

June 14, 2019

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

**RE: Closure Request
Nash Unit 003H
Remediation Permit Number 2RP-5339
Eddy County, New Mexico**

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of XTO Energy, Inc. (XTO), presents the following report detailing the excavation of impacted soil and soil sampling activities at the Nash Unit 003H (Site) in Unit K, Section 12, Township 23 South, Range 29 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil after the release of hydrochloric acid fluid at the Site.

On March 19, 2019, a contract crew was transferring hydrochloric acid fluid from one tank to another. The valves failed and approximately 20.94 barrels (bbls) of hydrochloric acid was released within the temporary lined containment. Soda ash was applied to the fluid to neutralize the acid and the valves were repaired. A vacuum truck was dispatched to the Site and recovered approximately 20 bbls of fluid from within the lined containment. The liner was inspected for integrity and determined to be inadequate. Less than 1 bbl of fluid is estimated to have breached the liner. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 on April 2, 2019, and was assigned Remediation Permit (RP) Number 2RP-5339 (Attachment 1). Based on the excavation activities and results of the soil sampling events, XTO is submitting this closure report and requesting no further action for this release event.

BACKGROUND

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 less than 50 feet below ground surface (bgs) based on the nearest water well data. The nearest permitted water well is United States Geological Survey (USGS) well 321946103543701 located approximately 1.9 miles northeast of the Site, with a depth to groundwater of 6.45 feet bgs and a total depth of 30 feet bgs. The water well is 8 feet higher in elevation than the Site. The nearest continuously flowing



water or significant watercourse to the Site is a saline lake located approximately 150 feet northwest of the Site. The Site is located less than 200 feet from a lakebed, less than 300 feet from a wetland, and within a 100-year floodplain. The Site is located greater than 300 feet from an occupied residence, school, hospital, institution, or church. The Site is located greater than 1,000 feet to a freshwater well or spring and is not overlying a subsurface mine. The Site is in a high potential karst area. Based on these criteria, the following NMOCD Table 1 closure criteria were applied: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 100 mg/kg total petroleum hydrocarbons (TPH); and 600 mg/kg chloride.

PRELIMINARY SOIL SAMPLING ACTIVITIES

On April 2, 2019, upon removal of the temporary liner and containment, LTE personnel inspected the Site to evaluate the release extent. Surface staining was observed in the release area on the well pad. The release extent was mapped using a handheld Global Positioning System (GPS) unit and is depicted on Figure 2. LTE personnel collected four preliminary soil samples (SS01 through SS04) within the release area from a depth of 0.5 feet bgs to assess the lateral extent of soil impacts. LTE personnel collected two background soil samples (Background 1 and Background 2) from a depth of 0.5 bgs to determine the naturally occurring chloride concentration in the soil due to the proximity of the Site to a saline lake. The soil samples were screened for volatile aromatic hydrocarbons and chlorides using a photo-ionization detector (PID) and Hach® chloride QuanTab® test strips. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler, method of analysis, and immediately placed on ice. The soil samples were shipped at 4 degrees Celsius (°C) under strict chain-of-custody procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX by United States Environmental Protection Agency (USEPA) Method 8021B, TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) by USEPA Method 8015M/D, and chloride by USEPA Method 300.0.

Laboratory analytical results indicated that BTEX and TPH concentrations were compliant with the NMOCD Table 1 closure criteria in preliminary soil samples SS01 through SS04. Laboratory analytical results indicated that chloride concentrations exceeded the NMOCD Table 1 closure criteria in preliminary soil samples SS01 through SS04, at concentrations ranging from 1,300 mg/kg to 6,080 mg/kg. Laboratory analytical results for background soil samples Background 1 and Background 2, indicated naturally occurring chloride concentrations of 8,990 mg/kg and 11,500 mg/kg, respectively. The chloride concentrations in preliminary soil samples SS01 through SS04 were less than the naturally occurring chloride concentrations established in the background soil samples.

Based on visible surface staining and chloride concentrations exceeding the NMOCD Table 1 closure criteria, potholing was scheduled to delineate the lateral and vertical extent of impacted





soil. Laboratory analytical results are presented on Figure 2 and summarized in Table 1, and the laboratory analytical report is included in Attachment 2.

DELINEATION SOIL SAMPLING ACTIVITIES

On May 29, 2019, LTE personnel returned to the Site to oversee potholing activities to delineate the lateral and vertical extent of impacted soil. Potholes PH01 through PH04 were advanced around the release extent via backhoe to a depth of 3 feet bgs. Soil was field screened in the potholes using a PID and Hach® chloride QuanTab® test strips. Three delineation soil sample were collected for laboratory analysis from each pothole PH01 through PH04, from depths of 1 foot bgs, 2 feet bgs, and 3 feet bgs. The delineation soil samples were collected, handled and analyzed as described above and submitted to Xenco in Midland, Texas. The delineation soil sample locations and depths are presented on Figure 3 and soil sample logs are included as Attachment 3.

Laboratory analytical results indicated that BTEX and TPH concentrations were compliant with the NMOCD Table 1 closure criteria in delineation soil samples PH01, PH01A, PH01B, PH02A, PH02B, PH03, PH03A, PH03B, PH04, PH04A, and PH04B. TPH concentrations exceeded the NMOCD Table 1 closure criteria at a concentration of 284 mg/kg in delineation soil sample PH02, collected at 1 foot bgs. Laboratory analytical results indicated that chloride concentrations exceeded the NMOCD Table 1 closure criteria in all delineation soil samples; however, chloride concentrations were less than the naturally occurring chloride concentrations established in the background soil samples. Laboratory analytical results are presented on Figure 3 and summarized in Table 1 and the laboratory analytical report is included in Attachment 2.

EXCAVATION ACTIVITIES

During May 2019, LTE personnel were at the Site to oversee excavation activities as indicated by potholing activities, laboratory analytical results, and the documented release area. To delineate hydrocarbon and chloride impacts to soil and direct excavation activities, LTE screened soil using a PID and Hach® chloride QuanTab® test strips. Impacted soil was excavated from the release area to a depth of 2 feet bgs. Following removal of impacted soil, LTE collected 5-point composite soil samples from the sidewalls and floor of the excavation. The 5-point composite soil samples were collected by depositing 5 aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS08 were collected from the floor of the excavation from a depth of 2 feet bgs. Composite soil sample SW01 was collected from the sidewalls of the excavation from a depth of 0 to 2 feet bgs to represent the entire perimeter of the excavation. Although the soil sample location is shown on Figure 2 on the west side of the excavation, the sample is comprised of aliquots of soil collected equidistant around the perimeter. The excavation soil sample locations and depths are presented on Figure 4. The soil samples were collected, handled, and analyzed as described above and submitted to Xenco in Midland, Texas.





The excavation measured approximately 2,980 square feet in area with a depth of 2 feet bgs. The horizontal extent of the excavation is illustrated on Figure 4. Approximately 220 cubic yards of impacted soil were removed from the excavation via backhoe. The impacted soil will be transported and properly disposed of at the Lea Land landfill facility located in Hobbs, New Mexico.

ANALYTICAL RESULTS

Laboratory analytical results indicated that preliminary soil samples SS01 through SS04 and delineation soil samples collected from potholes PH01 through PH04 exceeded the NMOCD Table 1 closure criteria for chloride; however, the chloride concentrations were less than the naturally occurring background chloride concentration of 8,990 mg/kg to 11,500 mg/kg at the Site. Impacted soil was excavated from the release area. Laboratory analytical results for excavation soil samples FS01 through FS08 and SW01, collected from the final excavation extent, indicated that BTEX and TPH concentrations were compliant with the NMOCD Table 1 closure criteria, and chloride concentrations were less than the naturally occurring background chloride concentration at the Site.

Laboratory analytical results indicated that the TPH concentration in delineation soil sample PH02, collected at 1 foot bgs, exceeded the NMOCD Table 1 closure criteria at a concentration of 284 mg/kg. This represented a slightly stained area potentially representing a historical minor release. LTE scraped the soil down to one foot. Subsequent delineation sample PH02A, collected at 2 feet bgs, was compliant with the NMOCD Table 1 closure criteria for TPH. No additional excavation was warranted in this area; the TPH exceedance at 1 foot bgs was minimal, the TPH impacts were delineated vertically by soil sample PH02A, TPH did not exceed NMOCD Table 1 closure criteria in any other samples, and visible soil staining was limited to a small area at PH02.

Laboratory analytical results are presented on Figure 2 through Figure 4 and summarized in Table 1 and Table 2, and the complete laboratory analytical reports are included as Attachment 2.

CONCLUSIONS

The Site is located within 150 feet of a salt lake; therefore, background soil samples were collected to establish naturally occurring chloride concentrations at the Site. Laboratory analytical results for background soil samples Background 1 and Background 2, indicated chloride concentrations of 8,990 mg/kg and 11,500 mg/kg, respectively.

Impacted soil was excavated from the release area and laboratory analytical results for the confirmation soil samples collected from the final excavation extent indicated that BTEX and TPH concentrations were compliant with the NMOCD Table 1 closure criteria and chloride concentrations were less than the naturally occurring background chloride concentration at the Site.





Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. XTO requests no further action for release number 2RP-5339. Upon approval of this closure request, XTO will backfill the excavation with material purchased locally and recontour the Site to match pre-existing site conditions. An updated NMOCD Form C-141 is included as Attachment 1. A photographic log of the Site is included as Attachment 4.

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

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads "Ashley L. Ager". The signature is fluid and cursive, with the first letters of each word being capitalized.

Ashley L. Ager, P.G.
Senior Geologist

cc: Kyle Littrell, XTO
Jim Amos, U.S. Bureau of Land Management
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD

Attachments:

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 Initial/Final NMOCD Form C-141 (2RP-5339)
Attachment 2 Laboratory Analytical Reports
Attachment 3 Soil Sample Logs
Attachment 4 Photographic Log



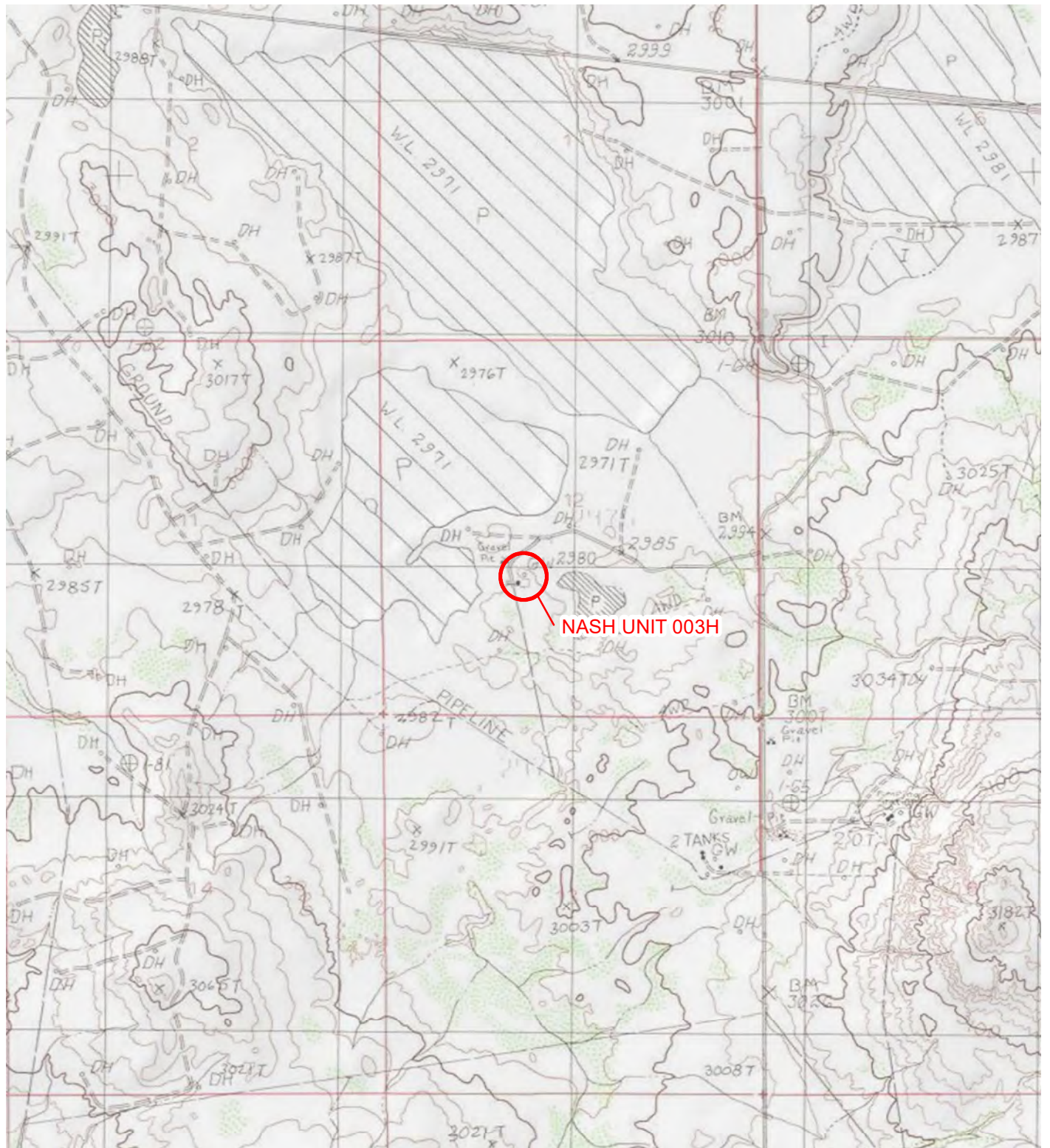
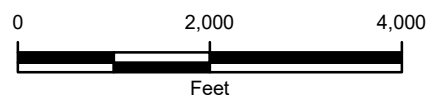


