0.000994	0.000994	<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.00101	0.00101
Toluene		<0.00101	0.00101	<0.000994	0.000994	<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.00101	0.00101
Ethylbenzene		<0.00101	0.00101	<0.000994	0.000994	<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.00101	0.00101
m,p-Xylenes		<0.00202	0.00202	<0.00199	0.00199	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202
o-Xylene		<0.00101	0.00101	<0.000994	0.000994	<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.00101	0.00101
Total Xylenes		<0.00101	0.00101	<0.000994	0.000994	<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.00101	0.00101
Total BTEX		<0.00101	0.00101	<0.000994	0.000994	<0.00100	0.00100	<0.00101	0.00101	<0.000996	0.000996	<0.00101	0.00101
Chloride by EPA 300	*Extracted:*	Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11	
	Analyzed:	Nov-15-19 11:58		Nov-15-19 12:03		Nov-15-19 12:09		Nov-15-19 12:15		Nov-15-19 12:33		Nov-15-19 12:39	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		318	50.4	65.0	10.1	37.8	9.94	153	9.88	226	9.90	586	49.5
TPH by SW8015 Mod	*Extracted:*	Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00	
	Analyzed:	Nov-15-19 21:02		Nov-15-19 21:22		Nov-15-19 21:43		Nov-15-19 22:03		Nov-15-19 22:43		Nov-15-19 23:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.0	50.0	<50.3	50.3
Diesel Range Organics (DRO)		199	50.1	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.0	50.0	276	50.3
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.0	50.0	<50.3	50.3
Total GRO-DRO		199	50.1	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.0	50.0	276	50.3
Total TPH		199	50.1	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.0	50.0	276	50.3

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 643273

LT Environmental, Inc., Arvada, CO

Project Name: Bubbles 22-15 Federal #003H

Project Id: 012919143
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Nov-14-19 04:42 pm
Report Date: 19-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	643273-013		643273-014		643273-015		643273-016		643273-017		643273-018	
	Field Id:	FS13		FS14		FS15		FS16		FS17		FS18	
	Depth:	0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft		0.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-14-19 10:47		Nov-14-19 10:50		Nov-14-19 10:54		Nov-14-19 10:56		Nov-14-19 11:18		Nov-14-19 11:21	
BTEX by EPA 8021B	***Extracted:***	Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 19:11		Nov-14-19 18:11	
	Analyzed:	Nov-15-19 16:07		Nov-15-19 16:26		Nov-15-19 16:45		Nov-15-19 17:05		Nov-15-19 17:24		Nov-15-19 21:09	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.000994	0.000994	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100	<0.00100	0.00100	<0.000998	0.000998
Toluene		<0.000994	0.000994	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100	<0.00100	0.00100	0.00103	0.000998
Ethylbenzene		<0.000994	0.000994	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100	<0.00100	0.00100	0.00288	0.000998
m,p-Xylenes		<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00201	0.00201	0.0107	0.00200
o-Xylene		<0.000994	0.000994	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100	<0.00100	0.00100	0.0108	0.000998
Total Xylenes		<0.000994	0.000994	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100	<0.00100	0.00100	0.0215	0.000998
Total BTEX		<0.000994	0.000994	<0.00101	0.00101	<0.000998	0.000998	<0.00100	0.00100	<0.00100	0.00100	0.0254	0.000998
Chloride by EPA 300	***Extracted:***	Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11	
	Analyzed:	Nov-15-19 12:45		Nov-15-19 12:51		Nov-15-19 12:58		Nov-15-19 13:04		Nov-15-19 14:54		Nov-15-19 15:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		358	49.9	409	10.1	632	50.4	586	50.2	551	49.9	451	9.98
TPH by SW8015 Mod	***Extracted:***	Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00	
	Analyzed:	Nov-15-19 23:24		Nov-15-19 23:44		Nov-16-19 00:04		Nov-16-19 00:24		Nov-16-19 00:44		Nov-16-19 01:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.3	50.3	<50.2	50.2	<50.3	50.3	<50.3	50.3	<50.3	50.3	<50.1	50.1
Diesel Range Organics (DRO)		<50.3	50.3	<50.2	50.2	78.2	50.3	3170	50.3	<50.3	50.3	375	50.1
Motor Oil Range Hydrocarbons (MRO)		<50.3	50.3	<50.2	50.2	<50.3	50.3	<50.3	50.3	<50.3	50.3	<50.1	50.1
Total GRO-DRO		<50.3	50.3	<50.2	50.2	78.2	50.3	3170	50.3	<50.3	50.3	375	50.1
Total TPH		<50.3	50.3	<50.2	50.2	78.2	50.3	3170	50.3	<50.3	50.3	375	50.1

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 643273

LT Environmental, Inc., Arvada, CO

Project Name: Bubbles 22-15 Federal #003H

Project Id: 012919143
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Thu Nov-14-19 04:42 pm
Report Date: 19-NOV-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	643273-019		643273-020		643273-021		643273-022		643273-023	
	Field Id:	FS19		FS20		SW01		SW02		SW03	
	Depth:	2.5- ft		2.5- ft		2.0- ft		2.5- ft		2.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-14-19 11:23		Nov-14-19 11:25		Nov-14-19 09:38		Nov-14-19 11:29		Nov-14-19 11:31	
BTEX by EPA 8021B	*Extracted:*	Nov-14-19 18:11		Nov-14-19 18:11		Nov-14-19 18:11		Nov-14-19 18:11		Nov-14-19 18:11	
	Analyzed:	Nov-15-19 21:30		Nov-15-19 11:15		Nov-15-19 11:35		Nov-15-19 11:56		Nov-15-19 12:16	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.00101	0.00101
Toluene		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.00101	0.00101
Ethylbenzene		<0.00100	0.00100	<0.00101	0.00101	<0.00101	0.00101	<0.00100	0.00100	<0.00101	0.00101
m,p-Xylenes		<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202
o-Xylene		0.00184	0.00100	<0.00101	0.00101	0.00132	0.00101	<0.00100	0.00100	0.00157	0.00101
Total Xylenes		0.00184	0.00100	<0.00101	0.00101	0.00132	0.00101	<0.00100	0.00100	0.00157	0.00101
Total BTEX		0.00184	0.00100	<0.00101	0.00101	0.00132	0.00101	<0.00100	0.00100	0.00157	0.00101
Chloride by EPA 300	*Extracted:*	Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11		Nov-15-19 08:11	
	Analyzed:	Nov-15-19 15:07		Nov-15-19 15:13		Nov-15-19 15:32		Nov-15-19 15:38		Nov-15-19 15:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		69.5	9.96	49.1	9.94	73.7	10.0	41.0	9.98	101	10.1
TPH by SW8015 Mod	*Extracted:*	Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00		Nov-15-19 17:00	
	Analyzed:	Nov-16-19 01:25		Nov-15-19 18:19		Nov-15-19 19:20		Nov-15-19 19:41		Nov-15-19 20:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<49.9	49.9	<49.8	49.8	<50.2	50.2	<50.2	50.2
Diesel Range Organics (DRO)		<49.9	49.9	237	49.9	<49.8	49.8	71.5	50.2	<50.2	50.2
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<49.9	49.9	<49.8	49.8	<50.2	50.2	<50.2	50.2
Total GRO-DRO		<49.9	49.9	237	49.9	<49.8	49.8	71.5	50.2	<50.2	50.2
Total TPH		<49.9	49.9	237	49.9	<49.8	49.8	71.5	50.2	<50.2	50.2

