



LT Environmental, Inc.

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Building 1, Unit 222
Midland, Texas 79705
432.704.5178

September 23, 2020

District 2
New Mexico Oil Conservation Division
811 South First Street
Artesia, New Mexico 88210

**RE: Variance and Closure Request Addendum
WPX Energy Permian, LLC
LVP SWD 1
LVP Gathering System Release
Incident ID NRM2008555443
Eddy County, New Mexico**

To Whom It May Concern:

LT Environmental, Inc. (LTE), on behalf of WPX Energy Permian, LLC (WPX), presents the following Closure Request detailing excavation and soil sampling activities at the LVP Gathering System associated with the LVP SWD 1 (Site) in Unit A, Section 1, Township 23 South, Range 28 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to address impacts to soil following an event that resulted in the release of produced water.

On August 4, 2020, WPX was notified of the denial associated with an original Variance and Closure Request that was received by the New Mexico Oil Conservation Division (NMOCD) on May 27, 2020. The NMOCD required additional subsurface investigation to vertically delineate impacts identified in a shallow caliche layer. WPX and LTE have included additional data to support a deeper depth to water determination and the concerns regarding the investigation of the consolidated caliche layer at the Site. Based on field observations, field screening, and final laboratory analytical results from soil sampling activities, WPX is submitting this Variance and Closure Request Addendum in an effort to forbear from disturbing a caliche formation barrier that is impractical to excavate and if forcibly fractured, could become a conduit to deeper subsurface impacts.

REVISIONS

The revised report addresses the following updates:

- Depth to water was initially determined to be less than 50 feet below ground surface (bgs) based on a water well approximately 1.9 miles away. LTE researched the latest well record data surrounding the Site and found a nearby well indicating depth to water is greater than 50 feet bgs, approximately 0.66 miles west of the Site. A New Mexico Office of State Engineers well record and log are included in the report.



- LTE conducted core drilling activities onsite to further investigate the shallow consolidated underlying caliche layer. Field core drilling activities concluded the consolidated caliche layer is 5.5 feet to 6 feet thick with an underlying silty sand layer. One soil sample (CH01) was collected from 7 feet below bgs at the lithologic change and where the lowest field screening results were observed. Laboratory analytical results of soil sample CH01 indicate compliance with the Closure Criteria and demonstrates evidence that the remaining impacts have not migrated to underlying soils beneath the caliche layer or to potential groundwater. A detailed lithologic log and laboratory analytical data are included in this addendum.
- This Variance and Closure Request Addendum only includes field summaries relevant to fulfilling the conditions issued by the NMOCD on August 4, 2020. All previous data can be referenced in the original report.

BACKGROUND

On March 12, 2020, a third-party contractor caused damage to the gathering system, which resulted in the release of approximately 175 barrels (bbl) of produced water to adjacent Right-of-Way (ROW), lease road, and dry wash to the south. Approximately 30 bbl of produced water were recovered via a vacuum truck. WPX reported the release to the NMOCD on a Release Notification and Corrective Action Form C-141 (Form C-141), which was received by the NMOCD on March 30, 2020 and was assigned Incident ID NRM2008555443. An updated Form C-141 is provided as Attachment 1.

SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). In the original report, LTE used available data and determined depth to groundwater to be less than 50 feet. However, additional data consisting of one recently drilled water well has since been identified. Depth to groundwater at the Site is now estimated to be greater than 50 feet bgs based on nearby well drilling activities and records showing the well was drilled to greater than 50 feet with no water being encountered. The well is located 0.66 miles west of the Site and a New Mexico Office of State Engineers well record and log are included in Attachment 2. The closest significant watercourse to the Site is an unnamed intermittent stream located approximately 10 feet west of the Site. The Site is greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland and greater than 1,000 feet to a freshwater well or spring. The Site is not within a 100-year floodplain or overlying a subsurface mine or unstable area. The Site is located in a medium-potential karst area. Potential receptors identified during site characterization are displayed in Figure 2.



Based on these criteria, the following NMOCD Table 1 closure criteria apply:

- 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.

CORE DRILLING INVESTIGATION ACTIVITIES

On September 8, 2020, LTE performed field core drilling activities onsite to further investigate a well cemented, highly consolidated caliche layer to meet the NMOCD conditions provided on August 4, 2020. LTE utilized a Shaw Tool, Ltd Portable Core Drill to install one corehole (CH01) in the area associated with refusal documented at 1.5 feet bgs to investigate lithology and thickness of the caliche shelf and confirm impacts did not permeate through the caliche layer into underlying soils. The soil samples from the core hole were field screened, at minimum, from every 2-foot interval for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector and Hach® chloride QuanTab® test strips.