IMAGE COURTESY OF ESRI/USGS

LEGEND

 SITE LOCATION

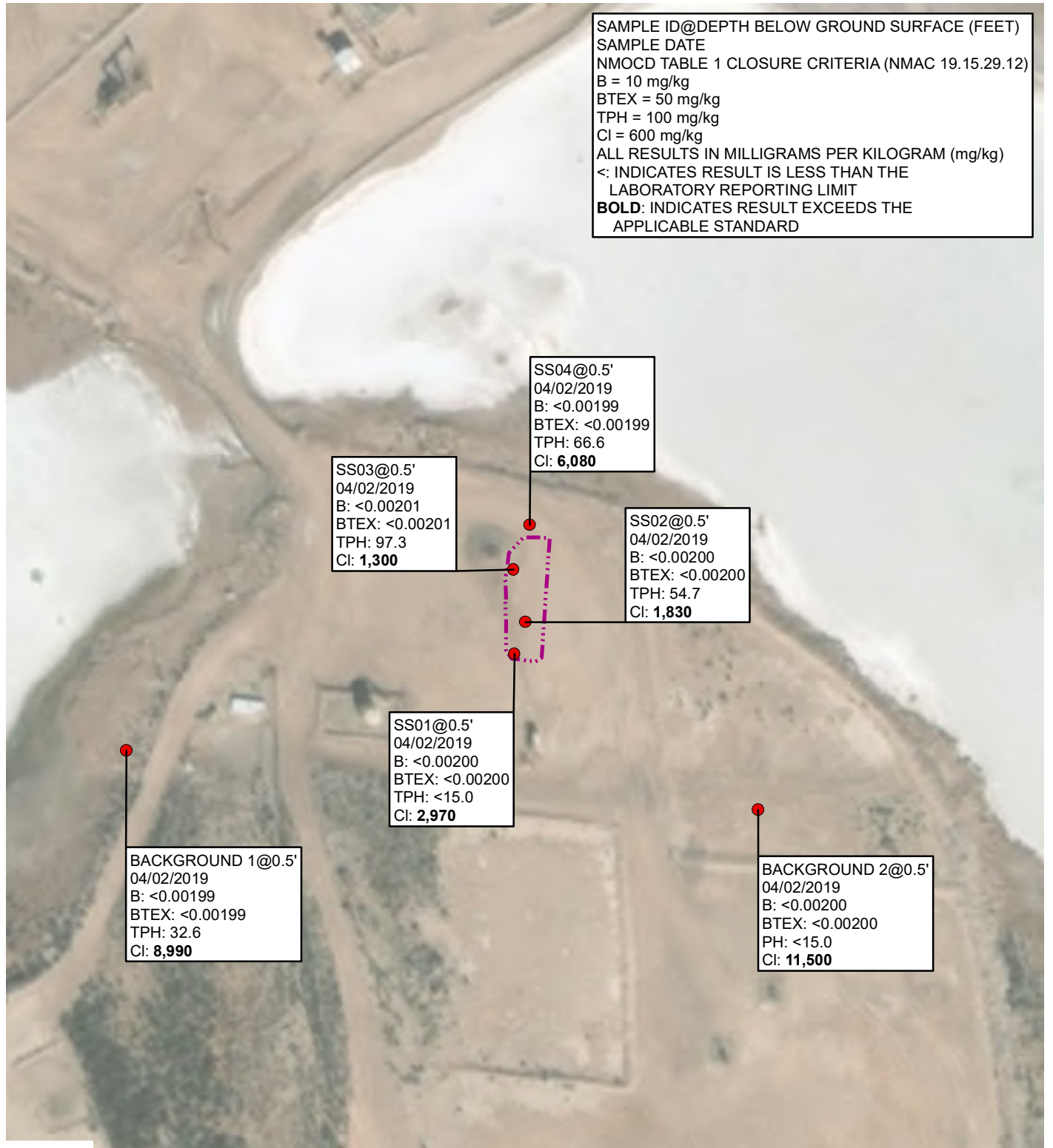


NOTE: REMEDIATION PERMIT
NUMBER 2RP-5339

FIGURE 1
SITE LOCATION MAP
NASH UNIT 003H
UNIT K SEC 12 T23S R29E
EDDY COUNTY, NEW MEXICO
XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 TPH = 100 mg/kg
 Cl = 600 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE STANDARD



LEGEND

● PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS

□ RELEASE EXTENT

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-5339

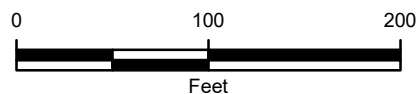


IMAGE COURTESY OF ESRI

FIGURE 2
 PRELIMINARY SOIL SAMPLE LOCATIONS
 NASH UNIT 003H
 UNIT K SEC 12 T23S R29E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 TPH = 100 mg/kg
 Cl = 600 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE STANDARD

PH03@1' 05/29/2019 B: <0.00200 BTEX: <0.00200 TPH: <15.0 Cl: 1,430	PH03A@2' 05/29/2019 B: <0.00201 BTEX: <0.00201 TPH: <15.0 Cl: 2,580
PH03B@3' 05/29/2019 B: <0.00200 BTEX: <0.00200 TPH: <15.0 Cl: 4,260	

PH02@1' 05/29/2019 B: <0.00200 BTEX: <0.00200 TPH: 284 Cl: 4,050
PH02A@2' 05/29/2019 B: <0.00200 BTEX: <0.00200 TPH: <14.9 Cl: 3,030
PH02B@3' 05/29/2019 B: <0.00199 BTEX: <0.00199 TPH: 19.8 Cl: 8,690

PH04@1' 05/29/2019 B: <0.00202 BTEX: <0.00202 TPH: <15.0 Cl: 2,610	PH04A@2' 05/29/2019 B: <0.00200 BTEX: <0.00200 TPH: <15.0 Cl: 1,900
	PH04B@3' 05/29/2019 B: <0.00199 BTEX: <0.00199 TPH: <15.0 Cl: 796

PH01@1' 05/29/2019 B: <0.00200 BTEX: <0.00200 TPH: <15.0 Cl: 1,790	PH01A@2' 05/29/2019 B: <0.00200 BTEX: <0.00200 TPH: <15.0 Cl: 1,670	PH01B@3' 05/29/2019 B: <0.00201 BTEX: <0.00201 TPH: <15.0 Cl: 1,900
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LEGEND

- DELINEATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- ▭ RELEASE EXTENT

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-5339

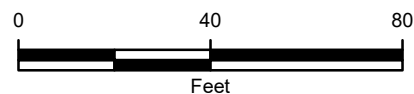


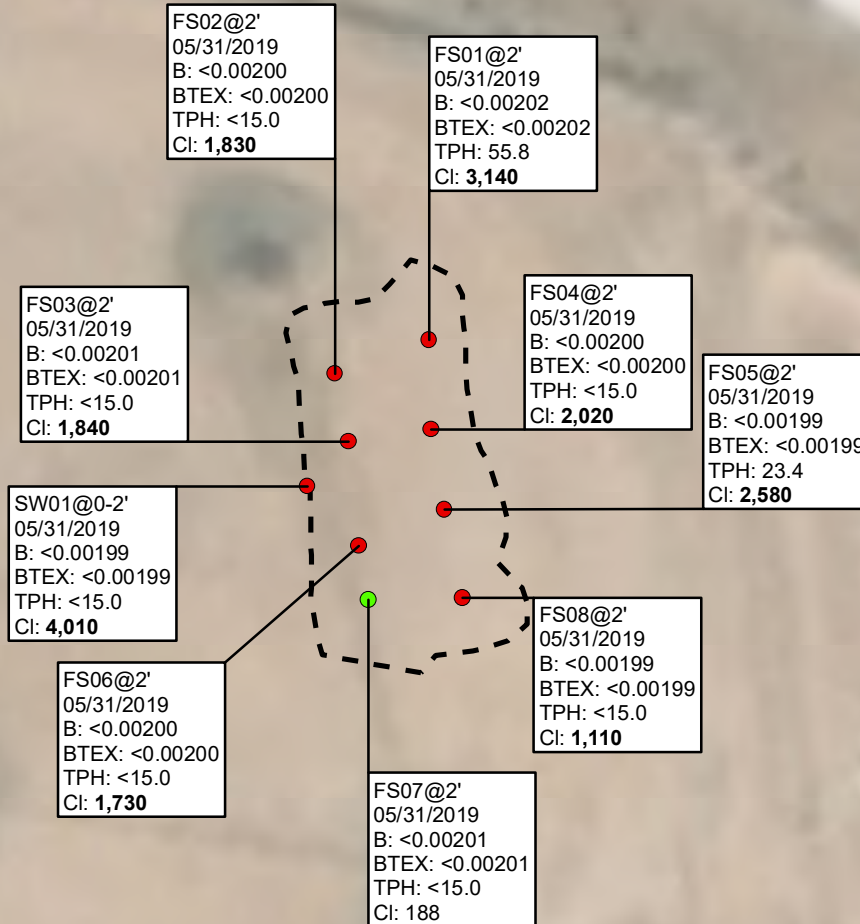
IMAGE COURTESY OF ESRI



FIGURE 3
 DELINEATION SOIL SAMPLE LOCATIONS
 NASH UNIT 003H
 UNIT K SEC 12 T23S R29E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
 SAMPLE DATE
 NMOCD TABLE 1 CLOSURE CRITERIA (NMAC 19.15.29.12)
 B = 10 mg/kg
 BTEX = 50 mg/kg
 TPH = 100 mg/kg
 Cl = 600 mg/kg
 ALL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD: INDICATES RESULT EXCEEDS THE
 APPLICABLE STANDARD



LEGEND

- EXCAVATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE STANDARDS
- EXCAVATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE STANDARDS

--- EXCAVATION EXTENT

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-5339

IMAGE COURTESY OF ESRI

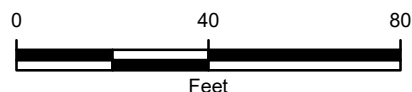


FIGURE 4
 EXCAVATION SOIL SAMPLE LOCATIONS
 NASH UNIT 003H
 UNIT K SEC 12 T23S R29E
 EDDY COUNTY, NEW MEXICO
 XTO ENERGY, INC.



**TABLE 1
SOIL ANALYTICAL RESULTS**

**NASH UNIT 003H
REMEDATION PERMIT NUMBER 2RP-5339
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)
Background 1	0.5	04/02/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	32.6	<15.0	32.6	32.6	8,990
Background 2	0.5	04/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	11500
SS01	0.5	04/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	2970
SS02	0.5	04/02/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	54.7	<15.0	54.7	54.7	1,830
SS03	0.5	04/02/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	79.6	17.7	79.6	97.3	1,300
SS04	0.5	04/02/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	50.7	15.9	50.7	66.6	6,080
PH01	1	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,790
PH02	1	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	171	113	171	284	4,050
PH03	1	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,430
PH04	1	05/29/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15.0	<15.0	2,610
PH01A	2	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,670
PH02A	2	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<14.9	<14.9	<14.9	<14.9	<14.9	3,030
PH03A	2	05/29/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	2,580
PH04A	2	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,880
PH01B	3	05/29/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,900
PH02B	3	05/29/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	19.8	<15.0	19.8	19.8	8,690
PH03B	3	05/29/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	4,260
PH04B	3	05/29/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	796
FS01	2	05/31/2019	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	55.8	<15.0	55.8	55.8	3,140
FS02	2	05/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,830
FS03	2	05/31/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	1,840
FS04	2	05/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	2,020
FS05	2	05/31/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	23.4	<15.0	23.4	23.4	2,580
FS06	2	05/31/2019	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<15.0	<15.0	<15.0	<15.0	<15.0	1,730
FS07	2	05/31/2019	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15.0	<15.0	188



**TABLE 1
SOIL ANALYTICAL RESULTS**

**NASH UNIT 003H
REMEDIATION PERMIT NUMBER 2RP-5339
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)
FS08	2	05/31/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	1,110
SW01	0-2	05/31/2019	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	<15.0	4,010
NMOCD Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600

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

* - indicates sample was collected in area to be reclaimed after remediation is complete; closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg



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	NAB1909559201
District RP	2 2RP-5339
Facility ID	
Application ID	pAB1909558298

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) NAB1909559201
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.31777 Longitude -103.94039
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Nash Unit 003H	Site Type Production Well Facility
Date Release Discovered 3/19/2019	API# (if applicable) 30-015-21781

Unit Letter	Section	Township	Range	County
K	12	23S	29E	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)	Volume Recovered (bbls)
	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) Hydrochloric Acid	Volume/Weight Released (provide units) 20.94 bbls	Volume/Weight Recovered (provide units) 20 bbls

Cause of Release

Contract crew released fluid into temporary lined containment while transferring acid from one tank to another due to failed valves. The crew applied soda ash to neutralize the acid and a vac truck removed fluid from containment. Valves were repaired. A 48-hour advance notice of liner inspection was provided by email to NMOCD District 2. The liner was visually inspected and determined to be inadequate. Additional third party resources have been retained to assist with remediation. Remediation will begin as soon as well work is complete.