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-001	Date Collected:	11.14.19 08.42	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1370**	99.4	mg/kg	11.15.19 10.41		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.15.19 18.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.15.19 18.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.15.19 18.19	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.15.19 18.19	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.15.19 18.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.15.19 18.19	
o-Terphenyl	84-15-1	114	%	70-135	11.15.19 18.19	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS01**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-001	Date Collected:	11.14.19 08.42	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 11.32	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 11.32	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 11.32	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.15.19 11.32	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.15.19 11.32	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.15.19 11.32	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.15.19 11.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.15.19 11.32	
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.15.19 11.32	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-002	Date Collected:	11.14.19 08.46	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**904**	49.6	mg/kg	11.15.19 10.47		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.15.19 19.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.15.19 19.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.15.19 19.20	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.15.19 19.20	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.15.19 19.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.15.19 19.20	
o-Terphenyl	84-15-1	101	%	70-135	11.15.19 19.20	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS02**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-002	Date Collected:	11.14.19 08.46	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 11.51	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 11.51	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 11.51	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.15.19 11.51	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.15.19 11.51	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.15.19 11.51	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.15.19 11.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.15.19 11.51	
4-Bromofluorobenzene	460-00-4	120	%	70-130	11.15.19 11.51	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-003	Date Collected:	11.14.19 08.49	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**826**	9.98	mg/kg	11.15.19 10.53		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.15.19 19.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.15.19 19.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.15.19 19.41	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.15.19 19.41	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.15.19 19.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.15.19 19.41	
o-Terphenyl	84-15-1	106	%	70-135	11.15.19 19.41	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS03**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-003	Date Collected:	11.14.19 08.49	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.15.19 12.10	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.15.19 12.10	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.15.19 12.10	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.15.19 12.10	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.15.19 12.10	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.15.19 12.10	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.15.19 12.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.15.19 12.10	
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.15.19 12.10	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-004	Date Collected:	11.14.19 08.52	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**692**	50.1	mg/kg	11.15.19 10.59		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.15.19 20.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.15.19 20.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.15.19 20.01	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.15.19 20.01	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.15.19 20.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.15.19 20.01	
o-Terphenyl	84-15-1	103	%	70-135	11.15.19 20.01	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS04**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-004	Date Collected:	11.14.19 08.52	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.15.19 17.43	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.15.19 17.43	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.15.19 17.43	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.15.19 17.43	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.15.19 17.43	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.15.19 17.43	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.15.19 17.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.15.19 17.43	
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.15.19 17.43	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-005	Date Collected:	11.14.19 09.45	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 07.30	Basis:	Wet Weight
Seq Number:	3107636				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**501**	50.4	mg/kg	11.15.19 11.05		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.15.19 20.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.15.19 20.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.15.19 20.21	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.15.19 20.21	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.15.19 20.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.15.19 20.21	
o-Terphenyl	84-15-1	101	%	70-135	11.15.19 20.21	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS05**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-005	Date Collected:	11.14.19 09.45	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 12.49	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 12.49	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 12.49	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.15.19 12.49	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.15.19 12.49	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.15.19 12.49	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.15.19 12.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.15.19 12.49	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.15.19 12.49	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-006	Date Collected:	11.14.19 09.47	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**316**	9.94	mg/kg	11.15.19 11.40		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.15.19 20.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.15.19 20.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.15.19 20.42	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.15.19 20.42	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.15.19 20.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	11.15.19 20.42	
o-Terphenyl	84-15-1	103	%	70-135	11.15.19 20.42	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS06**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-006	Date Collected:	11.14.19 09.47	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.15.19 13.08	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.15.19 13.08	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.15.19 13.08	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.15.19 13.08	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.15.19 13.08	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.15.19 13.08	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.15.19 13.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	70-130	11.15.19 13.08	
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.15.19 13.08	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-007	Date Collected:	11.14.19 09.50	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**318**	50.4	mg/kg	11.15.19 11.58		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.15.19 21.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	**199**	50.1	mg/kg	11.15.19 21.02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.15.19 21.02	U	1
Total GRO-DRO	PHC628	**199**	50.1	mg/kg	11.15.19 21.02		1
Total TPH	PHC635	**199**	50.1	mg/kg	11.15.19 21.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	11.15.19 21.02	
o-Terphenyl	84-15-1	104	%	70-135	11.15.19 21.02	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS07**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-007	Date Collected:	11.14.19 09.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 13.27	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 13.27	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 13.27	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.15.19 13.27	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.15.19 13.27	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.15.19 13.27	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.15.19 13.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	11.15.19 13.27	
1,4-Difluorobenzene	540-36-3	91	%	70-130	11.15.19 13.27	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS08**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-008	Date Collected:	11.14.19 09.53	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**65.0**	10.1	mg/kg	11.15.19 12.03		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.15.19 21.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.15.19 21.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.15.19 21.22	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.15.19 21.22	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.15.19 21.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.15.19 21.22	
o-Terphenyl	84-15-1	106	%	70-135	11.15.19 21.22	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS08**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-008	Date Collected:	11.14.19 09.53	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	11.15.19 14.31	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	11.15.19 14.31	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	11.15.19 14.31	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.15.19 14.31	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	11.15.19 14.31	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	11.15.19 14.31	U	1
Total BTEX		<0.000994	0.000994	mg/kg	11.15.19 14.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	89	%	70-130	11.15.19 14.31	
4-Bromofluorobenzene	460-00-4	105	%	70-130	11.15.19 14.31	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS09**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-009	Date Collected:	11.14.19 09.36	Sample Depth:	2.0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**37.8**	9.94	mg/kg	11.15.19 12.09		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.15.19 21.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.15.19 21.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.15.19 21.43	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.15.19 21.43	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.15.19 21.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.15.19 21.43	
o-Terphenyl	84-15-1	104	%	70-135	11.15.19 21.43	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**FS09**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-009	Date Collected:	11.14.19 09.36	Sample Depth:	2.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.15.19 14.50	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.15.19 14.50	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.15.19 14.50	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.15.19 14.50	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.15.19 14.50	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.15.19 14.50	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.15.19 14.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.15.19 14.50	
4-Bromofluorobenzene	460-00-4	102	%	70-130	11.15.19 14.50	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**FS10**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-010	Date Collected:	11.14.19 10.13	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**153**	9.88	mg/kg	11.15.19 12.15		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.15.19 22.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.15.19 22.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.15.19 22.03	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.15.19 22.03	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.15.19 22.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.15.19 22.03	
o-Terphenyl	84-15-1	116	%	70-135	11.15.19 22.03	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**FS10**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-010	Date Collected:	11.14.19 10.13	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 15.10	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 15.10	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 15.10	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.15.19 15.10	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.15.19 15.10	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.15.19 15.10	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.15.19 15.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.15.19 15.10	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.15.19 15.10	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**FS11**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-011	Date Collected:	11.14.19 10.16	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**226**	9.90	mg/kg	11.15.19 12.33		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.15.19 22.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.15.19 22.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.15.19 22.43	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.15.19 22.43	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.15.19 22.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.15.19 22.43	
o-Terphenyl	84-15-1	112	%	70-135	11.15.19 22.43	

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Sample Id:	**FS11**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-011	Date Collected:	11.14.19 10.16	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	11.15.19 15.29	U	1
Toluene	108-88-3	<0.000996	0.000996	mg/kg	11.15.19 15.29	U	1
Ethylbenzene	100-41-4	<0.000996	0.000996	mg/kg	11.15.19 15.29	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.15.19 15.29	U	1
o-Xylene	95-47-6	<0.000996	0.000996	mg/kg	11.15.19 15.29	U	1
Total Xylenes	1330-20-7	<0.000996	0.000996	mg/kg	11.15.19 15.29	U	1
Total BTEX		<0.000996	0.000996	mg/kg	11.15.19 15.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.15.19 15.29	
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.15.19 15.29	

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LT Environmental, Inc., Arvada, CO

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Sample Id:	**FS12**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-012	Date Collected:	11.14.19 10.19	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**586**	49.5	mg/kg	11.15.19 12.39		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.15.19 23.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	**276**	50.3	mg/kg	11.15.19 23.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.15.19 23.04	U	1
Total GRO-DRO	PHC628	**276**	50.3	mg/kg	11.15.19 23.04		1
Total TPH	PHC635	**276**	50.3	mg/kg	11.15.19 23.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	11.15.19 23.04	
o-Terphenyl	84-15-1	100	%	70-135	11.15.19 23.04	

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Sample Id:	**FS12**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-012	Date Collected:	11.14.19 10.19	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 15.48	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 15.48	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 15.48	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.15.19 15.48	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.15.19 15.48	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.15.19 15.48	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.15.19 15.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	70-130	11.15.19 15.48	
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.15.19 15.48	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS13**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-013	Date Collected:	11.14.19 10.47	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**358**	49.9	mg/kg	11.15.19 12.45		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.15.19 23.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.15.19 23.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.15.19 23.24	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.15.19 23.24	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.15.19 23.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.15.19 23.24	
o-Terphenyl	84-15-1	106	%	70-135	11.15.19 23.24	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS13**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-013	Date Collected:	11.14.19 10.47	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000994	0.000994	mg/kg	11.15.19 16.07	U	1
Toluene	108-88-3	<0.000994	0.000994	mg/kg	11.15.19 16.07	U	1
Ethylbenzene	100-41-4	<0.000994	0.000994	mg/kg	11.15.19 16.07	U	1
m,p-Xylenes	179601-23-1	<0.00199	0.00199	mg/kg	11.15.19 16.07	U	1
o-Xylene	95-47-6	<0.000994	0.000994	mg/kg	11.15.19 16.07	U	1
Total Xylenes	1330-20-7	<0.000994	0.000994	mg/kg	11.15.19 16.07	U	1
Total BTEX		<0.000994	0.000994	mg/kg	11.15.19 16.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	119	%	70-130	11.15.19 16.07	
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.15.19 16.07	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS14**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-014	Date Collected:	11.14.19 10.50	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**409**	10.1	mg/kg	11.15.19 12.51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.15.19 23.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.15.19 23.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.15.19 23.44	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.15.19 23.44	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.15.19 23.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	11.15.19 23.44	
o-Terphenyl	84-15-1	105	%	70-135	11.15.19 23.44	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS14**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-014	Date Collected:	11.14.19 10.50	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 16.26	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 16.26	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 16.26	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.15.19 16.26	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.15.19 16.26	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.15.19 16.26	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.15.19 16.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.15.19 16.26	
1,4-Difluorobenzene	540-36-3	86	%	70-130	11.15.19 16.26	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS15**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-015	Date Collected:	11.14.19 10.54	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**632**	50.4	mg/kg	11.15.19 12.58		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.16.19 00.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	**78.2**	50.3	mg/kg	11.16.19 00.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.16.19 00.04	U	1
Total GRO-DRO	PHC628	**78.2**	50.3	mg/kg	11.16.19 00.04		1
Total TPH	PHC635	**78.2**	50.3	mg/kg	11.16.19 00.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	11.16.19 00.04	
o-Terphenyl	84-15-1	108	%	70-135	11.16.19 00.04	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS15**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-015	Date Collected:	11.14.19 10.54	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.15.19 16.45	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	11.15.19 16.45	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	11.15.19 16.45	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.15.19 16.45	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	11.15.19 16.45	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	11.15.19 16.45	U	1
Total BTEX		<0.000998	0.000998	mg/kg	11.15.19 16.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.15.19 16.45	
4-Bromofluorobenzene	460-00-4	109	%	70-130	11.15.19 16.45	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS16**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-016	Date Collected:	11.14.19 10.56	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**586**	50.2	mg/kg	11.15.19 13.04		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.16.19 00.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	**3170**	50.3	mg/kg	11.16.19 00.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.16.19 00.24	U	1
Total GRO-DRO	PHC628	**3170**	50.3	mg/kg	11.16.19 00.24		1
Total TPH	PHC635	**3170**	50.3	mg/kg	11.16.19 00.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	11.16.19 00.24	
o-Terphenyl	84-15-1	116	%	70-135	11.16.19 00.24	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS16**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-016	Date Collected:	11.14.19 10.56	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.15.19 17.05	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.15.19 17.05	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.15.19 17.05	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.15.19 17.05	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.15.19 17.05	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.15.19 17.05	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.15.19 17.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	11.15.19 17.05	
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.15.19 17.05	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS17**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-017	Date Collected:	11.14.19 11.18	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**551**	49.9	mg/kg	11.15.19 14.54		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.16.19 00.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.16.19 00.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.16.19 00.44	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.16.19 00.44	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.16.19 00.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	11.16.19 00.44	
o-Terphenyl	84-15-1	111	%	70-135	11.16.19 00.44	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS17**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-017	Date Collected:	11.14.19 11.18	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 19.11	Basis:	Wet Weight
Seq Number:	3107730				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.15.19 17.24	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.15.19 17.24	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.15.19 17.24	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.15.19 17.24	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.15.19 17.24	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.15.19 17.24	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.15.19 17.24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.15.19 17.24	
1,4-Difluorobenzene	540-36-3	97	%	70-130	11.15.19 17.24	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS18**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-018	Date Collected:	11.14.19 11.21	Sample Depth:	0.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**451**	9.98	mg/kg	11.15.19 15.00		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.16.19 01.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	**375**	50.1	mg/kg	11.16.19 01.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.16.19 01.04	U	1
Total GRO-DRO	PHC628	**375**	50.1	mg/kg	11.16.19 01.04		1
Total TPH	PHC635	**375**	50.1	mg/kg	11.16.19 01.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	11.16.19 01.04	
o-Terphenyl	84-15-1	109	%	70-135	11.16.19 01.04	

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Sample Id:	**FS18**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-018	Date Collected:	11.14.19 11.21	Sample Depth:	0.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 18.11	Basis:	Wet Weight
Seq Number:	3107600				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	11.15.19 21.09	U	1
Toluene	108-88-3	**0.00103**	0.000998	mg/kg	11.15.19 21.09		1
Ethylbenzene	100-41-4	**0.00288**	0.000998	mg/kg	11.15.19 21.09		1
m,p-Xylenes	179601-23-1	**0.0107**	0.00200	mg/kg	11.15.19 21.09		1
o-Xylene	95-47-6	**0.0108**	0.000998	mg/kg	11.15.19 21.09		1
Total Xylenes	1330-20-7	**0.0215**	0.000998	mg/kg	11.15.19 21.09		1
Total BTEX		**0.0254**	0.000998	mg/kg	11.15.19 21.09		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	130	%	70-130	11.15.19 21.09	
1,4-Difluorobenzene	540-36-3	92	%	70-130	11.15.19 21.09	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS19**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-019	Date Collected:	11.14.19 11.23	Sample Depth:	2.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**69.5**	9.96	mg/kg	11.15.19 15.07		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107718				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.16.19 01.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.16.19 01.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.16.19 01.25	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.16.19 01.25	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.16.19 01.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.16.19 01.25	
o-Terphenyl	84-15-1	112	%	70-135	11.16.19 01.25	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS19**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-019	Date Collected:	11.14.19 11.23	Sample Depth:	2.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 18.11	Basis:	Wet Weight
Seq Number:	3107600				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.15.19 21.30	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.15.19 21.30	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.15.19 21.30	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.15.19 21.30	U	1
o-Xylene	95-47-6	**0.00184**	0.00100	mg/kg	11.15.19 21.30		1
Total Xylenes	1330-20-7	**0.00184**	0.00100	mg/kg	11.15.19 21.30		1
Total BTEX		**0.00184**	0.00100	mg/kg	11.15.19 21.30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	129	%	70-130	11.15.19 21.30	
1,4-Difluorobenzene	540-36-3	94	%	70-130	11.15.19 21.30	