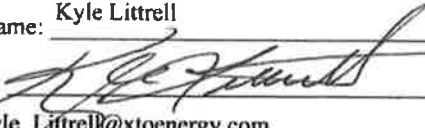
State of New Mexico
Oil Conservation Division

Incident ID	NAB1909559201
District RP	2 2RP-5339
Facility ID	
Application ID	pAB1909558298

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 <u>not</u> been undertaken, explain why: N/A
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: <u>Kyle Littrell</u> Title: <u>SH&E Supervisor</u> Signature: <u></u> Date: <u>4/2/2019</u> email: <u>Kyle.Littrell@xtoenergy.com</u> Telephone: <u>432-221-7331</u>
OCD Only Received by: <u></u> Date: <u>4/5/19</u>

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5339
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>< 50</u> (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

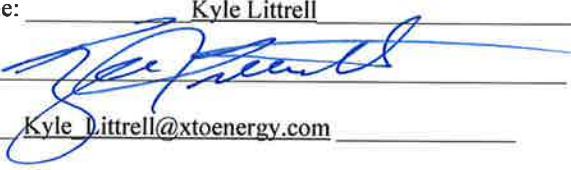
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, 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.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-5339
Facility ID	
Application ID	

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

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 6/14/2019

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

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	2RP-5339
Facility ID	
Application ID	

Closure

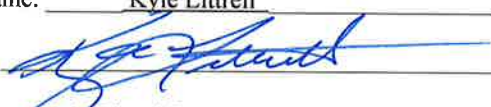
The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection). Site photographs are included.
- ☒ 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: 6/14/2019

email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

Analytical Report 620071

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Nash 3H

012919058

10-APR-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
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-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)



10-APR-19

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

Reference: XENCO Report No(s): **620071**
Nash 3H
Project Address: ---

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620071. 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. 620071 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,

Kalei Stout

Midland Laboratory Director

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 620071



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	04-02-19 11:10	0.5 ft	620071-001
SS02	S	04-02-19 11:20	0.5 ft	620071-002
SS03	S	04-02-19 11:30	0.5 ft	620071-003
SS04	S	04-02-19 11:40	0.5 ft	620071-004



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 3H*

Project ID: 012919058
Work Order Number(s): 620071

Report Date: 10-APR-19
Date Received: 04/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084980 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 620302-001 S, 620071-002.

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



Certificate of Analysis Summary 620071

LT Environmental, Inc., Arvada, CO

Project Name: Nash 3H



Project Id: 012919058
Contact: Adrian Baker
Project Location: ---

Date Received in Lab: Thu Apr-04-19 11:35 am
Report Date: 10-APR-19
Project Manager: Kalei Stout

Analysis Requested	Lab Id:	620071-001	620071-002	620071-003	620071-004		
	Field Id:	SS01	SS02	SS03	SS04		
	Depth:	0.5- ft	0.5- ft	0.5- ft	0.5- ft		
	Matrix:	SOIL	SOIL	SOIL	SOIL		
	Sampled:	Apr-02-19 11:10	Apr-02-19 11:20	Apr-02-19 11:30	Apr-02-19 11:40		
BTEX by EPA 8021B	Extracted:	Apr-08-19 12:00	Apr-08-19 12:00	Apr-08-19 12:00	Apr-08-19 12:00		
	Analyzed:	Apr-08-19 21:43	Apr-08-19 22:59	Apr-08-19 23:18	Apr-08-19 23:37		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
	Benzene	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
	Toluene	<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
m,p-Xylenes		<0.00400 0.00400	<0.00400 0.00400	<0.00402 0.00402	<0.00398 0.00398		
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199		
Inorganic Anions by EPA 300	Extracted:	Apr-09-19 15:45	Apr-09-19 15:45	Apr-09-19 15:45	Apr-09-19 15:45		
	Analyzed:	Apr-09-19 23:28	Apr-09-19 23:55	Apr-10-19 00:02	Apr-10-19 00:22		
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
	Chloride	2970 99.0	1830 50.3	1300 24.9	6080 100		
TPH by SW8015 Mod	Extracted:	Apr-06-19 08:00	Apr-06-19 08:00	Apr-06-19 08:00	Apr-06-19 08:00		
	Analyzed:	Apr-06-19 15:56	Apr-06-19 16:59	Apr-06-19 17:20	Apr-06-19 17:41		
	Units/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		
	Diesel Range Organics (DRO)	<15.0 15.0	54.7 15.0	79.6 15.0	50.7 15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	17.7 15.0	15.9 15.0		
Total TPH		<15.0 15.0	54.7 15.0	97.3 15.0	66.6 15.0		
Total GRO-DRO		<15.0 15.0	54.7 15.0	79.6 15.0	50.7 15.0		

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

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

Version: 1.9%

Kalei Stout
Midland Laboratory Director



Certificate of Analytical Results 620071



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **SS01**
Lab Sample Id: 620071-001

Matrix: Soil
Date Collected: 04.02.19 11.10

Date Received: 04.04.19 11.35
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3085140

Date Prep: 04.09.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2970	99.0	mg/kg	04.09.19 23.28		20

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084907

Date Prep: 04.06.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.06.19 15.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.06.19 15.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.06.19 15.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.06.19 15.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.06.19 15.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	04.06.19 15.56	
o-Terphenyl	84-15-1	94	%	70-135	04.06.19 15.56	



Certificate of Analytical Results 620071



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **SS01**
Lab Sample Id: 620071-001

Matrix: Soil
Date Collected: 04.02.19 11.10

Date Received: 04.04.19 11.35
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084980

Date Prep: 04.08.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.08.19 21.43	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.08.19 21.43	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.08.19 21.43	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.08.19 21.43	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.08.19 21.43	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.08.19 21.43	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.08.19 21.43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	115	%	70-130	04.08.19 21.43		
1,4-Difluorobenzene	540-36-3	104	%	70-130	04.08.19 21.43		



Certificate of Analytical Results 620071



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: SS02
Lab Sample Id: 620071-002

Matrix: Soil
Date Collected: 04.02.19 11.20

Date Received: 04.04.19 11.35
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3085140

Date Prep: 04.09.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1830	50.3	mg/kg	04.09.19 23.55		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084907

Date Prep: 04.06.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.06.19 16.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	54.7	15.0	mg/kg	04.06.19 16.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.06.19 16.59	U	1
Total TPH	PHC635	54.7	15.0	mg/kg	04.06.19 16.59		1
Total GRO-DRO	PHC628	54.7	15.0	mg/kg	04.06.19 16.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	04.06.19 16.59	
o-Terphenyl	84-15-1	91	%	70-135	04.06.19 16.59	



Certificate of Analytical Results 620071



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: SS02
Lab Sample Id: 620071-002

Matrix: Soil
Date Collected: 04.02.19 11.20

Date Received: 04.04.19 11.35
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084980

Date Prep: 04.08.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.08.19 22.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.08.19 22.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.08.19 22.59	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.08.19 22.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.08.19 22.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.08.19 22.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.08.19 22.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	04.08.19 22.59		
4-Bromofluorobenzene	460-00-4	143	%	70-130	04.08.19 22.59	**	



Certificate of Analytical Results 620071



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: SS03
Lab Sample Id: 620071-003

Matrix: Soil
Date Collected: 04.02.19 11.30

Date Received: 04.04.19 11.35
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3085140

Date Prep: 04.09.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1300	24.9	mg/kg	04.10.19 00.02		5

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084907

Date Prep: 04.06.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.06.19 17.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	79.6	15.0	mg/kg	04.06.19 17.20		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	17.7	15.0	mg/kg	04.06.19 17.20		1
Total TPH	PHC635	97.3	15.0	mg/kg	04.06.19 17.20		1
Total GRO-DRO	PHC628	79.6	15.0	mg/kg	04.06.19 17.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	04.06.19 17.20	
o-Terphenyl	84-15-1	89	%	70-135	04.06.19 17.20	



Certificate of Analytical Results 620071



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: SS03
Lab Sample Id: 620071-003

Matrix: Soil
Date Collected: 04.02.19 11.30

Date Received: 04.04.19 11.35
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 04.08.19 12.00

Basis: Wet Weight

Seq Number: 3084980

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.08.19 23.18	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.08.19 23.18	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.08.19 23.18	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.08.19 23.18	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.08.19 23.18	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	04.08.19 23.18	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.08.19 23.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	04.08.19 23.18		
4-Bromofluorobenzene	460-00-4	118	%	70-130	04.08.19 23.18		



Certificate of Analytical Results 620071



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **SS04**
Lab Sample Id: 620071-004

Matrix: Soil
Date Collected: 04.02.19 11.40

Date Received: 04.04.19 11.35
Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3085140

Date Prep: 04.09.19 15.45

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6080	100	mg/kg	04.10.19 00.22		20

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3084907

Date Prep: 04.06.19 08.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.06.19 17.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	50.7	15.0	mg/kg	04.06.19 17.41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	15.9	15.0	mg/kg	04.06.19 17.41		1
Total TPH	PHC635	66.6	15.0	mg/kg	04.06.19 17.41		1
Total GRO-DRO	PHC628	50.7	15.0	mg/kg	04.06.19 17.41		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	04.06.19 17.41	
o-Terphenyl	84-15-1	91	%	70-135	04.06.19 17.41	



Certificate of Analytical Results 620071



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **SS04**
Lab Sample Id: 620071-004

Matrix: Soil
Date Collected: 04.02.19 11.40

Date Received: 04.04.19 11.35
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3084980

Date Prep: 04.08.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.08.19 23.37	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.08.19 23.37	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.08.19 23.37	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.08.19 23.37	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.08.19 23.37	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.08.19 23.37	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.08.19 23.37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	04.08.19 23.37		
4-Bromofluorobenzene	460-00-4	119	%	70-130	04.08.19 23.37		

- 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 620071

LT Environmental, Inc.
Nash 3H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3085140

Matrix: Solid

Prep Method: E300P

MB Sample Id: 7675404-1-BLK

LCS Sample Id: 7675404-1-BKS

Date Prep: 04.09.19

LCSD Sample Id: 7675404-1-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	245	98	232	93	90-110	5	20	mg/kg	04.09.19 21:46	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3085140

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 619598-009

MS Sample Id: 619598-009 S

Date Prep: 04.09.19

MSD Sample Id: 619598-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	115	250	307	77	398	113	90-110	26	20	mg/kg	04.09.19 22:06	XF

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3085140

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 620072-001

MS Sample Id: 620072-001 S

Date Prep: 04.09.19

MSD Sample Id: 620072-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	118	248	296	72	363	99	90-110	20	20	mg/kg	04.09.19 23:41	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084907

Matrix: Solid

Prep Method: TX1005P

MB Sample Id: 7675254-1-BLK

LCS Sample Id: 7675254-1-BKS

Date Prep: 04.06.19

LCSD Sample Id: 7675254-1-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	945	95	996	100	70-135	5	20	mg/kg	04.06.19 15:14	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1070	107	70-135	6	20	mg/kg	04.06.19 15:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		122		128		70-135	%	04.06.19 15:14
o-Terphenyl	97		118		124		70-135	%	04.06.19 15:14

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

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

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 620071

LT Environmental, Inc. Nash 3H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084907

Parent Sample Id: 620071-001

Matrix: Soil

MS Sample Id: 620071-001 S

Prep Method: TX1005P

Date Prep: 04.06.19

MSD Sample Id: 620071-001 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)	<7.99	999	927	93	943	94	70-135	2	20	mg/kg	04.06.19 16:17	
Diesel Range Organics (DRO)	<8.12	999	984	98	1020	102	70-135	4	20	mg/kg	04.06.19 16:17	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	118		119		70-135	%	04.06.19 16:17
o-Terphenyl	112		114		70-135	%	04.06.19 16:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084980

MB Sample Id: 7675325-1-BLK

Matrix: Solid

LCS Sample Id: 7675325-1-BKS

Prep Method: SW5030B

Date Prep: 04.08.19

LCSD Sample Id: 7675325-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0899	90	0.0923	91	70-130	3	35	mg/kg	04.08.19 15:46	
Toluene	<0.00200	0.100	0.0914	91	0.0939	93	70-130	3	35	mg/kg	04.08.19 15:46	
Ethylbenzene	<0.00200	0.100	0.0941	94	0.0972	96	70-130	3	35	mg/kg	04.08.19 15:46	
m,p-Xylenes	<0.00101	0.200	0.190	95	0.196	97	70-130	3	35	mg/kg	04.08.19 15:46	
o-Xylene	<0.00200	0.100	0.0959	96	0.0986	98	70-130	3	35	mg/kg	04.08.19 15:46	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		97		98		70-130	%	04.08.19 15:46
4-Bromofluorobenzene	105		99		100		70-130	%	04.08.19 15:46

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084980

Parent Sample Id: 620302-001

Matrix: Soil

MS Sample Id: 620302-001 S

Prep Method: SW5030B

Date Prep: 04.08.19

MSD Sample Id: 620302-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0523	52	0.0762	75	70-130	37	35	mg/kg	04.08.19 16:24	XF
Toluene	<0.000457	0.100	0.0673	67	0.0879	87	70-130	27	35	mg/kg	04.08.19 16:24	X
Ethylbenzene	<0.000567	0.100	0.0727	73	0.0920	91	70-130	23	35	mg/kg	04.08.19 16:24	
m,p-Xylenes	<0.00102	0.201	0.127	63	0.192	96	70-130	41	35	mg/kg	04.08.19 16:24	XF
o-Xylene	<0.000346	0.100	0.0624	62	0.0985	98	70-130	45	35	mg/kg	04.08.19 16:24	XF

Surrogate

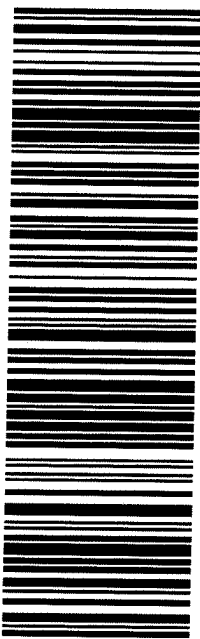
	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		97		70-130	%	04.08.19 16:24
4-Bromofluorobenzene	137	**	118		70-130	%	04.08.19 16:24

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

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

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

ORIGIN ID:CAOA (575) 887-6245 XENCO PAC N MAIL 910 W PIERCE ST CARLSBAD, NM 88220 UNITED STATES US	SHIP DATE: 03APR19 ACTWGT: 39.00 LB CAD: 101813706/MET4100 DIMS: 26x15x14 IN BILL RECIPIENT
TO HOLD FOR XENCO FEDEX EXPRESS SHIP CENTER FEDEX SHIP CENTER 3600 COUNTY RD 1276S MIDLAND TX 79711 (800) 794-1296 INV: REF: DEPT:	
TRK# 7748 7833 8790 THU - 04 APR HOLD STANDARD OVERNIGHT HLD MAFA TX-US LBB 41 MAFA 	
	

565J1D7E5/23AD

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 04/04/2019 11:35:00 AM

Work Order #: 620071

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

Brianna Teel

Brianna Teel

Date: 04/04/2019

Checklist reviewed by:

Kalei Stout

Kalei Stout

Date: 04/05/2019

Analytical Report 620073

for
LT Environmental, Inc.