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LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS20**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-020	Date Collected:	11.14.19 11.25	Sample Depth:	2.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**49.1**	9.94	mg/kg	11.15.19 15.13		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.15.19 18.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	**237**	49.9	mg/kg	11.15.19 18.19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.15.19 18.19	U	1
Total GRO-DRO	PHC628	**237**	49.9	mg/kg	11.15.19 18.19		1
Total TPH	PHC635	**237**	49.9	mg/kg	11.15.19 18.19		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	11.15.19 18.19	
o-Terphenyl	84-15-1	114	%	70-135	11.15.19 18.19	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**FS20**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-020	Date Collected:	11.14.19 11.25	Sample Depth:	2.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 18.11	Basis:	Wet Weight
Seq Number:	3107600				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 11.15	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 11.15	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 11.15	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.15.19 11.15	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	11.15.19 11.15	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	11.15.19 11.15	U	1
Total BTEX		<0.00101	0.00101	mg/kg	11.15.19 11.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	128	%	70-130	11.15.19 11.15	
1,4-Difluorobenzene	540-36-3	96	%	70-130	11.15.19 11.15	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-021	Date Collected:	11.14.19 09.38	Sample Depth:	2.0 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**73.7**	10.0	mg/kg	11.15.19 15.32		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	11.15.19 19.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	11.15.19 19.20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	11.15.19 19.20	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	11.15.19 19.20	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	11.15.19 19.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	11.15.19 19.20	
o-Terphenyl	84-15-1	123	%	70-135	11.15.19 19.20	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**SW01**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-021	Date Collected:	11.14.19 09.38	Sample Depth:	2.0 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 18.11	Basis:	Wet Weight
Seq Number:	3107600				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 11.35	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 11.35	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 11.35	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	11.15.19 11.35	U	1
o-Xylene	95-47-6	**0.00132**	0.00101	mg/kg	11.15.19 11.35		1
Total Xylenes	1330-20-7	**0.00132**	0.00101	mg/kg	11.15.19 11.35		1
Total BTEX		**0.00132**	0.00101	mg/kg	11.15.19 11.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	70-130	11.15.19 11.35	
4-Bromofluorobenzene	460-00-4	118	%	70-130	11.15.19 11.35	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-022	Date Collected:	11.14.19 11.29	Sample Depth:	2.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**41.0**	9.98	mg/kg	11.15.19 15.38		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.15.19 19.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	**71.5**	50.2	mg/kg	11.15.19 19.41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.15.19 19.41	U	1
Total GRO-DRO	PHC628	**71.5**	50.2	mg/kg	11.15.19 19.41		1
Total TPH	PHC635	**71.5**	50.2	mg/kg	11.15.19 19.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	11.15.19 19.41	
o-Terphenyl	84-15-1	110	%	70-135	11.15.19 19.41	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**SW02**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-022	Date Collected:	11.14.19 11.29	Sample Depth:	2.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 18.11	Basis:	Wet Weight
Seq Number:	3107600				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	11.15.19 11.56	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	11.15.19 11.56	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	11.15.19 11.56	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	11.15.19 11.56	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	11.15.19 11.56	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	11.15.19 11.56	U	1
Total BTEX		<0.00100	0.00100	mg/kg	11.15.19 11.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.15.19 11.56	
4-Bromofluorobenzene	460-00-4	107	%	70-130	11.15.19 11.56	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-023	Date Collected:	11.14.19 11.31	Sample Depth:	2.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.15.19 08.11	Basis:	Wet Weight
Seq Number:	3107772				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**101**	10.1	mg/kg	11.15.19 15.45		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.15.19 17.00	Basis:	Wet Weight
Seq Number:	3107736				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.15.19 20.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.15.19 20.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.15.19 20.01	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.15.19 20.01	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.15.19 20.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	11.15.19 20.01	
o-Terphenyl	84-15-1	105	%	70-135	11.15.19 20.01	

Certificate of Analytical Results 643273

LT Environmental, Inc., Arvada, CO

Bubbles 22-15 Federal #003H

Sample Id:	**SW03**	Matrix:	Soil	Date Received:	11.14.19 16.42
Lab Sample Id:	643273-023	Date Collected:	11.14.19 11.31	Sample Depth:	2.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.14.19 18.11	Basis:	Wet Weight
Seq Number:	3107600				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	11.15.19 12.16	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	11.15.19 12.16	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	11.15.19 12.16	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	11.15.19 12.16	U	1
o-Xylene	95-47-6	**0.00157**	0.00101	mg/kg	11.15.19 12.16		1
Total Xylenes	1330-20-7	**0.00157**	0.00101	mg/kg	11.15.19 12.16		1
Total BTEX		**0.00157**	0.00101	mg/kg	11.15.19 12.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	11.15.19 12.16	
1,4-Difluorobenzene	540-36-3	93	%	70-130	11.15.19 12.16	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 643273

LT Environmental, Inc.

Bubbles 22-15 Federal #003H

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107636 — Matrix: Solid — Date Prep: 11.15.19
MB Sample Id: 7690444-1-BLK — LCS Sample Id: 7690444-1-BKS — LCSD Sample Id: 7690444-1-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	248	99	249	100	90-110	0	20	mg/kg	11.15.19 08:14	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107772 — Matrix: Solid — Date Prep: 11.15.19
MB Sample Id: 7690445-1-BLK — LCS Sample Id: 7690445-1-BKS — LCSD Sample Id: 7690445-1-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	246	98	90-110	0	20	mg/kg	11.15.19 11:28	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107636 — Matrix: Soil — Date Prep: 11.15.19
Parent Sample Id: 643198-028 — MS Sample Id: 643198-028 S — MSD Sample Id: 643198-028 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	681	199	860	90	868	94	90-110	1	20	mg/kg	11.15.19 08:32	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107636 — Matrix: Soil — Date Prep: 11.15.19
Parent Sample Id: 643207-005 — MS Sample Id: 643207-005 S — MSD Sample Id: 643207-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	275	199	477	102	478	102	90-110	0	20	mg/kg	11.15.19 09:54	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3107772 — Matrix: Soil — Date Prep: 11.15.19
Parent Sample Id: 643273-006 — MS Sample Id: 643273-006 S — MSD Sample Id: 643273-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	316	202	526	104	524	103	90-110	0	20	mg/kg	11.15.19 11:46	

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 643273

LT Environmental, Inc.

Bubbles 22-15 Federal #003H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3107772 Matrix: Soil Date Prep: 11.15.19
Parent Sample Id: 643273-016 MS Sample Id: 643273-016 S MSD Sample Id: 643273-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	586	201	772	93	751	83	90-110	3	20	mg/kg	11.15.19 14:41	X

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107718 Matrix: Solid Date Prep: 11.15.19
MB Sample Id: 7690491-1-BLK LCS Sample Id: 7690491-1-BKS LCSD Sample Id: 7690491-1-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	840	84	884	88	70-135	5	35	mg/kg	11.15.19 17:37	
Diesel Range Organics (DRO)	<50.0	1000	948	95	996	100	70-135	5	35	mg/kg	11.15.19 17:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		101		121		70-135	%	11.15.19 17:37
o-Terphenyl	98		101		107		70-135	%	11.15.19 17:37

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107736 Matrix: Solid Date Prep: 11.15.19
MB Sample Id: 7690492-1-BLK LCS Sample Id: 7690492-1-BKS LCSD Sample Id: 7690492-1-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	1030	103	985	99	70-135	4	35	mg/kg	11.15.19 17:37	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1000	100	70-135	5	35	mg/kg	11.15.19 17:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		123		116		70-135	%	11.15.19 17:37
o-Terphenyl	114		116		109		70-135	%	11.15.19 17:37

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107718 Matrix: Solid Date Prep: 11.15.19
MB Sample Id: 7690491-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.15.19 17:17	

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

QC Summary 643273

LT Environmental, Inc.