Project Manager: Adrian Baker

Nash 3H

012919058

10-APR-19

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
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-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)



10-APR-19

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

Reference: XENCO Report No(s): **620073**
Nash 3H
Project Address: ---

Adrian Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620073. 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. 620073 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,

Kalei Stout

Midland Laboratory Director

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 620073



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Background 1	S	04-02-19 11:05	0.5 ft	620073-001
Background 2	S	04-02-19 11:50	0.5 ft	620073-002



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 3H*

Project ID: 012919058
Work Order Number(s): 620073

Report Date: 10-APR-19
Date Received: 04/04/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084923 BTEX by EPA 8021B

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



Certificate of Analysis Summary 620073

LT Environmental, Inc., Arvada, CO

Project Name: Nash 3H



Project Id: 012919058
Contact: Adrian Baker
Project Location: ---

Date Received in Lab: Thu Apr-04-19 11:35 am
Report Date: 10-APR-19
Project Manager: Kalei Stout

Analysis Requested	Lab Id:	620073-001	620073-002				
	Field Id:	Background 1	Background 2				
	Depth:	0.5- ft	0.5- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Apr-02-19 11:05	Apr-02-19 11:50				
BTEX by EPA 8021B	Extracted:	Apr-08-19 09:00	Apr-08-19 09:00				
	Analyzed:	Apr-08-19 16:59	Apr-08-19 17:18				
	Units/RL:	mg/kg RL	mg/kg RL				
	Benzene	<0.00199 0.00199	<0.00200 0.00200				
	Toluene	<0.00199 0.00199	<0.00200 0.00200				
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200				
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401				
o-Xylene		<0.00199 0.00199	<0.00200 0.00200				
Total Xylenes		<0.00199 0.00199	<0.00200 0.00200				
Total BTEX		<0.00199 0.00199	<0.00200 0.00200				
Inorganic Anions by EPA 300	Extracted:	Apr-09-19 15:45	Apr-09-19 15:45				
	Analyzed:	Apr-10-19 00:49	Apr-10-19 00:56				
	Units/RL:	mg/kg RL	mg/kg RL				
	Chloride	8990 250	11500 248				
TPH by SW8015 Mod	Extracted:	Apr-06-19 08:00	Apr-06-19 08:00				
	Analyzed:	Apr-07-19 09:34	Apr-06-19 18:23				
	Units/RL:	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	32.6 15.0	<15.0 15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				
Total TPH		32.6 15.0	<15.0 15.0				
Total GRO-DRO		32.6 15.0	<15.0 15.0				

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

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

Kalei Stout
Midland Laboratory Director



Certificate of Analytical Results 620073



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **Background 1**

Matrix: Soil

Date Received: 04.04.19 11.35

Lab Sample Id: 620073-001

Date Collected: 04.02.19 11.05

Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 04.09.19 15.45

Basis: Wet Weight

Seq Number: 3085140

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8990	250	mg/kg	04.10.19 00.49		50

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 04.06.19 08.00

Basis: Wet Weight

Seq Number: 3084907

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.07.19 09.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	32.6	15.0	mg/kg	04.07.19 09.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.07.19 09.34	U	1
Total TPH	PHC635	32.6	15.0	mg/kg	04.07.19 09.34		1
Total GRO-DRO	PHC628	32.6	15.0	mg/kg	04.07.19 09.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	04.07.19 09.34	
o-Terphenyl	84-15-1	97	%	70-135	04.07.19 09.34	



Certificate of Analytical Results 620073



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **Background 1**

Matrix: Soil

Date Received: 04.04.19 11.35

Lab Sample Id: 620073-001

Date Collected: 04.02.19 11.05

Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 04.08.19 09.00

Basis: Wet Weight

Seq Number: 3084923

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.08.19 16.59	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.08.19 16.59	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.08.19 16.59	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.08.19 16.59	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.08.19 16.59	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	04.08.19 16.59	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.08.19 16.59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	94	%	70-130	04.08.19 16.59		
4-Bromofluorobenzene	460-00-4	100	%	70-130	04.08.19 16.59		



Certificate of Analytical Results 620073



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **Background 2**

Matrix: Soil

Date Received: 04.04.19 11.35

Lab Sample Id: 620073-002

Date Collected: 04.02.19 11.50

Sample Depth: 0.5 ft

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 04.09.19 15.45

Basis: Wet Weight

Seq Number: 3085140

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11500	248	mg/kg	04.10.19 00.56		50

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 04.06.19 08.00

Basis: Wet Weight

Seq Number: 3084907

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	04.06.19 18.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	04.06.19 18.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	04.06.19 18.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	04.06.19 18.23	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	04.06.19 18.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	04.06.19 18.23	
o-Terphenyl	84-15-1	89	%	70-135	04.06.19 18.23	



Certificate of Analytical Results 620073



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **Background 2**

Matrix: Soil

Date Received: 04.04.19 11.35

Lab Sample Id: 620073-002

Date Collected: 04.02.19 11.50

Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 04.08.19 09.00

Basis: Wet Weight

Seq Number: 3084923

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.08.19 17.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.08.19 17.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.08.19 17.18	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.08.19 17.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.08.19 17.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	04.08.19 17.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.08.19 17.18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	95	%	70-130	04.08.19 17.18		
4-Bromofluorobenzene	460-00-4	100	%	70-130	04.08.19 17.18		

- 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 620073

LT Environmental, Inc.
Nash 3H

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3085140

MB Sample Id: 7675404-1-BLK

Matrix: Solid

LCS Sample Id: 7675404-1-BKS

Prep Method: E300P

Date Prep: 04.09.19

LCSD Sample Id: 7675404-1-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	245	98	232	93	90-110	5	20	mg/kg	04.09.19 21:46	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3085140

Parent Sample Id: 619598-009

Matrix: Soil

MS Sample Id: 619598-009 S

Prep Method: E300P

Date Prep: 04.09.19

MSD Sample Id: 619598-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	115	250	307	77	398	113	90-110	26	20	mg/kg	04.09.19 22:06	XF

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3085140

Parent Sample Id: 620072-001

Matrix: Soil

MS Sample Id: 620072-001 S

Prep Method: E300P

Date Prep: 04.09.19

MSD Sample Id: 620072-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	118	248	296	72	363	99	90-110	20	20	mg/kg	04.09.19 23:41	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084907

MB Sample Id: 7675254-1-BLK

Matrix: Solid

LCS Sample Id: 7675254-1-BKS

Prep Method: TX1005P

Date Prep: 04.06.19

LCSD Sample Id: 7675254-1-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	945	95	996	100	70-135	5	20	mg/kg	04.06.19 15:14	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1070	107	70-135	6	20	mg/kg	04.06.19 15:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	96		122		128		70-135	%	04.06.19 15:14
o-Terphenyl	97		118		124		70-135	%	04.06.19 15:14

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 620073

LT Environmental, Inc.

Nash 3H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3084907

Parent Sample Id: 620071-001

Matrix: Soil

MS Sample Id: 620071-001 S

Prep Method: TX1005P

Date Prep: 04.06.19

MSD Sample Id: 620071-001 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)	<7.99	999	927	93	943	94	70-135	2	20	mg/kg	04.06.19 16:17	
Diesel Range Organics (DRO)	<8.12	999	984	98	1020	102	70-135	4	20	mg/kg	04.06.19 16:17	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	118		119		70-135	%	04.06.19 16:17
o-Terphenyl	112		114		70-135	%	04.06.19 16:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084923

MB Sample Id: 7675279-1-BLK

Matrix: Solid

LCS Sample Id: 7675279-1-BKS

Prep Method: SW5030B

Date Prep: 04.08.19

LCSD Sample Id: 7675279-1-BSO

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.0933	94	0.0933	93	70-130	0	35	mg/kg	04.08.19 22:20	
Toluene	<0.000454	0.0996	0.0991	99	0.100	100	70-130	1	35	mg/kg	04.08.19 22:20	
Ethylbenzene	<0.000563	0.0996	0.0934	94	0.0945	95	70-130	1	35	mg/kg	04.08.19 22:20	
m,p-Xylenes	<0.00101	0.199	0.188	94	0.190	95	70-130	1	35	mg/kg	04.08.19 22:20	
o-Xylene	<0.000343	0.0996	0.0946	95	0.0957	96	70-130	1	35	mg/kg	04.08.19 22:20	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		97		97		70-130	%	04.08.19 22:20
4-Bromofluorobenzene	87		91		93		70-130	%	04.08.19 22:20

Analytical Method: BTEX by EPA 8021B

Seq Number: 3084923

Parent Sample Id: 619719-001

Matrix: Soil

MS Sample Id: 619719-001 S

Prep Method: SW5030B

Date Prep: 04.08.19

MSD Sample Id: 619719-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000387	0.101	0.0597	59	0.0765	77	70-130	25	35	mg/kg	04.08.19 22:58	X
Toluene	<0.000458	0.101	0.0615	61	0.0799	80	70-130	26	35	mg/kg	04.08.19 22:58	X
Ethylbenzene	<0.000568	0.101	0.0552	55	0.0729	73	70-130	28	35	mg/kg	04.08.19 22:58	X
m,p-Xylenes	<0.00102	0.201	0.110	55	0.145	73	70-130	27	35	mg/kg	04.08.19 22:58	X
o-Xylene	0.000399	0.101	0.0562	55	0.0742	74	70-130	28	35	mg/kg	04.08.19 22:58	X

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		98		70-130	%	04.08.19 22:58
4-Bromofluorobenzene	100		102		70-130	%	04.08.19 22:58

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

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

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

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)555-3443 Lubbock, TX (806)794-1296
Phoenix AZ (480-335-0900) Atlanta GA (770-445-8800) Tampa FL (813)-392-7550
Joplin MO (417)-685-3333

Page 1 of 1
www.yencc.com

Project Manager:	Adrian Baker	Bill to: (if different)	
Company Name:	LT Environmental, Inc., Permian office	Company Name:	<i>XTO Energy</i>
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	
Phone:	432.704.5178	Email:	<i>abaker@ltenv.com, lburnbach@ltenv.com</i>

Work Order Comments Program: UST/PST ☐ PRP ☐ brownfields ☐ RC ☐ superfund ☐ State of Project: Reporting Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐ Deliverables: EDD ☐ ADAPT ☐ Other:			
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[illegible]

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	Ti	Sn	U	V	Zn
<i>Circle Method(s) and Metal(s) to be analyzed</i>		TCLP	SPLP	6010:	8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U												

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
		04/09/2018 7:00			4/11/19
					4/11/18

Revised Date 05/14/18 Rev. 2018.

ORIGIN ID:CAOA (575) 887-6245
XENCO
PAC N MAIL
910 W PIERCE ST
CARLSBAD NM 88220
UNITED STATES US

SHIP DATE: 03APR19
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CAD: 101813706INET4100
DIMS: 28x15x14 IN
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3600 COUNTY RD 1276 S

MIDLAND TX 79711

(800) 794-1296

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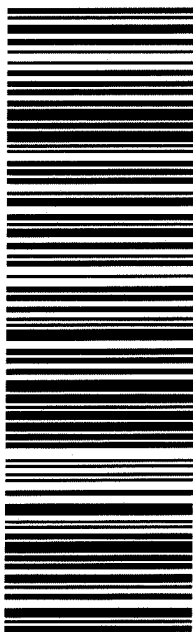
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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 04/04/2019 11:35:00 AM

Work Order #: 620073

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

Brianna Teel

Date: 04/04/2019

Checklist reviewed by:

Kalei Stout

Date: 04/05/2019

Analytical Report 626056

for
LT Environmental, Inc.