Bubbles 22-15 Federal #003H

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107736 Matrix: Solid Date Prep: 11.15.19
MB Sample Id: 7690492-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.15.19 17:17	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107718 Matrix: Soil Date Prep: 11.15.19
Parent Sample Id: 643273-001 MS Sample Id: 643273-001 S MSD Sample Id: 643273-001 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)	<50.0	1000	992	99	970	97	70-135	2	35	mg/kg	11.15.19 18:39	
Diesel Range Organics (DRO)	<50.0	1000	1140	114	1110	111	70-135	3	35	mg/kg	11.15.19 18:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	134		119		70-135	%	11.15.19 18:39
o-Terphenyl	120		119		70-135	%	11.15.19 18:39

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3107736 Matrix: Soil Date Prep: 11.15.19
Parent Sample Id: 643273-020 MS Sample Id: 643273-020 S MSD Sample Id: 643273-020 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)	<49.8	996	1160	116	1140	114	70-135	2	35	mg/kg	11.15.19 18:39	
Diesel Range Organics (DRO)	237	996	1110	88	1150	91	70-135	4	35	mg/kg	11.15.19 18:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		132		70-135	%	11.15.19 18:39
o-Terphenyl	130		128		70-135	%	11.15.19 18:39

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

QC Summary 643273

LT Environmental, Inc.

Bubbles 22-15 Federal #003H

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3107600 — Matrix: Solid — Date Prep: 11.14.19
MB Sample Id: 7690414-1-BLK — LCS Sample Id: 7690414-1-BKS — LCSD Sample Id: 7690414-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.120	120	0.118	118	70-130	2	35	mg/kg	11.15.19 01:15	
Toluene	<0.00100	0.100	0.119	119	0.116	116	70-130	3	35	mg/kg	11.15.19 01:15	
Ethylbenzene	<0.00100	0.100	0.121	121	0.117	117	71-129	3	35	mg/kg	11.15.19 01:15	
m,p-Xylenes	<0.00200	0.200	0.242	121	0.235	118	70-135	3	35	mg/kg	11.15.19 01:15	
o-Xylene	<0.00100	0.100	0.121	121	0.119	119	71-133	2	35	mg/kg	11.15.19 01:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		99		100		70-130	%	11.15.19 01:15
4-Bromofluorobenzene	122		120		130		70-130	%	11.15.19 01:15

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3107730 — Matrix: Solid — Date Prep: 11.14.19
MB Sample Id: 7690416-1-BLK — LCS Sample Id: 7690416-1-BKS — LCSD Sample Id: 7690416-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0885	89	0.0895	90	70-130	1	35	mg/kg	11.15.19 08:52	
Toluene	<0.00100	0.100	0.0878	88	0.0888	89	70-130	1	35	mg/kg	11.15.19 08:52	
Ethylbenzene	<0.00100	0.100	0.0866	87	0.0878	88	71-129	1	35	mg/kg	11.15.19 08:52	
m,p-Xylenes	<0.00200	0.200	0.183	92	0.186	93	70-135	2	35	mg/kg	11.15.19 08:52	
o-Xylene	<0.00100	0.100	0.0935	94	0.0949	95	71-133	1	35	mg/kg	11.15.19 08:52	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		103		103		70-130	%	11.15.19 08:52
4-Bromofluorobenzene	108		115		114		70-130	%	11.15.19 08:52

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3107600 — Matrix: Soil — Date Prep: 11.14.19
Parent Sample Id: 643198-033 — MS Sample Id: 643198-033 S — MSD Sample Id: 643198-033 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000992	0.0992	0.0801	81	0.0712	72	70-130	12	35	mg/kg	11.15.19 01:55	
Toluene	<0.000992	0.0992	0.0700	71	0.0875	88	70-130	22	35	mg/kg	11.15.19 01:55	
Ethylbenzene	<0.000992	0.0992	0.0774	78	0.0785	79	71-129	1	35	mg/kg	11.15.19 01:55	
m,p-Xylenes	<0.00198	0.198	0.166	84	0.147	74	70-135	12	35	mg/kg	11.15.19 01:55	
o-Xylene	<0.000992	0.0992	0.0998	101	0.0927	93	71-133	7	35	mg/kg	11.15.19 01:55	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		95		70-130	%	11.15.19 01:55
4-Bromofluorobenzene	122		122		70-130	%	11.15.19 01:55

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 643273

LT Environmental, Inc.

Bubbles 22-15 Federal #003H

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3107730 Matrix: Soil Date Prep: 11.14.19

Parent Sample Id: 643271-001 MS Sample Id: 643271-001 S MSD Sample Id: 643271-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.0798	79	0.0805	81	70-130	1	35	mg/kg	11.15.19 09:30	
Toluene	<0.00101	0.101	0.0790	78	0.0798	81	70-130	1	35	mg/kg	11.15.19 09:30	
Ethylbenzene	<0.00101	0.101	0.0775	77	0.0785	79	71-129	1	35	mg/kg	11.15.19 09:30	
m,p-Xylenes	<0.00202	0.202	0.164	81	0.165	83	70-135	1	35	mg/kg	11.15.19 09:30	
o-Xylene	<0.00101	0.101	0.0831	82	0.0843	85	71-133	1	35	mg/kg	11.15.19 09:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		105		70-130	%	11.15.19 09:30
4-Bromofluorobenzene	119		122		70-130	%	11.15.19 09:30

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: 643273

XENCO LABORATORIES

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 Page 1 of 3

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:	Bubbles 22-15 Federal #003H	Turn Around	
Project Number:	012919143	Routine ☐	
P.O. Number:	Eddy County	Rush: 3 day	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.4	Thermometer ID		
Received Intact:	(Yes) No	T-WM-007		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes (No) N/A	Total Containers:	23	

ANALYSIS REQUEST

Work Order Notes

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
FS01	S	11/14/19	8:42	.5'	1	x	x	x	Composite
FS02			8:46		1	x	x	x	
FS03			8:49		1	x	x	x	
FS04			8:52		1	x	x	x	
FS05			9:45		1	x	x	x	
FS06			9:47		1	x	x	x	
FS07			9:50		1	x	x	x	
FS08			9:53		1	x	x	x	
FS09			9:36	2.0'	1	x	x	x	
FS10			10:13	.5'	1	x	x	x	

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
		11/14 19 16:42	4		
			6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 443273

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

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:	Bubbles 22-15 Federal #003H	Turn Around	
Project Number:	12919143	Routine ☐	
P.O. Number:	Eddy County	Rush: 3 day	
Sampler's Name:	William Mather	Due Date:	

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

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)
FS11	S	11/14/19	10:16	.5'	1	x	x	x
FS12			10:19		1	x	x	x
FS13			10:47		1	x	x	x
FS14			10:50		1	x	x	x
FS15			10:54		1	x	x	x
FS16			10:56		1	x	x	x
FS17			11:18		1	x	x	x
FS18			11:21		1	x	x	x
FS19			11:23	2.5'	1	x	x	x
FS20			11:25	2.5'	1	x	x	x

Work Order Notes

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

Sample Comments

COMPOSITE

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11/14/19 10:42	2		
			4		
			6		

Chain of Custody

Work Order No: E043273

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

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 ☐ RP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Bubbles 22-15 Federal #003H	Turn Around	
Project Number:	12919143	Routine ☐	
P.O. Number:	Eddy County	Rush: 3day	
Sampler's Name:	William Mather	Due Date:	

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Work Order Notes
SW01	S	11/14/19	9:38	2.0'	1	x	x	x	TAT starts the day recevied by the lab, if received by 4:30pm
SW02	↓	↓	11:29	2.6'	1	x	x	x	Sample Comments
SW03	↓	↓	11:31	2.5'	1	x	x	x	composite ↓
					1	x	x	x	
					1	x	x	x	
					1	x	x	x	
					1	x	x	x	
					1	x	x	x	
					1	x	x	x	
					1	x	x	x	

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
		11/14/19 16:42	2		
			4		
			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/14/2019 04:42:00 PM

Work Order #: 643273

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)?	.6
#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: 11/14/2019

Checklist reviewed by: Jessica Kramer Date: 11/15/2019

Analytical Report 644424

for

LT Environmental, Inc.

Project Manager: Dan Moir

Bubbles 22 15 Federal #003H

012919143

26-NOV-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)

26-NOV-19

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

Reference: XENCO Report No(s): **644424**
Bubbles 22 15 Federal #003H
Project Address: Eddy County

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) 644424. 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. 644424 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 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01A	S	11-25-19 10:29	1 ft	644424-001
FS02A	S	11-25-19 10:32	1 ft	644424-002
FS03A	S	11-25-19 10:34	1 ft	644424-003
FS04A	S	11-25-19 10:37	1 ft	644424-004
FS07A	S	11-25-19 11:14	1 ft	644424-005
FS12A	S	11-25-19 11:17	1.5 ft	644424-006
FS15A	S	11-25-19 11:25	1.5 ft	644424-007
FS16A	S	11-25-19 11:19	1.5 ft	644424-008
FS18A	S	11-25-19 12:45	1.5 ft	644424-009
FS20A	S	11-25-19 11:22	1.5 ft	644424-010
FS18B	S	11-25-19 12:51	2 ft	Not Analyzed

CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Bubbles 22 15 Federal #003H

Project ID: *012919143*
Work Order Number(s): *644424*

Report Date: *26-NOV-19*
Date Received: *11/25/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3108745 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Lab Sample ID 644389-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Benzene recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.
The Laboratory Control Sample for Benzene 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.

Certificate of Analysis Summary 644424

LT Environmental, Inc., Arvada, CO

Project Name: Bubbles 22 15 Federal #003H

Project Id: 012919143
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Mon Nov-25-19 02:55 pm
Report Date: 26-NOV-19
Project Manager: Jessica Kramer

Analysis Requested		644424-001		644424-002		644424-003		644424-004		644424-005		644424-006	
	Field Id:	FS01A		FS02A		FS03A		FS04A		FS07A		FS12A	
	Depth:	1- ft		1- ft		1- ft		1- ft		1- ft		1.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-25-19 10:29		Nov-25-19 10:32		Nov-25-19 10:34		Nov-25-19 10:37		Nov-25-19 11:14		Nov-25-19 11:17	
BTEX by EPA 8021B	*Extracted:*	Nov-25-19 17:11		Nov-25-19 17:11		Nov-25-19 17:11		Nov-25-19 17:11		Nov-25-19 17:11		Nov-25-19 17:11	
	Analyzed:	Nov-26-19 11:16		Nov-26-19 06:03		Nov-26-19 06:22		Nov-26-19 06:41		Nov-26-19 07:01		Nov-26-19 07:20	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Toluene		<0.00201	0.00201	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Ethylbenzene		<0.00201	0.00201	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
m,p-Xylenes		<0.00402	0.00402	<0.00403	0.00403	<0.00397	0.00397	<0.00399	0.00399	<0.00396	0.00396	<0.00395	0.00395
o-Xylene		<0.00201	0.00201	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Total Xylenes		<0.00201	0.00201	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Total BTEX		<0.00201	0.00201	<0.00202	0.00202	<0.00198	0.00198	<0.00200	0.00200	<0.00198	0.00198	<0.00198	0.00198
Chloride by EPA 300	*Extracted:*	Nov-25-19 18:11		Nov-25-19 18:11		Nov-25-19 18:11		Nov-25-19 18:11		Nov-25-19 18:11		Nov-25-19 18:11	
	Analyzed:	Nov-25-19 21:07		Nov-25-19 21:13		Nov-25-19 21:20		Nov-25-19 21:26		Nov-25-19 21:32		Nov-25-19 21:51	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		275	10.1	295	10.0	327	9.98	503	49.7	287	10.1	46.7	9.96
TPH by SW8015 Mod	*Extracted:*	Nov-25-19 17:00		Nov-25-19 17:00		Nov-25-19 17:00		Nov-25-19 17:00		Nov-25-19 17:00		Nov-25-19 17:00	
	Analyzed:	Nov-26-19 05:13		Nov-26-19 05:32		Nov-26-19 05:32		Nov-26-19 05:52		Nov-26-19 06:12		Nov-26-19 06:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.3	50.3	<49.9	49.9
Diesel Range Organics (DRO)		<50.0	50.0	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.3	50.3	<49.9	49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.3	50.3	<49.9	49.9
Total GRO-DRO		<50.0	50.0	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.3	50.3	<49.9	49.9
Total TPH		<50.0	50.0	<50.3	50.3	<50.1	50.1	<50.1	50.1	<50.3	50.3	<49.9	49.9

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 644424

LT Environmental, Inc., Arvada, CO

Project Name: Bubbles 22 15 Federal #003H

Project Id: 012919143
Contact: Dan Moir
Project Location: Eddy County

Date Received in Lab: Mon Nov-25-19 02:55 pm
Report Date: 26-NOV-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	644424-007		644424-008		644424-009		644424-010					
	Field Id:	FS15A		FS16A		FS18A		FS20A					
	Depth:	1.5- ft		1.5- ft		1.5- ft		1.5- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Nov-25-19 11:25		Nov-25-19 11:19		Nov-25-19 12:45		Nov-25-19 11:22					
BTEX by EPA 8021B	***Extracted:***	Nov-25-19 17:11		Nov-25-19 17:11		Nov-25-19 17:11		Nov-25-19 17:11					
	Analyzed:	Nov-26-19 07:39		Nov-26-19 07:58		Nov-26-19 08:17		Nov-26-19 09:21					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202				
Toluene		<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202				
Ethylbenzene		<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202				
m,p-Xylenes		<0.00399	0.00399	<0.00403	0.00403	<0.00401	0.00401	<0.00403	0.00403				
o-Xylene		<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202				
Total Xylenes		<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202				
Total BTEX		<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202				
Chloride by EPA 300	***Extracted:***	Nov-25-19 18:11		Nov-25-19 18:11		Nov-25-19 18:11		Nov-25-19 18:11					
	Analyzed:	Nov-25-19 21:58		Nov-25-19 22:04		Nov-25-19 22:10		Nov-25-19 22:17					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		99.6	9.98	65.1	9.92	230	9.90	52.8	9.98				
TPH by SW8015 Mod	***Extracted:***	Nov-25-19 17:00		Nov-25-19 17:00		Nov-25-19 17:00		Nov-25-19 17:00					
	Analyzed:	Nov-26-19 06:32		Nov-26-19 06:32		Nov-26-19 06:52		Nov-26-19 06:52					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.3	50.3	<50.3	50.3	<50.1	50.1	<50.2	50.2				
Diesel Range Organics (DRO)		<50.3	50.3	<50.3	50.3	54.8	50.1	<50.2	50.2				
Motor Oil Range Hydrocarbons (MRO)		<50.3	50.3	<50.3	50.3	<50.1	50.1	<50.2	50.2				
Total GRO-DRO		<50.3	50.3	<50.3	50.3	54.8	50.1	<50.2	50.2				
Total TPH		<50.3	50.3	<50.3	50.3	54.8	50.1	<50.2	50.2				