Project Manager: Dan Moir

Nash 3H

03-JUN-19

Collected By: Client



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

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)



03-JUN-19

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626056**

Nash 3H

Project Address: Delaware Basin

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) 626056. 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. 626056 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

Project Assistant

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Sample Cross Reference 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH01	S	05-29-19 14:00	1 ft	626056-001
PH01A	S	05-29-19 14:05	2 ft	626056-002
PH01B	S	05-29-19 14:10	3 ft	626056-003
PH02	S	05-29-19 14:20	1 ft	626056-004
PH02A	S	05-29-19 14:25	2 ft	626056-005
PH02B	S	05-29-19 14:30	3 ft	626056-006
PH03	S	05-29-19 14:40	1 ft	626056-007
PH03A	S	05-29-19 14:45	2 ft	626056-008
PH03B	S	05-29-19 14:50	3 ft	626056-009
PH04	S	05-29-19 15:20	1 ft	626056-010
PH04A	S	05-29-19 15:25	2 ft	626056-011
PH04B	S	05-29-19 15:30	3 ft	626056-012



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 3H*

Project ID:
Work Order Number(s): 626056

Report Date: 03-JUN-19
Date Received: 05/31/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090876 BTEX by EPA 8021B

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



Certificate of Analysis Summary 626056

LT Environmental, Inc., Arvada, CO

Project Name: Nash 3H



Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Fri May-31-19 11:31 am

Report Date: 03-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626056-001	626056-002	626056-003	626056-004	626056-005	626056-006
	Field Id:	PH01	PH01A	PH01B	PH02	PH02A	PH02B
	Depth:	1- ft	2- ft	3- ft	1- ft	2- ft	3- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-29-19 14:00	May-29-19 14:05	May-29-19 14:10	May-29-19 14:20	May-29-19 14:25	May-29-19 14:30
BTEX by EPA 8021B	Extracted:	May-31-19 13:45	May-31-19 13:45	May-31-19 13:45	May-31-19 13:45	May-31-19 13:45	May-31-19 13:45
	Analyzed:	May-31-19 16:55	May-31-19 17:15	May-31-19 17:34	May-31-19 17:53	May-31-19 18:13	May-31-19 18:32
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00401 0.00401	<0.00400 0.00400	<0.00402 0.00402	<0.00399 0.00399	<0.00401 0.00401	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199
Chloride by EPA 300	Extracted:	May-31-19 15:30	May-31-19 15:30	May-31-19 15:30	May-31-19 15:30	May-31-19 15:30	May-31-19 17:00
	Analyzed:	May-31-19 19:22	May-31-19 19:29	May-31-19 19:36	May-31-19 19:43	May-31-19 19:51	Jun-02-19 21:32
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1790 50.5	1670 49.9	1900 49.5	4050 101	3030 49.8	8690 99.6
TPH by SW8015 Mod	Extracted:	May-31-19 16:00	May-31-19 16:00	May-31-19 16:00	May-31-19 16:00	May-31-19 16:00	May-31-19 16:00
	Analyzed:	May-31-19 22:21	May-31-19 23:19	May-31-19 23:39	May-31-19 23:59	Jun-01-19 00:18	Jun-01-19 00:38
	Units/RL:	mg/kg 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	<14.9 14.9	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	171 15.0	<14.9 14.9	19.8 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	113 15.0	<14.9 14.9	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	284 15.0	<14.9 14.9	19.8 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	171 15.0	<14.9 14.9	19.8 15.0

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 626056

LT Environmental, Inc., Arvada, CO

Project Name: Nash 3H



Project Id:

Contact: Dan Moir

Project Location: Delaware Basin

Date Received in Lab: Fri May-31-19 11:31 am

Report Date: 03-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626056-007	626056-008	626056-009	626056-010	626056-011	626056-012
	Field Id:	PH03	PH03A	PH03B	PH04	PH04A	PH04B
	Depth:	1- ft	2- ft	3- ft	1- ft	2- ft	3- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-29-19 14:40	May-29-19 14:45	May-29-19 14:50	May-29-19 15:20	May-29-19 15:25	May-29-19 15:30
BTEX by EPA 8021B	Extracted:	May-31-19 13:45	May-31-19 13:45	May-31-19 13:45	May-31-19 13:45	May-31-19 13:45	May-31-19 13:45
	Analyzed:	May-31-19 18:51	May-31-19 19:10	May-31-19 19:29	May-31-19 19:48	May-31-19 21:02	May-31-19 21:21
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00400 0.00400	<0.00402 0.00402	<0.00399 0.00399	<0.00403 0.00403	<0.00400 0.00400	<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199
Chloride by EPA 300	Extracted:	May-31-19 17:00	May-31-19 17:00	May-31-19 17:00	May-31-19 17:00	May-31-19 17:00	May-31-19 17:00
	Analyzed:	Jun-02-19 21:37	Jun-02-19 21:42	Jun-02-19 21:58	Jun-02-19 22:03	Jun-02-19 22:08	Jun-02-19 22:13
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1430 50.0	2580 50.3	4260 49.6	2610 50.5	1880 49.9	796 50.2
TPH by SW8015 Mod	Extracted:	May-31-19 16:00	May-31-19 16:00	May-31-19 16:00	May-31-19 16:00	May-31-19 16:00	May-31-19 16:00
	Analyzed:	Jun-01-19 00:57	Jun-01-19 01:17	Jun-01-19 01:37	Jun-01-19 01:56	Jun-01-19 02:35	Jun-01-19 02:55
	Units/RL:	mg/kg 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	<15.0 15.0
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH01**
Lab Sample Id: 626056-001

Matrix: Soil
Date Collected: 05.29.19 14.00

Date Received: 05.31.19 11.31
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090847

Date Prep: 05.31.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1790	50.5	mg/kg	05.31.19 19.22		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 22.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 22.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 22.21	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 22.21	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 22.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	05.31.19 22.21	
o-Terphenyl	84-15-1	96	%	70-135	05.31.19 22.21	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH01**
Lab Sample Id: 626056-001

Matrix: Soil
Date Collected: 05.29.19 14.00

Date Received: 05.31.19 11.31
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.31.19 13.45

Basis: Wet Weight

Seq Number: 3090876

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 16.55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 16.55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 16.55	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.31.19 16.55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 16.55	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 16.55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 16.55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	98	%	70-130	05.31.19 16.55		
4-Bromofluorobenzene	460-00-4	97	%	70-130	05.31.19 16.55		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH01A**
Lab Sample Id: 626056-002

Matrix: Soil
Date Collected: 05.29.19 14.05

Date Received: 05.31.19 11.31
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090847

Date Prep: 05.31.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1670	49.9	mg/kg	05.31.19 19.29		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 23.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 23.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 23.19	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 23.19	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 23.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	05.31.19 23.19	
o-Terphenyl	84-15-1	95	%	70-135	05.31.19 23.19	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH01A**
Lab Sample Id: 626056-002

Matrix: Soil
Date Collected: 05.29.19 14.05

Date Received: 05.31.19 11.31
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.31.19 13.45

Basis: Wet Weight

Seq Number: 3090876

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 17.15	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 17.15	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 17.15	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.31.19 17.15	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 17.15	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 17.15	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 17.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	05.31.19 17.15		
1,4-Difluorobenzene	540-36-3	104	%	70-130	05.31.19 17.15		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH01B**
Lab Sample Id: 626056-003

Matrix: Soil
Date Collected: 05.29.19 14.10

Date Received: 05.31.19 11.31
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090847

Date Prep: 05.31.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1900	49.5	mg/kg	05.31.19 19.36		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 23.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.31.19 23.39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.31.19 23.39	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.31.19 23.39	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	05.31.19 23.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	05.31.19 23.39	
o-Terphenyl	84-15-1	94	%	70-135	05.31.19 23.39	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH01B**
Lab Sample Id: 626056-003

Matrix: Soil
Date Collected: 05.29.19 14.10

Date Received: 05.31.19 11.31
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090876

Date Prep: 05.31.19 13.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.31.19 17.34	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.31.19 17.34	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.31.19 17.34	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.31.19 17.34	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.31.19 17.34	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.31.19 17.34	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.31.19 17.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	05.31.19 17.34		
1,4-Difluorobenzene	540-36-3	114	%	70-130	05.31.19 17.34		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH02**
Lab Sample Id: 626056-004

Matrix: Soil
Date Collected: 05.29.19 14.20

Date Received: 05.31.19 11.31
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090847

Date Prep: 05.31.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4050	101	mg/kg	05.31.19 19.43		20

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.31.19 23.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	171	15.0	mg/kg	05.31.19 23.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	113	15.0	mg/kg	05.31.19 23.59		1
Total TPH	PHC635	284	15.0	mg/kg	05.31.19 23.59		1
Total GRO-DRO	PHC628	171	15.0	mg/kg	05.31.19 23.59		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.31.19 23.59	
o-Terphenyl	84-15-1	93	%	70-135	05.31.19 23.59	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH02**
Lab Sample Id: 626056-004

Matrix: Soil
Date Collected: 05.29.19 14.20

Date Received: 05.31.19 11.31
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090876

Prep Method: SW5030B

% Moisture:

Date Prep: 05.31.19 13.45

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 17.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 17.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 17.53	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.31.19 17.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 17.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 17.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 17.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	05.31.19 17.53		
1,4-Difluorobenzene	540-36-3	108	%	70-130	05.31.19 17.53		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH02A**
Lab Sample Id: 626056-005

Matrix: Soil
Date Collected: 05.29.19 14.25

Date Received: 05.31.19 11.31
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090847

Date Prep: 05.31.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3030	49.8	mg/kg	05.31.19 19.51		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	06.01.19 00.18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	06.01.19 00.18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9	mg/kg	06.01.19 00.18	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	06.01.19 00.18	U	1
Total GRO-DRO	PHC628	<14.9	14.9	mg/kg	06.01.19 00.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.01.19 00.18	
o-Terphenyl	84-15-1	93	%	70-135	06.01.19 00.18	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH02A**
Lab Sample Id: 626056-005

Matrix: Soil
Date Collected: 05.29.19 14.25

Date Received: 05.31.19 11.31
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.31.19 13.45

Basis: Wet Weight

Seq Number: 3090876

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 18.13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 18.13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 18.13	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	05.31.19 18.13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 18.13	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 18.13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 18.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	05.31.19 18.13		
4-Bromofluorobenzene	460-00-4	92	%	70-130	05.31.19 18.13		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH02B**
Lab Sample Id: 626056-006

Matrix: Soil
Date Collected: 05.29.19 14.30

Date Received: 05.31.19 11.31
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090882

Date Prep: 05.31.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8690	99.6	mg/kg	06.02.19 21.32		20

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.01.19 00.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.8	15.0	mg/kg	06.01.19 00.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.01.19 00.38	U	1
Total TPH	PHC635	19.8	15.0	mg/kg	06.01.19 00.38		1
Total GRO-DRO	PHC628	19.8	15.0	mg/kg	06.01.19 00.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.01.19 00.38	
o-Terphenyl	84-15-1	91	%	70-135	06.01.19 00.38	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH02B**
Lab Sample Id: 626056-006

Matrix: Soil
Date Collected: 05.29.19 14.30

Date Received: 05.31.19 11.31
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090876

Date Prep: 05.31.19 13.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.31.19 18.32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.31.19 18.32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.31.19 18.32	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.31.19 18.32	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.31.19 18.32	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.31.19 18.32	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.31.19 18.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	05.31.19 18.32		
1,4-Difluorobenzene	540-36-3	107	%	70-130	05.31.19 18.32		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH03**
Lab Sample Id: 626056-007

Matrix: Soil
Date Collected: 05.29.19 14.40

Date Received: 05.31.19 11.31
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090882

Date Prep: 05.31.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1430	50.0	mg/kg	06.02.19 21.37		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.01.19 00.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.01.19 00.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.01.19 00.57	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.01.19 00.57	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.01.19 00.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.01.19 00.57	
o-Terphenyl	84-15-1	93	%	70-135	06.01.19 00.57	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH03**
Lab Sample Id: 626056-007

Matrix: Soil
Date Collected: 05.29.19 14.40

Date Received: 05.31.19 11.31
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.31.19 13.45

Basis: Wet Weight

Seq Number: 3090876

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 18.51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 18.51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 18.51	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.31.19 18.51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 18.51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 18.51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 18.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	05.31.19 18.51		
1,4-Difluorobenzene	540-36-3	110	%	70-130	05.31.19 18.51		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH03A**
Lab Sample Id: 626056-008

Matrix: Soil
Date Collected: 05.29.19 14.45

Date Received: 05.31.19 11.31
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090882

Date Prep: 05.31.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2580	50.3	mg/kg	06.02.19 21.42		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.01.19 01.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.01.19 01.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.01.19 01.17	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.01.19 01.17	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.01.19 01.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	06.01.19 01.17	
o-Terphenyl	84-15-1	92	%	70-135	06.01.19 01.17	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH03A**
Lab Sample Id: 626056-008

Matrix: Soil
Date Collected: 05.29.19 14.45

Date Received: 05.31.19 11.31
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090876

Date Prep: 05.31.19 13.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	05.31.19 19.10	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	05.31.19 19.10	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	05.31.19 19.10	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	05.31.19 19.10	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	05.31.19 19.10	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	05.31.19 19.10	U	1
Total BTEX		<0.00201	0.00201	mg/kg	05.31.19 19.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	74	%	70-130	05.31.19 19.10		
1,4-Difluorobenzene	540-36-3	99	%	70-130	05.31.19 19.10		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH03B**
Lab Sample Id: 626056-009

Matrix: Soil
Date Collected: 05.29.19 14.50

Date Received: 05.31.19 11.31
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090882

Date Prep: 05.31.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4260	49.6	mg/kg	06.02.19 21.58		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.01.19 01.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.01.19 01.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.01.19 01.37	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.01.19 01.37	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.01.19 01.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	06.01.19 01.37	
o-Terphenyl	84-15-1	93	%	70-135	06.01.19 01.37	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH03B**
Lab Sample Id: 626056-009

Matrix: Soil
Date Collected: 05.29.19 14.50

Date Received: 05.31.19 11.31
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090876

Date Prep: 05.31.19 13.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 19.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 19.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 19.29	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	05.31.19 19.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 19.29	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 19.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 19.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	114	%	70-130	05.31.19 19.29		
4-Bromofluorobenzene	460-00-4	85	%	70-130	05.31.19 19.29		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH04**
Lab Sample Id: 626056-010

Matrix: Soil
Date Collected: 05.29.19 15.20

Date Received: 05.31.19 11.31
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090882

Date Prep: 05.31.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2610	50.5	mg/kg	06.02.19 22.03		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.01.19 01.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.01.19 01.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.01.19 01.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.01.19 01.56	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.01.19 01.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	06.01.19 01.56	
o-Terphenyl	84-15-1	92	%	70-135	06.01.19 01.56	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH04**
Lab Sample Id: 626056-010

Matrix: Soil
Date Collected: 05.29.19 15.20

Date Received: 05.31.19 11.31
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090876

Date Prep: 05.31.19 13.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	05.31.19 19.48	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	05.31.19 19.48	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	05.31.19 19.48	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	05.31.19 19.48	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	05.31.19 19.48	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	05.31.19 19.48	U	1
Total BTEX		<0.00202	0.00202	mg/kg	05.31.19 19.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	05.31.19 19.48		
4-Bromofluorobenzene	460-00-4	95	%	70-130	05.31.19 19.48		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH04A**
Lab Sample Id: 626056-011