Jessica Kramer
Project Assistant

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS01A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-001	Date Collected:	11.25.19 10.29	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 18.11	Basis:	Wet Weight
Seq Number:	3108699				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**275**	10.1	mg/kg	11.25.19 21.07		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.25.19 17.00	Basis:	Wet Weight
Seq Number:	3108738				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.26.19 05.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.26.19 05.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.26.19 05.13	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	11.26.19 05.13	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.26.19 05.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	11.26.19 05.13	
o-Terphenyl	84-15-1	113	%	70-135	11.26.19 05.13	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS01A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-001	Date Collected:	11.25.19 10.29	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 17.11	Basis:	Wet Weight
Seq Number:	3108745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.26.19 11.16	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	11.26.19 11.16	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	11.26.19 11.16	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	11.26.19 11.16	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	11.26.19 11.16	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	11.26.19 11.16	U	1
Total BTEX		<0.00201	0.00201	mg/kg	11.26.19 11.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	11.26.19 11.16	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.26.19 11.16	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS02A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-002	Date Collected:	11.25.19 10.32	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 18.11	Basis:	Wet Weight
Seq Number:	3108699				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**295**	10.0	mg/kg	11.25.19 21.13		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.25.19 17.00	Basis:	Wet Weight
Seq Number:	3108738				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.26.19 05.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.26.19 05.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.26.19 05.32	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.26.19 05.32	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.26.19 05.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.26.19 05.32	
o-Terphenyl	84-15-1	119	%	70-135	11.26.19 05.32	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS02A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-002	Date Collected:	11.25.19 10.32	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 17.11	Basis:	Wet Weight
Seq Number:	3108745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.26.19 06.03	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.26.19 06.03	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.26.19 06.03	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.26.19 06.03	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.26.19 06.03	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.26.19 06.03	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.26.19 06.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	70-130	11.26.19 06.03	
1,4-Difluorobenzene	540-36-3	84	%	70-130	11.26.19 06.03	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS03A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-003	Date Collected:	11.25.19 10.34	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 18.11	Basis:	Wet Weight
Seq Number:	3108699				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**327**	9.98	mg/kg	11.25.19 21.20		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.25.19 17.00	Basis:	Wet Weight
Seq Number:	3108738				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.26.19 05.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.26.19 05.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.26.19 05.32	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.26.19 05.32	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.26.19 05.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.26.19 05.32	
o-Terphenyl	84-15-1	118	%	70-135	11.26.19 05.32	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS03A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-003	Date Collected:	11.25.19 10.34	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 17.11	Basis:	Wet Weight
Seq Number:	3108745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.26.19 06.22	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.26.19 06.22	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.26.19 06.22	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	11.26.19 06.22	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.26.19 06.22	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.26.19 06.22	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.26.19 06.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.26.19 06.22	
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.26.19 06.22	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS04A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-004	Date Collected:	11.25.19 10.37	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 18.11	Basis:	Wet Weight
Seq Number:	3108699				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**503**	49.7	mg/kg	11.25.19 21.26		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.25.19 17.00	Basis:	Wet Weight
Seq Number:	3108738				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.26.19 05.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	11.26.19 05.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.26.19 05.52	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	11.26.19 05.52	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	11.26.19 05.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.26.19 05.52	
o-Terphenyl	84-15-1	122	%	70-135	11.26.19 05.52	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS04A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-004	Date Collected:	11.25.19 10.37	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 17.11	Basis:	Wet Weight
Seq Number:	3108745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.26.19 06.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.26.19 06.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.26.19 06.41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.26.19 06.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.26.19 06.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.26.19 06.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.26.19 06.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	11.26.19 06.41	
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.26.19 06.41	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS07A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-005	Date Collected:	11.25.19 11.14	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 18.11	Basis:	Wet Weight
Seq Number:	3108699				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**287**	10.1	mg/kg	11.25.19 21.32		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.25.19 17.00	Basis:	Wet Weight
Seq Number:	3108738				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.26.19 06.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.26.19 06.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.26.19 06.12	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.26.19 06.12	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.26.19 06.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	11.26.19 06.12	
o-Terphenyl	84-15-1	126	%	70-135	11.26.19 06.12	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS07A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-005	Date Collected:	11.25.19 11.14	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 17.11	Basis:	Wet Weight
Seq Number:	3108745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.26.19 07.01	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.26.19 07.01	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.26.19 07.01	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	11.26.19 07.01	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.26.19 07.01	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.26.19 07.01	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.26.19 07.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	92	%	70-130	11.26.19 07.01	
4-Bromofluorobenzene	460-00-4	106	%	70-130	11.26.19 07.01	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS12A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-006	Date Collected:	11.25.19 11.17	Sample Depth:	1.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 18.11	Basis:	Wet Weight
Seq Number:	3108699				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**46.7**	9.96	mg/kg	11.25.19 21.51		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.25.19 17.00	Basis:	Wet Weight
Seq Number:	3108738				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.26.19 06.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	11.26.19 06.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.26.19 06.12	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	11.26.19 06.12	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	11.26.19 06.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	11.26.19 06.12	
o-Terphenyl	84-15-1	113	%	70-135	11.26.19 06.12	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS12A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-006	Date Collected:	11.25.19 11.17	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 17.11	Basis:	Wet Weight
Seq Number:	3108745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	11.26.19 07.20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	11.26.19 07.20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	11.26.19 07.20	U	1
m,p-Xylenes	179601-23-1	<0.00395	0.00395	mg/kg	11.26.19 07.20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	11.26.19 07.20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	11.26.19 07.20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	11.26.19 07.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	124	%	70-130	11.26.19 07.20	
1,4-Difluorobenzene	540-36-3	98	%	70-130	11.26.19 07.20	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS15A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-007	Date Collected:	11.25.19 11.25	Sample Depth:	1.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 18.11	Basis:	Wet Weight
Seq Number:	3108699				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**99.6**	9.98	mg/kg	11.25.19 21.58		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.25.19 17.00	Basis:	Wet Weight
Seq Number:	3108738				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.26.19 06.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.26.19 06.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.26.19 06.32	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.26.19 06.32	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.26.19 06.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	11.26.19 06.32	
o-Terphenyl	84-15-1	128	%	70-135	11.26.19 06.32	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS15A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-007	Date Collected:	11.25.19 11.25	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 17.11	Basis:	Wet Weight
Seq Number:	3108745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.26.19 07.39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.26.19 07.39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.26.19 07.39	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	11.26.19 07.39	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.26.19 07.39	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.26.19 07.39	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.26.19 07.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.26.19 07.39	
4-Bromofluorobenzene	460-00-4	110	%	70-130	11.26.19 07.39	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS16A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-008	Date Collected:	11.25.19 11.19	Sample Depth:	1.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 18.11	Basis:	Wet Weight
Seq Number:	3108699				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**65.1**	9.92	mg/kg	11.25.19 22.04		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.25.19 17.00	Basis:	Wet Weight
Seq Number:	3108738				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	11.26.19 06.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	11.26.19 06.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	11.26.19 06.32	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	11.26.19 06.32	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	11.26.19 06.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	11.26.19 06.32	
o-Terphenyl	84-15-1	117	%	70-135	11.26.19 06.32	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS16A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-008	Date Collected:	11.25.19 11.19	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 17.11	Basis:	Wet Weight
Seq Number:	3108745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.26.19 07.58	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.26.19 07.58	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.26.19 07.58	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.26.19 07.58	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.26.19 07.58	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.26.19 07.58	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.26.19 07.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	84	%	70-130	11.26.19 07.58	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.26.19 07.58	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS18A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-009	Date Collected:	11.25.19 12.45	Sample Depth:	1.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 18.11	Basis:	Wet Weight
Seq Number:	3108699				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**230**	9.90	mg/kg	11.25.19 22.10		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.25.19 17.00	Basis:	Wet Weight
Seq Number:	3108738				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	11.26.19 06.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	**54.8**	50.1	mg/kg	11.26.19 06.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	11.26.19 06.52	U	1
Total GRO-DRO	PHC628	**54.8**	50.1	mg/kg	11.26.19 06.52		1
Total TPH	PHC635	**54.8**	50.1	mg/kg	11.26.19 06.52		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.26.19 06.52	
o-Terphenyl	84-15-1	124	%	70-135	11.26.19 06.52	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS18A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-009	Date Collected:	11.25.19 12.45	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 17.11	Basis:	Wet Weight
Seq Number:	3108745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	11.26.19 08.17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	11.26.19 08.17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	11.26.19 08.17	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	11.26.19 08.17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	11.26.19 08.17	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	11.26.19 08.17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	11.26.19 08.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	70-130	11.26.19 08.17	
4-Bromofluorobenzene	460-00-4	108	%	70-130	11.26.19 08.17	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS20A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-010	Date Collected:	11.25.19 11.22	Sample Depth:	1.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 18.11	Basis:	Wet Weight
Seq Number:	3108699				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**52.8**	9.98	mg/kg	11.25.19 22.17		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	11.25.19 17.00	Basis:	Wet Weight
Seq Number:	3108738				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	11.26.19 06.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	11.26.19 06.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	11.26.19 06.52	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	11.26.19 06.52	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	11.26.19 06.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	11.26.19 06.52	
o-Terphenyl	84-15-1	118	%	70-135	11.26.19 06.52	