Matrix: Soil
Date Collected: 05.29.19 15.25

Date Received: 05.31.19 11.31
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090882

Date Prep: 05.31.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1880	49.9	mg/kg	06.02.19 22.08		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.01.19 02.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.01.19 02.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.01.19 02.35	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.01.19 02.35	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.01.19 02.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	06.01.19 02.35	
o-Terphenyl	84-15-1	93	%	70-135	06.01.19 02.35	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH04A**
Lab Sample Id: 626056-011

Matrix: Soil
Date Collected: 05.29.19 15.25

Date Received: 05.31.19 11.31
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090876

Date Prep: 05.31.19 13.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.31.19 21.02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	05.31.19 21.02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	05.31.19 21.02	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	05.31.19 21.02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	05.31.19 21.02	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	05.31.19 21.02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	05.31.19 21.02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	100	%	70-130	05.31.19 21.02		
4-Bromofluorobenzene	460-00-4	98	%	70-130	05.31.19 21.02		



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH04B**
Lab Sample Id: 626056-012

Matrix: Soil
Date Collected: 05.29.19 15.30

Date Received: 05.31.19 11.31
Sample Depth: 3 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3090882

Date Prep: 05.31.19 17.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	796	50.2	mg/kg	06.02.19 22.13		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3090915

Date Prep: 05.31.19 16.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.01.19 02.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.01.19 02.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.01.19 02.55	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.01.19 02.55	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.01.19 02.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	06.01.19 02.55	
o-Terphenyl	84-15-1	92	%	70-135	06.01.19 02.55	



Certificate of Analytical Results 626056



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **PH04B**
Lab Sample Id: 626056-012

Matrix: Soil
Date Collected: 05.29.19 15.30

Date Received: 05.31.19 11.31
Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3090876

Date Prep: 05.31.19 13.45

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	05.31.19 21.21	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	05.31.19 21.21	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	05.31.19 21.21	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	05.31.19 21.21	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	05.31.19 21.21	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	05.31.19 21.21	U	1
Total BTEX		<0.00199	0.00199	mg/kg	05.31.19 21.21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	88	%	70-130	05.31.19 21.21		
1,4-Difluorobenzene	540-36-3	104	%	70-130	05.31.19 21.21		

- 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 626056

LT Environmental, Inc. Nash 3H

Analytical Method: Chloride by EPA 300

Seq Number: 3090847

MB Sample Id: 7679000-1-BLK

Matrix: Solid

LCS Sample Id: 7679000-1-BKS

Prep Method: E300P

Date Prep: 05.31.19

LCSD Sample Id: 7679000-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	234	94	234	94	90-110	0	20	mg/kg	05.31.19 16:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3090882

MB Sample Id: 7679005-1-BLK

Matrix: Solid

LCS Sample Id: 7679005-1-BKS

Prep Method: E300P

Date Prep: 05.31.19

LCSD Sample Id: 7679005-1-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	267	107	248	99	90-110	7	20	mg/kg	06.02.19 21:01	

Analytical Method: Chloride by EPA 300

Seq Number: 3090847

Parent Sample Id: 626062-001

Matrix: Soil

MS Sample Id: 626062-001 S

Prep Method: E300P

Date Prep: 05.31.19

MSD Sample Id: 626062-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	205	250	381	70	381	70	90-110	0	20	mg/kg	05.31.19 16:32	X

Analytical Method: Chloride by EPA 300

Seq Number: 3090847

Parent Sample Id: 626062-011

Matrix: Soil

MS Sample Id: 626062-011 S

Prep Method: E300P

Date Prep: 05.31.19

MSD Sample Id: 626062-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	226	250	417	76	418	77	90-110	0	20	mg/kg	05.31.19 18:24	X

Analytical Method: Chloride by EPA 300

Seq Number: 3090882

Parent Sample Id: 626041-001

Matrix: Soil

MS Sample Id: 626041-001 S

Prep Method: E300P

Date Prep: 05.31.19

MSD Sample Id: 626041-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	19.4	252	306	114	308	115	90-110	1	20	mg/kg	06.02.19 21:17	X

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 626056

LT Environmental, Inc.
Nash 3H

Analytical Method: Chloride by EPA 300

Seq Number: 3090882

Parent Sample Id: 626041-004

Matrix: Soil

MS Sample Id: 626041-004 S

Prep Method: E300P

Date Prep: 05.31.19

MSD Sample Id: 626041-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	310	124	311	124	90-110	0	20	mg/kg	06.02.19 22:29	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090915

MB Sample Id: 7679063-1-BLK

Matrix: Solid

LCS Sample Id: 7679063-1-BKS

Prep Method: TX1005P

Date Prep: 05.31.19

LCSD Sample Id: 7679063-1-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	1160	116	1190	119	70-135	3	20	mg/kg	05.31.19 21:42	
Diesel Range Organics (DRO)	9.40	1000	1130	113	1120	112	70-135	1	20	mg/kg	05.31.19 21:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		130		126		70-135	%	05.31.19 21:42
o-Terphenyl	99		129		117		70-135	%	05.31.19 21:42

Analytical Method: TPH by SW8015 Mod

Seq Number: 3090915

Parent Sample Id: 626056-001

Matrix: Soil

MS Sample Id: 626056-001 S

Prep Method: TX1005P

Date Prep: 05.31.19

MSD Sample Id: 626056-001 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)	<8.00	1000	1080	108	1080	108	70-135	0	20	mg/kg	05.31.19 22:40	
Diesel Range Organics (DRO)	9.91	1000	1010	100	1010	100	70-135	0	20	mg/kg	05.31.19 22:40	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		121		70-135	%	05.31.19 22:40
o-Terphenyl	112		116		70-135	%	05.31.19 22:40

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

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

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 626056

LT Environmental, Inc.

Nash 3H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090876

MB Sample Id: 7679047-1-BLK

Matrix: Solid

LCS Sample Id: 7679047-1-BKS

Prep Method: SW5030B

Date Prep: 05.31.19

LCSD Sample Id: 7679047-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000387	0.101	0.111	110	0.120	121	70-130	8	35	mg/kg	05.31.19 15:00	
Toluene	<0.000458	0.101	0.105	104	0.113	114	70-130	7	35	mg/kg	05.31.19 15:00	
Ethylbenzene	<0.000568	0.101	0.114	113	0.122	123	70-130	7	35	mg/kg	05.31.19 15:00	
m,p-Xylenes	<0.00102	0.201	0.237	118	0.254	128	70-130	7	35	mg/kg	05.31.19 15:00	
o-Xylene	<0.000346	0.101	0.114	113	0.123	124	70-130	8	35	mg/kg	05.31.19 15:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		107		109		70-130	%	05.31.19 15:00
4-Bromofluorobenzene	84		95		97		70-130	%	05.31.19 15:00

Analytical Method: BTEX by EPA 8021B

Seq Number: 3090876

Parent Sample Id: 626056-001

Matrix: Soil

MS Sample Id: 626056-001 S

Prep Method: SW5030B

Date Prep: 05.31.19

MSD Sample Id: 626056-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000661	0.101	0.0967	95	0.0918	92	70-130	5	35	mg/kg	05.31.19 15:39	
Toluene	0.000461	0.101	0.0902	89	0.0843	84	70-130	7	35	mg/kg	05.31.19 15:39	
Ethylbenzene	<0.000569	0.101	0.0955	95	0.0878	88	70-130	8	35	mg/kg	05.31.19 15:39	
m,p-Xylenes	<0.00102	0.202	0.197	98	0.180	90	70-130	9	35	mg/kg	05.31.19 15:39	
o-Xylene	0.000451	0.101	0.0948	93	0.0865	86	70-130	9	35	mg/kg	05.31.19 15:39	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		113		70-130	%	05.31.19 15:39
4-Bromofluorobenzene	100		93		70-130	%	05.31.19 15:39

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

Chain of Custody

Work Order No.

10/10/20

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)565-3443 Lubbock, TX (806)794-1296

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Page 1 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	Green@Ltenv.com

2020-2000) www.xenoco.com Page 7 of 2

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RC ☐ Superfund ☐

State of Project:

Reporting Level II ☐ Level III ☐ ST/UST ☐ RRP ☐ Level IV ☐

Deliverables: EDD ☐ ADAPT ☐ Other:

Project Name:		Nash 3H		Turn Around	
Project Number:				Routine ☐	
P.O. Number:		7RP-5339		Rush: Yes	
Sampler's Name:		Garrett Green		Due Date: 6/3/14	
SAMPLE RECEIPT		Temp Blank:		Yes ☒ No ☐	Wet Ice: Yes ☒ No ☐
Temperature (°C):		0.5 / 0.5		Thermometer: <i>See</i>	
Received intact:		Yes ☒ No ☐			
Cooler Custody Seals:		Yes ☐ No ☒ N/A		Correction Factor: <i>-0.2</i>	
Sample Custody Seals:		Yes ☐ No ☒ N/A		Total Containers:	
Number of Containers					
A 8015)					
PA 0=8021)					
(EPA 300.0)					
TAT starts the day received by the lab. if received by 4:30pm					
Work Order Notes					

[illegible][illegible]

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 		5/30/19 12:15	2		5/31/19 1/31
3			4		
5			6		

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) 794-1295
7375-392-7550 Phoenix AZ (480) 355-0000 Alhambra, CA (774) 440-0000

Work Order No: 104034

Hobbs NM (575-392-7550) Phoenix AZ (480-355 0900) Atlanta GA (770 440 0000) + F: (610 222 2222)

www.yenica.com

Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO
Address:	3300 North A Street	Address:	
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Midland, Tx 79705
Phone:	432.704.5178	Email:	Ggreen@ltenv.com

6/20/2000) www.xenmco.com Page 5 of 6

Work Order Comments

Program: UST/PST ☐ PAP ☐ Brownfields ☐ RC ☐ Superfund ☐

State of Project:

Reporting: Level II ☐ Level III ☐ PST/UST ☐ RRP ☐ Level IV ☐

Deliverables: EDD ☐ ADaPT ☐ Other: _____

Project Name:	Nash 3H	Turn Around
Project Number:		Routine ☐
P.O. Number:	2RP-5339	Rush: Yes
Sampler's Name:	Garrett Green	Due Date: 6/3/14

[illegible]

SAMPLE RECEIPT		Temp Blank:	Yes	No	Well Ice:	Yes	No
Temperature (°C):		US 1.5			Thermometer	17.2	
Received intact:		(Yes) No				12	
Cooler Custody Seals:		Yes (No) N/A			Correction Factor:	-0.2	
Sample Custody Seals:		Yes (No) N/A			Total Containers:		

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth
PH04A	S	05/29/14	1525	2'
PH04B	S	05/29/14	1530	3'

[illegible]

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed

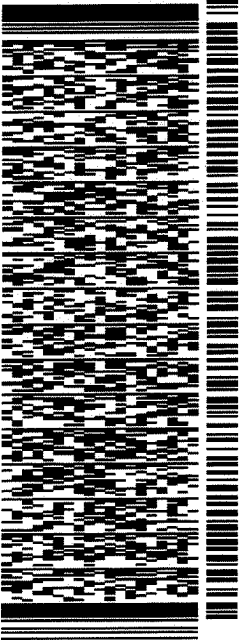
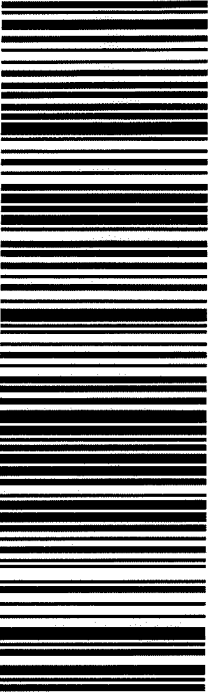
8RCRA 13PPM Texas 11 A| Sb As Ba Be B Cd Ca Cr Co Cu Ee Pb Mg Mn Ni K Sc Ar SiCl3 N- C- Ti C- H- V- Z-

TCLP / SPLP 6010: 3RCRA Sb As Ba Be Cd Cr Co Cu Ii Pb Mn Mo Ni Se Ag Ti H

1631 / 245.1 / 7470 / 7471: Ho

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 		5/30/19 12:15	2		5/31/19
3			4		1/31
5			6		

ORIGIN ID: CACA (281) 240-4200		SHIP DATE: 30MAY19	
SAMPLE CUSTODY		ACTWGT: 17.00 LB	
XENCO LABORATORIES NM		CAD: 114488676/NINET4100	
1089 N CANAL ST		DIMS: 13x9x9 IN	
CARLSBAD, NM 88220		BILL SENDER	
UNITED STATES US			
TO SAMPLE RECEIVING			
3600 S COUNTY ROAD 1276			
MIDLAND TX 79706			
REF: (432) 704-5440		DEPT:	
INV: PO:			
			
			
J151019010701ur			
TRK# 7753 5027 7636		FRI - 31 MAY HOLD	
0201		PRIORITY OVERNIGHT	
41 MAFA		HLD 79706	
TX-US		LBB	
			

565J1/D66C/23AD

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 05/31/2019 12:00:00 AM

Work Order #: 626056

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.3
#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?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#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:

Brianna Teel

Brianna Teel

Date: 05/31/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 05/31/2019

Analytical Report 626506

for
LT Environmental, Inc.