Certificate of Analytical Results 644424

LT Environmental, Inc., Arvada, CO

Bubbles 22 15 Federal #003H

Sample Id:	**FS20A**	Matrix:	Soil	Date Received:	11.25.19 14.55
Lab Sample Id:	644424-010	Date Collected:	11.25.19 11.22	Sample Depth:	1.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	11.25.19 17.11	Basis:	Wet Weight
Seq Number:	3108745				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	11.26.19 09.21	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	11.26.19 09.21	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	11.26.19 09.21	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	11.26.19 09.21	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	11.26.19 09.21	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	11.26.19 09.21	U	1
Total BTEX		<0.00202	0.00202	mg/kg	11.26.19 09.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	11.26.19 09.21	
4-Bromofluorobenzene	460-00-4	107	%	70-130	11.26.19 09.21	

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 644424

LT Environmental, Inc.

Bubbles 22 15 Federal #003H

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3108699 Matrix: Solid Date Prep: 11.25.19
MB Sample Id: 7691178-1-BLK LCS Sample Id: 7691178-1-BKS LCSD Sample Id: 7691178-1-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	259	104	257	103	90-110	1	20	mg/kg	11.25.19 17:00	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3108699 Matrix: Soil Date Prep: 11.25.19
Parent Sample Id: 644389-021 MS Sample Id: 644389-021 S MSD Sample Id: 644389-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	40.4	202	254	106	251	105	90-110	1	20	mg/kg	11.25.19 20:48	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3108738 Matrix: Solid Date Prep: 11.25.19
MB Sample Id: 7691221-1-BLK LCS Sample Id: 7691221-1-BKS LCSD Sample Id: 7691221-1-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	876	88	967	97	70-135	10	35	mg/kg	11.26.19 03:34	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1110	111	70-135	4	35	mg/kg	11.26.19 03:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		131		125		70-135	%	11.26.19 03:34
o-Terphenyl	108		120		120		70-135	%	11.26.19 03:34

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3108738 Matrix: Solid Date Prep: 11.25.19
MB Sample Id: 7691221-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.26.19 03:34	

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 644424

LT Environmental, Inc.

Bubbles 22 15 Federal #003H

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3108738 — Matrix: Soil — Date Prep: 11.25.19
Parent Sample Id: 644389-020 — MS Sample Id: 644389-020 S — MSD Sample Id: 644389-020 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)	<50.2	1000	1000	100	853	84	70-135	16	35	mg/kg	11.26.19 04:13	
Diesel Range Organics (DRO)	<50.2	1000	1150	115	1040	103	70-135	10	35	mg/kg	11.26.19 04:13	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		127		70-135	%	11.26.19 04:13
o-Terphenyl	127		118		70-135	%	11.26.19 04:13

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3108745 — Matrix: Solid — Date Prep: 11.25.19
MB Sample Id: 7691182-1-BLK — LCS Sample Id: 7691182-1-BKS — LCSD Sample Id: 7691182-1-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	0.0969	97	0.0948	95	70-130	2	35	mg/kg	11.26.19 03:43	
Toluene	<0.00200	0.100	0.0974	97	0.0972	97	70-130	0	35	mg/kg	11.26.19 03:43	
Ethylbenzene	<0.00200	0.100	0.0957	96	0.0962	96	71-129	1	35	mg/kg	11.26.19 03:43	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.205	103	70-135	1	35	mg/kg	11.26.19 03:43	
o-Xylene	<0.00200	0.100	0.104	104	0.106	106	71-133	2	35	mg/kg	11.26.19 03:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		104		102		70-130	%	11.26.19 03:43
4-Bromofluorobenzene	112		118		121		70-130	%	11.26.19 03:43

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3108745 — Matrix: Soil — Date Prep: 11.25.19
Parent Sample Id: 644389-001 — MS Sample Id: 644389-001 S — MSD Sample Id: 644389-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.0686	69	0.0805	81	70-130	16	35	mg/kg	11.26.19 11:35	X
Toluene	<0.00198	0.0992	0.0795	80	0.0803	80	70-130	1	35	mg/kg	11.26.19 11:35	
Ethylbenzene	<0.00198	0.0992	0.0795	80	0.0771	77	71-129	3	35	mg/kg	11.26.19 11:35	
m,p-Xylenes	<0.000992	0.198	0.170	86	0.163	82	70-135	4	35	mg/kg	11.26.19 11:35	
o-Xylene	<0.00198	0.0992	0.0868	88	0.0833	83	71-133	4	35	mg/kg	11.26.19 11:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		105		70-130	%	11.26.19 11:35
4-Bromofluorobenzene	112		122		70-130	%	11.26.19 11:35

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: 0444424

XENCO LABORATORIES

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)

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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:	Bubbles 22 15 Federal #003H	Turn Around	
Project Number:	12919143	Routine ☐	
P.O. Number:	Eddy County	Rush: 3day	
Sampler's Name:	William Mather	Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	1	Thermometer ID	
Received Intact:	(Yes) No	T-NM-007	
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Total Containers:	11

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Work Order Notes / Sample Comments
FS01A	s	11/25/2019	10:29	1'	1	x	x	x	Composite
FS02A	s	11/25/2019	10:32	1'	1	x	x	x	Composite
FS03A	s	11/25/2019	10:34	1'	1	x	x	x	Composite
FS04A	s	11/25/2019	10:37	1'	1	x	x	x	Composite
FS07A	s	11/25/2019	11:14	1'	1	x	x	x	Composite
FS12A	s	11/25/2019	11:17	1.5'	1	x	x	x	Composite
FS15A	s	11/25/2019	11:25	1.5'	1	x	x	x	Composite
FS16A	s	11/25/2019	11:19	1.5'	1	x	x	x	Composite
FS18A	s	11/25/2019	12:45	1.5'	1	x	x	x	Composite
FS20A	s	11/25/2019	11:22	1.5'	1	x	x	x	Composite

ANALYSIS REQUEST

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			11/25/19 14:55	2		
3				4		
5				6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 11/25/2019 02:55:00 PM

Work Order #: 644424

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: 11/25/2019

Checklist reviewed by: Jessica Kramer Date: 11/26/2019