Project Manager: Ashley Ager

Nash 3H

06-JUN-19

Collected By: Client



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

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)



06-JUN-19

Project Manager: **Ashley Ager**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **626506**

Nash 3H

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) 626506. 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. 626506 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

Project Assistant

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

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



Sample Cross Reference 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS01	S	05-31-19 13:00	2 ft	626506-001
FS02	S	05-31-19 13:05	2 ft	626506-002
FS03	S	05-31-19 13:10	2 ft	626506-003
FS04	S	05-31-19 13:15	2 ft	626506-004
FS05	S	05-31-19 13:20	2 ft	626506-005
FS06	S	05-31-19 13:25	2 ft	626506-006
FS07	S	05-31-19 13:30	2 ft	626506-007
FS08	S	05-31-19 13:35	2 ft	626506-008
SW01	S	05-31-19 14:15	0 - 2 ft	626506-009



CASE NARRATIVE

Client Name: *LT Environmental, Inc.*

Project Name: *Nash 3H*

Project ID:
Work Order Number(s): 626506

Report Date: 06-JUN-19
Date Received: 06/05/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091375 BTEX by EPA 8021B

Lab Sample ID 626506-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 626506-001, -002, -003, -004, -005.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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

m,p-Xylenes Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 626506-001, -002, -003, -004, -005

Batch: LBA-3091385 BTEX by EPA 8021B

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



Certificate of Analysis Summary 626506

LT Environmental, Inc., Arvada, CO

Project Name: Nash 3H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-05-19 12:23 pm

Report Date: 06-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626506-001	626506-002	626506-003	626506-004	626506-005	626506-006
	Field Id:	FS01	FS02	FS03	FS04	FS05	FS06
	Depth:	2- ft	2- ft	2- ft	2- ft	2- ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-31-19 13:00	May-31-19 13:05	May-31-19 13:10	May-31-19 13:15	May-31-19 13:20	May-31-19 13:25
BTEX by EPA 8021B	Extracted:	*** **	*** **	*** **	*** **	*** **	Jun-05-19 16:00
	Analyzed:	Jun-06-19 03:22	Jun-06-19 03:41	Jun-06-19 04:00	Jun-06-19 04:19	Jun-06-19 04:38	Jun-06-19 08:04
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00403 0.00403	<0.00400 0.00400	<0.00402 0.00402	<0.00399 0.00399	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300	Extracted:	Jun-05-19 15:30	Jun-05-19 15:30	Jun-05-19 15:30	Jun-05-19 15:30	Jun-05-19 15:30	Jun-05-19 15:30
	Analyzed:	Jun-05-19 17:11	Jun-05-19 17:16	Jun-05-19 17:22	Jun-05-19 17:27	Jun-05-19 17:32	Jun-05-19 17:53
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3140 50.0	1830 50.4	1840 49.8	2020 50.2	2580 49.7	1730 49.7
TPH by SW8015 Mod	Extracted:	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00
	Analyzed:	Jun-05-19 18:45	Jun-05-19 19:59	Jun-05-19 20:23	Jun-05-19 20:48	Jun-05-19 21:12	Jun-05-19 21:36
	Units/RL:	mg/kg 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	<15.0 15.0
Diesel Range Organics (DRO)		55.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	23.4 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		55.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	23.4 15.0	<15.0 15.0
Total GRO-DRO		55.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	23.4 15.0	<15.0 15.0

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

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 626506

LT Environmental, Inc., Arvada, CO

Project Name: Nash 3H



Project Id:

Contact: Ashley Ager

Project Location: Delaware Basin

Date Received in Lab: Wed Jun-05-19 12:23 pm

Report Date: 06-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	626506-007	626506-008	626506-009			
	Field Id:	FS07	FS08	SW01			
	Depth:	2- ft	2- ft	0-2 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	May-31-19 13:30	May-31-19 13:35	May-31-19 14:15			
BTEX by EPA 8021B	Extracted:	Jun-05-19 16:00	Jun-05-19 16:00	Jun-05-19 16:00			
	Analyzed:	Jun-06-19 08:23	Jun-06-19 08:42	Jun-06-19 09:01			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199			
Toluene		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199			
Ethylbenzene		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199			
m,p-Xylenes		<0.00402 0.00402	<0.00398 0.00398	<0.00398 0.00398			
o-Xylene		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199			
Total Xylenes		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199			
Total BTEX		<0.00201 0.00201	<0.00199 0.00199	<0.00199 0.00199			
Chloride by EPA 300	Extracted:	Jun-05-19 15:30	Jun-05-19 15:30	Jun-05-19 15:30			
	Analyzed:	Jun-05-19 17:58	Jun-05-19 18:14	Jun-05-19 18:19			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		188 50.3	1110 50.0	4010 99.4			
TPH by SW8015 Mod	Extracted:	Jun-05-19 14:00	Jun-05-19 14:00	Jun-05-19 14:00			
	Analyzed:	Jun-05-19 22:01	Jun-05-19 22:25	Jun-05-19 22:49			
	Units/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			
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total GRO-DRO		<15.0 15.0	<15.0 15.0	<15.0 15.0			

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

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Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS01**
Lab Sample Id: 626506-001

Matrix: Soil
Date Collected: 05.31.19 13.00

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3140	50.0	mg/kg	06.05.19 17.11		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 18.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	55.8	15.0	mg/kg	06.05.19 18.45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 18.45	U	1
Total TPH	PHC635	55.8	15.0	mg/kg	06.05.19 18.45		1
Total GRO-DRO	PHC628	55.8	15.0	mg/kg	06.05.19 18.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	06.05.19 18.45	
o-Terphenyl	84-15-1	91	%	70-135	06.05.19 18.45	



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS01**
Lab Sample Id: 626506-001

Matrix: Soil
Date Collected: 05.31.19 13.00

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 12.00

Basis: Wet Weight

Seq Number: 3091375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	06.06.19 03.22	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	06.06.19 03.22	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	06.06.19 03.22	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	06.06.19 03.22	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	06.06.19 03.22	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	06.06.19 03.22	U	1
Total BTEX		<0.00202	0.00202	mg/kg	06.06.19 03.22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	06.06.19 03.22		
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.06.19 03.22		



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS02**
Lab Sample Id: 626506-002

Matrix: Soil
Date Collected: 05.31.19 13.05

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1830	50.4	mg/kg	06.05.19 17.16		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 19.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 19.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 19.59	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 19.59	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 19.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	06.05.19 19.59	
o-Terphenyl	84-15-1	86	%	70-135	06.05.19 19.59	



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS02**
Lab Sample Id: 626506-002

Matrix: Soil
Date Collected: 05.31.19 13.05

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091375

Date Prep: 06.05.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 03.41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.06.19 03.41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.06.19 03.41	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	06.06.19 03.41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.06.19 03.41	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.06.19 03.41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.06.19 03.41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.06.19 03.41		
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.06.19 03.41		



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS03** Matrix: Soil Date Received: 06.05.19 12.23
Lab Sample Id: 626506-003 Date Collected: 05.31.19 13.10 Sample Depth: 2 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 06.05.19 15.30 Basis: Wet Weight
Seq Number: 3091335

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1840	49.8	mg/kg	06.05.19 17.22		10

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 06.05.19 14.00 Basis: Wet Weight
Seq Number: 3091362

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 20.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 20.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 20.23	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 20.23	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 20.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.05.19 20.23	
o-Terphenyl	84-15-1	90	%	70-135	06.05.19 20.23	



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS03**
Lab Sample Id: 626506-003

Matrix: Soil
Date Collected: 05.31.19 13.10

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091375

Date Prep: 06.05.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.06.19 04.00	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.06.19 04.00	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.06.19 04.00	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.06.19 04.00	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.06.19 04.00	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.06.19 04.00	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.06.19 04.00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.06.19 04.00		
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.06.19 04.00		



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS04**
Lab Sample Id: 626506-004

Matrix: Soil
Date Collected: 05.31.19 13.15

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2020	50.2	mg/kg	06.05.19 17.27		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 20.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 20.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 20.48	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 20.48	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 20.48	U	1

Surrogate

1-Chlorooctane

o-Terphenyl

Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
111-85-3	98	%	70-135	06.05.19 20.48	
84-15-1	92	%	70-135	06.05.19 20.48	



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS04**
Lab Sample Id: 626506-004

Matrix: Soil
Date Collected: 05.31.19 13.15

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091375

Date Prep: 06.05.19 12.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 04.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.06.19 04.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.06.19 04.19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.06.19 04.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.06.19 04.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.06.19 04.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.06.19 04.19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.06.19 04.19		
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.06.19 04.19		



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS05**
Lab Sample Id: 626506-005

Matrix: Soil
Date Collected: 05.31.19 13.20

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2580	49.7	mg/kg	06.05.19 17.32		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 21.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.4	15.0	mg/kg	06.05.19 21.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 21.12	U	1
Total TPH	PHC635	23.4	15.0	mg/kg	06.05.19 21.12		1
Total GRO-DRO	PHC628	23.4	15.0	mg/kg	06.05.19 21.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.05.19 21.12	
o-Terphenyl	84-15-1	88	%	70-135	06.05.19 21.12	



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS05**
Lab Sample Id: 626506-005

Matrix: Soil
Date Collected: 05.31.19 13.20

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 12.00

Basis: Wet Weight

Seq Number: 3091375

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.06.19 04.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.06.19 04.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.06.19 04.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.06.19 04.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.06.19 04.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.06.19 04.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.06.19 04.38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.06.19 04.38		
1,4-Difluorobenzene	540-36-3	102	%	70-130	06.06.19 04.38		



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS06**
Lab Sample Id: 626506-006

Matrix: Soil
Date Collected: 05.31.19 13.25

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1730	49.7	mg/kg	06.05.19 17.53		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 21.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 21.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 21.36	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 21.36	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 21.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.05.19 21.36	
o-Terphenyl	84-15-1	90	%	70-135	06.05.19 21.36	



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS06**
Lab Sample Id: 626506-006

Matrix: Soil
Date Collected: 05.31.19 13.25

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Prep Method: SW5030B

% Moisture:

Date Prep: 06.05.19 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	06.06.19 08.04	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	06.06.19 08.04	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	06.06.19 08.04	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	06.06.19 08.04	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	06.06.19 08.04	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	06.06.19 08.04	U	1
Total BTEX		<0.00200	0.00200	mg/kg	06.06.19 08.04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	103	%	70-130	06.06.19 08.04		
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.06.19 08.04		



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS07**
Lab Sample Id: 626506-007

Matrix: Soil
Date Collected: 05.31.19 13.30

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	188	50.3	mg/kg	06.05.19 17.58		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 22.01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 22.01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 22.01	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 22.01	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 22.01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.05.19 22.01	
o-Terphenyl	84-15-1	90	%	70-135	06.05.19 22.01	



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS07**
Lab Sample Id: 626506-007

Matrix: Soil
Date Collected: 05.31.19 13.30

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 16.00

Basis: Wet Weight

Seq Number: 3091385

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	06.06.19 08.23	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	06.06.19 08.23	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	06.06.19 08.23	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	06.06.19 08.23	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	06.06.19 08.23	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	06.06.19 08.23	U	1
Total BTEX		<0.00201	0.00201	mg/kg	06.06.19 08.23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	91	%	70-130	06.06.19 08.23		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.06.19 08.23		



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS08**
Lab Sample Id: 626506-008

Matrix: Soil
Date Collected: 05.31.19 13.35

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1110	50.0	mg/kg	06.05.19 18.14		10

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 22.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 22.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 22.25	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 22.25	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 22.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.05.19 22.25	
o-Terphenyl	84-15-1	89	%	70-135	06.05.19 22.25	



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **FS08**
Lab Sample Id: 626506-008

Matrix: Soil
Date Collected: 05.31.19 13.35

Date Received: 06.05.19 12.23
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 06.05.19 16.00

Basis: Wet Weight

Seq Number: 3091385

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.06.19 08.42	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.06.19 08.42	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.06.19 08.42	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.06.19 08.42	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.06.19 08.42	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.06.19 08.42	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.06.19 08.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.06.19 08.42		
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.06.19 08.42		



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **SW01**
Lab Sample Id: 626506-009

Matrix: Soil
Date Collected: 05.31.19 14.15

Date Received: 06.05.19 12.23
Sample Depth: 0 - 2 ft

Analytical Method: Chloride by EPA 300

Tech: CHE

Analyst: CHE

Seq Number: 3091335

Date Prep: 06.05.19 15.30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4010	99.4	mg/kg	06.05.19 18.19		20

Analytical Method: TPH by SW8015 Mod

Tech: ARM

Analyst: ARM

Seq Number: 3091362

Date Prep: 06.05.19 14.00

Prep Method: TX1005P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	06.05.19 22.49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	06.05.19 22.49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	06.05.19 22.49	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	06.05.19 22.49	U	1
Total GRO-DRO	PHC628	<15.0	15.0	mg/kg	06.05.19 22.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	06.05.19 22.49	
o-Terphenyl	84-15-1	99	%	70-135	06.05.19 22.49	



Certificate of Analytical Results 626506



LT Environmental, Inc., Arvada, CO

Nash 3H

Sample Id: **SW01**
Lab Sample Id: 626506-009

Matrix: Soil
Date Collected: 05.31.19 14.15

Date Received: 06.05.19 12.23
Sample Depth: 0 - 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: SCM

Analyst: SCM

Seq Number: 3091385

Date Prep: 06.05.19 16.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	06.06.19 09.01	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	06.06.19 09.01	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	06.06.19 09.01	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	06.06.19 09.01	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	06.06.19 09.01	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	06.06.19 09.01	U	1
Total BTEX		<0.00199	0.00199	mg/kg	06.06.19 09.01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	06.06.19 09.01		
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.06.19 09.01		

- 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 626506

LT Environmental, Inc.
Nash 3H

Analytical Method: Chloride by EPA 300

Seq Number: 3091335

MB Sample Id: 7679323-1-BLK

Matrix: Solid

LCS Sample Id: 7679323-1-BKS

Prep Method: E300P

Date Prep: 06.05.19

LCSD Sample Id: 7679323-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	241	96	241	96	90-110	0	20	mg/kg	06.05.19 16:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3091335

Parent Sample Id: 626504-004

Matrix: Soil

MS Sample Id: 626504-004 S

Prep Method: E300P

Date Prep: 06.05.19

MSD Sample Id: 626504-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	107	261	403	113	381	105	90-110	6	20	mg/kg	06.05.19 16:29	X

Analytical Method: Chloride by EPA 300

Seq Number: 3091335

Parent Sample Id: 626508-001

Matrix: Soil

MS Sample Id: 626508-001 S

Prep Method: E300P

Date Prep: 06.05.19

MSD Sample Id: 626508-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	229	250	480	100	489	104	90-110	2	20	mg/kg	06.05.19 17:43	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091362

MB Sample Id: 7679343-1-BLK

Matrix: Solid

LCS Sample Id: 7679343-1-BKS

Prep Method: TX1005P

Date Prep: 06.05.19

LCSD Sample Id: 7679343-1-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	999	100	974	97	70-135	3	20	mg/kg	06.05.19 17:56	
Diesel Range Organics (DRO)	<8.13	1000	990	99	975	98	70-135	2	20	mg/kg	06.05.19 17:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		104		102		70-135	%	06.05.19 17:56
o-Terphenyl	72		103		104		70-135	%	06.05.19 17:56

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 626506

LT Environmental, Inc. Nash 3H

Analytical Method: TPH by SW8015 Mod

Seq Number: 3091362

Parent Sample Id: 626506-001

Matrix: Soil

MS Sample Id: 626506-001 S

Prep Method: TX1005P

Date Prep: 06.05.19

MSD Sample Id: 626506-001 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)	10.9	999	922	91	1010	100	70-135	9	20	mg/kg	06.05.19 19:10	
Diesel Range Organics (DRO)	55.8	999	964	91	1040	99	70-135	8	20	mg/kg	06.05.19 19:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	89		95		70-135	%	06.05.19 19:10
o-Terphenyl	93		96		70-135	%	06.05.19 19:10

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091375

MB Sample Id: 7679290-1-BLK

Matrix: Solid

LCS Sample Id: 7679290-1-BKS

Prep Method: SW5030B

Date Prep: 06.05.19

LCSD Sample Id: 7679290-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0973	97	0.105	105	70-130	8	35	mg/kg	06.05.19 20:25	
Toluene	<0.000456	0.100	0.0950	95	0.102	102	70-130	7	35	mg/kg	06.05.19 20:25	
Ethylbenzene	<0.000565	0.100	0.105	105	0.111	111	70-130	6	35	mg/kg	06.05.19 20:25	
m,p-Xylenes	<0.00101	0.200	0.212	106	0.227	114	70-130	7	35	mg/kg	06.05.19 20:25	
o-Xylene	<0.000344	0.100	0.103	103	0.112	112	70-130	8	35	mg/kg	06.05.19 20:25	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		98		103		70-130	%	06.05.19 20:25
4-Bromofluorobenzene	84		96		105		70-130	%	06.05.19 20:25

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091385

MB Sample Id: 7679296-1-BLK

Matrix: Solid

LCS Sample Id: 7679296-1-BKS

Prep Method: SW5030B

Date Prep: 06.05.19

LCSD Sample Id: 7679296-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0994	0.108	109	0.114	114	70-130	5	35	mg/kg	06.06.19 06:12	
Toluene	<0.000453	0.0994	0.105	106	0.110	110	70-130	5	35	mg/kg	06.06.19 06:12	
Ethylbenzene	<0.000561	0.0994	0.114	115	0.118	118	70-130	3	35	mg/kg	06.06.19 06:12	
m,p-Xylenes	<0.00101	0.199	0.230	116	0.239	120	70-130	4	35	mg/kg	06.06.19 06:12	
o-Xylene	<0.000342	0.0994	0.113	114	0.119	119	70-130	5	35	mg/kg	06.06.19 06:12	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		99		101		70-130	%	06.06.19 06:12
4-Bromofluorobenzene	83		98		104		70-130	%	06.06.19 06:12

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

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

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 626506

LT Environmental, Inc.
Nash 3H

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091375

Parent Sample Id: 626506-001

Matrix: Soil

MS Sample Id: 626506-001 S

Prep Method: SW5030B

Date Prep: 06.05.19

MSD Sample Id: 626506-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000386	0.100	0.0931	93	0.0749	75	70-130	22	35	mg/kg	06.05.19 21:03	
Toluene	<0.000457	0.100	0.0906	91	0.0688	69	70-130	27	35	mg/kg	06.05.19 21:03	X
Ethylbenzene	<0.000566	0.100	0.0966	97	0.0677	68	70-130	35	35	mg/kg	06.05.19 21:03	X
m,p-Xylenes	<0.00102	0.200	0.196	98	0.135	68	70-130	37	35	mg/kg	06.05.19 21:03	XF
o-Xylene	0.000454	0.100	0.0962	96	0.0678	68	70-130	35	35	mg/kg	06.05.19 21:03	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		102		70-130	%	06.05.19 21:03
4-Bromofluorobenzene	106		104		70-130	%	06.05.19 21:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3091385

Parent Sample Id: 626508-006

Matrix: Soil

MS Sample Id: 626508-006 S

Prep Method: SW5030B

Date Prep: 06.05.19

MSD Sample Id: 626508-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000460	0.0998	0.117	117	0.120	118	70-130	3	35	mg/kg	06.06.19 06:50	
Toluene	<0.000455	0.0998	0.111	111	0.114	113	70-130	3	35	mg/kg	06.06.19 06:50	
Ethylbenzene	0.000960	0.0998	0.114	113	0.116	114	70-130	2	35	mg/kg	06.06.19 06:50	
m,p-Xylenes	0.00103	0.200	0.236	117	0.242	120	70-130	3	35	mg/kg	06.06.19 06:50	
o-Xylene	0.000860	0.0998	0.118	117	0.120	118	70-130	2	35	mg/kg	06.06.19 06:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		103		70-130	%	06.06.19 06:50
4-Bromofluorobenzene	106		108		70-130	%	06.06.19 06:50

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

Work Order No: 102656

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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Page 1 of 1

Project Manager:	Ashley Ager	Bill to: (if different)	Kyle L. Hrell
Company Name:	LT Environmental Inc	Company Name:	XTO - Energy
Address:	3306 North A Street	Address:	3104 E. Greene Street
City, State ZIP:	Midland TX 79705	City, State ZIP:	Carlsbad NM 88220
Phone:	432 704 5178	Email:	ager@ltenv.com rmafee@ltenv.com

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

Project Name:	NASH 3H	Turn Around		ANALYSIS REQUEST										Work Order Notes	
Project Number:		Routine ☐													
P.O. Number:		Rush: 3 day													
Sampler's Name:	Robert M.	Due Date: 06/05/19													
SAMPLE RECEIPT		Temp Blank: ☒ Yes ☐ No	Wet Ice: ☐ Yes ☒ No												
Temperature (°C):	0.6°C	Thermometer													
Received Intact:	Yes ☒ No ☐	Correction Factor:													
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:													
Sample Custody Seals:	Yes ☒ No ☐ N/A														
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers										Sample Comments
FS01	S	05/31/19	1300	2'	TPH (EPA 8015)										TAT starts the day received by the lab, if received by 4:30pm
FS02			1305		BTEX (EPA 0-8021)										
FS03			1310		Chloride (EPA 300.0)										
FS04			1315												
FS05			1320												
FS06			1325												
FS07			1330												
FS08			1335												
SW01			1415	0-2'											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 Ti 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 Ti 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
<u>[Signature]</u>	<u>[Signature]</u>	06/04/2019 11:40	<u>[Signature]</u>	<u>[Signature]</u>	06/04/2019 11:55

ORIGIN ID:CAOA (281) 240-4200
 SAMPLE CUSTODY
 XENCO LABORATORIES NM
 1089 N CANAL ST
 CARLSBAD, NM 88220
 UNITED STATES US

SHIP DATE: 04JUN19
 ACTWGT: 57.00 LB
 CAD: 114488676INET4100
 DIMS: 13x9x9 IN
 BILL SENDER

TO **SAMPLE RECEIVING**

3600 S COUNTY ROAD 1276

MIDLAND TX 79706

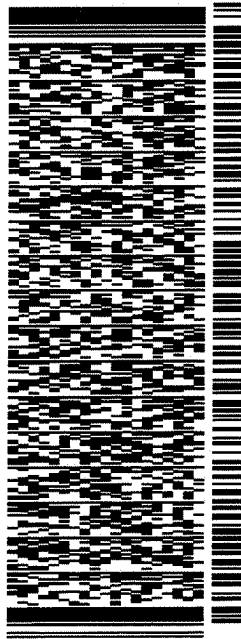
REF: (432) 704-5440

REF:

PO:

DEPT:

565J1/D210/23AD



TRK# 7753 8676 8923
 0201

WED - 05 JUN HOLD

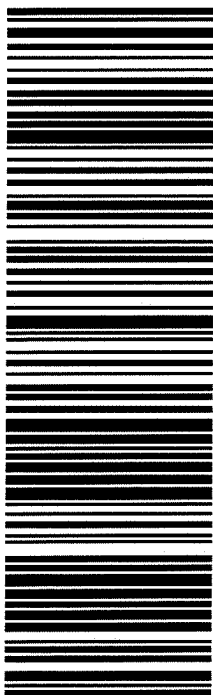
PRIORITY OVERNIGHT

HLD

79706

TX-US LBB

41 MAFA



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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/05/2019 12:23:00 PM

Work Order #: 626506

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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

Brianna Teel

Brianna Teel

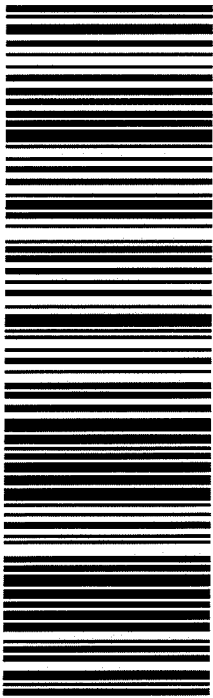
Date: 06/05/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/05/2019

ORIGIN ID:CAOA (281) 240-4200 SAMPLE CUSTODY XENCO LABORATORIES NM 1089 N CANAL ST CARLSBAD, NM 88220 UNITED STATES US		SHIP DATE: 04JUN19 ACTWGT: 57.00 LB CAD: 114488676/NET4100 DIMS: 13x9x9 IN BILL SENDER	
TO SAMPLE RECEIVING			
3600 S COUNTY ROAD 1276 MIDLAND TX 79706 REF: (432) 704-5440 INV: PO: DEPT:			
565J1/D210/23AD			
TRK# 7753 8676 8923 0201		WED - 05 JUN HOLD PRIORITY OVERNIGHT HLD 79706 TX-US LBB	
41 MAFA			
			

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: LT Environmental, Inc.

Date/ Time Received: 06/05/2019 12:23:00 PM

Work Order #: 626507

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.4
#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?	N/A
#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)?	N/A
#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: BT

PH Device/Lot#: A032690

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/05/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/05/2019





LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH02 PH01

Date:

05/29/19

Project Name:

Nash 3 H

RP Number:

2RP5339

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

LTS/PJD

Logged By: GG

Method:

Hole Diameter:

Total Depth:

3'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1400	D-M 2924		N	1	1			caliche, white - tan w gravel med plasticity
1405	M 2924		N	2	2			caliche w/gravel - white - tan med plasticity
1410	M 3347		N	3	3			caliche w/gravel white - tan w some yellow, med plasticity
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH03 PH02

Date:

05/29/2018

Project Name:

Nash 3H

RP Number:

ZRP5339

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

CTS/PID

Logged By: GG

Method: EX

Hole Diameter:

Total Depth: 3'

Comments:

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
					0			
1420 D	241341		N	1	1			caliche w/silt, brown-tan Low plasticity
1425 D	241341		N	2	2			Caliche w/silt, brown-tan low plasticity
1430 M	24134		N	3	3			caliche w/silt, brown-tan low plasticity
					4			
					5			
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH04 PH03

Date:

05/29/2019

Project Name:

Nash 3H

RP Number:

2RP-5339

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

CTS/PID

Logged By: GG

Method: Ex

Hole Diameter:

Total Depth: 3'

Comments:

1440

1445

1450

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
dry	3,105		N	1	0	1'	S	Caliche tan-brown low-mod consolidated
				2	1			trace brown sand PG
dry	4,134		N			2'	S	Caliche tan-brown low-mod consolidated
					2			trace brown sand PG
M	2,924		N	3		3'	S	Caliche tan-brown low-mod consolidated
					3			trace brown sand PG
					4			Dolomite found at 3', green
					5			mod-well consolidated
					6			
					7			
					8			
					9			
					10			
					11			
					12			



LT Environmental, Inc.
508 West Stevens Street
Carlsbad, New Mexico 88220

Compliance · Engineering · Remediation

Identifier:

PH05 PH04

Date:

05/29/19

Project Name:

Nash 3H

RP Number:

ZRP 5339

LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

CTS/PID

Logged By: GG

Method: EX

Hole Diameter:

Total Depth:

3'

Comments:

1520

JG

3347

N

0

1'

S

Caliche white-tan low-mod consolidated
trace Brownsand PG

1

1525

M

3347

N

2

2'

S

Caliche White-tan Low-mod consolidated
trace Brown sand PG

1530

M

1715

N

3

3'

S
R

Caliche/Dolomite Green-tan
Mod-well consolidated

4

5

6

7

8

9

10

11

12





View facing north of the excavation.

Project: 012919056	XTO Energy, Inc. Nash Unit 003H	 <i>Advancing Opportunity</i>
May 31, 2019	Photographic Log	



View facing south of the excavation.

Project: 012919056	XTO Energy, Inc. Nash Unit 003H	 Advancing Opportunity
May 31, 2019	Photographic Log	



View facing west of the excavation and lake in the background.

Project: 012919056	XTO Energy, Inc. Nash Unit 003H	 <i>Advancing Opportunity</i>
May 31, 2019	Photographic Log	