Based on results from the core drill sampling, the thickness of the caliche layer was determined to be approximately 5.5 feet to 6 feet with an underlying silty sand layer observed at approximately 6.5 feet to 7 feet bgs. One soil sample was collected from the depth interval indicating the lithologic change (7 feet bgs) and the lowest field screening result. The soil sample was placed directly into a pre-cleaned glass jar, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil sample was shipped at or below 4 degrees Celsius (°C), under strict chain-of-custody (COC) procedures, to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States EPA Method 8021B; TPH following EPA Method 8015M/D; and chloride following EPA Method 300.0. Field screening results and observations for the corehole were recorded on a lithologic/soil sampling log and is presented in Attachment 5. The corehole soil sample location is presented on Figure 4. Photographic documentation from core drilling activities is included in Attachment 3.

Laboratory analytical results from soil sample CH01 indicate compliance with the Closure Criteria and demonstrates evidence that the remaining impacts have not migrated to underlying soils beneath the caliche layer. The final laboratory analytical report is included in Attachment 4.

VARIANCE AND CLOSURE REQUEST

As documented in the original report, remediation of impacted soils associated with the subject release was successfully achieved to the vertical extent possible. All unconsolidated impacted soil was removed from the spill area until either field screening indicated compliance with Closure



Criteria or refusal at the caliche was encountered, whichever came first. This included excavation of more than 2,400 cubic yards of soil.

Based on the additional data collected from the core hole as described in this addendum, WPX requests a variance to leave the elevated chloride concentrations in place at the top of the caliche. The variance is equally protective of public health and environment for the following reasons:

- The remaining chloride concentrations in the documented refusal area at 1.5 feet bgs range from 688 mg/kg in soil sample FS12 to 7,080 mg/kg in soil sample FS29. Depth to groundwater is greater than 50 feet deep. The chloride concentrations meet Table 1 Closure Criteria applicable for a depth to water of greater than 50 feet bgs.
- Lithologic observations and laboratory analytical results from the soil sample collected from the silty sand below the caliche formation confirmed that the impermeable properties of the maturely cemented caliche formation have acted as a barrier to vertical migration of remaining chloride impacts to potential subsurface groundwater. Due to the impermeable nature of the observed caliche, it is likely the formation will continue to restrict downward migration of residual chloride concentrations.
- Although there is a medium karst designation at this Site, the remaining chloride concentrations exist in a shallow, well-indurated caliche with no karst features (voids) observed during sampling (see photos 13 and 19). Below the caliche, a silty sand was observed, which does not and is unlikely to ever undergo dissolution. The absence of karst features and a soluble host rock suggests the shallow subsurface is not affected by karst. Therefore, Table 1 Closure Criteria defined by a depth to water of greater than 50 feet is appropriate for the impacts identified at this Site as they relate to potential karst features.
- The chloride concentrations will not affect surface receptors because surface soil has been removed and replaced. Additionally, the excavation associated with the utility ROW was backfilled and tightly compacted with topsoil to ground surface. Stormwater protection is also in place to maintain erosion control until vegetation in the subject release area is established. Expected revegetation of low brush and sparse mesquite in the root zone will stabilize the topsoil and eliminate potential erosion and exposure of the caliche. Brush and mesquite root are unlikely to extend into the compact caliche material and will add a degree of stability to the soil. Should the caliche ever be exposed by erosion, it will require significantly more water volume to remove any remaining chloride concentrations from the tightly grained formation.
- Removal of the indurated caliche will require significant heavy equipment and is not a practical means of remediation. LTE and WPX argue that the potential consequences that could arise from utilizing advanced equipment to investigate or remove remaining chloride impacts by fracturing the caliche formation barrier and forming a potential conduit to the subsurface could be greater than leaving the impacts in place.



As such, WPX requests no further action. Since remediation events, the remaining excavations associated with the road and dry wash have been backfilled with locally sourced materials and recontoured to match pre-existing conditions. Additionally, the area in pasture will be seeded with a BLM-approved seed mix during favorable germination conditions to promote regrowth of vegetation.

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

Sincerely,

LT ENVIRONMENTAL, INC.

Joseph S. Hernandez
Project Geologist

Ashley L. Ager, M.S., P.G.
Senior Geologist

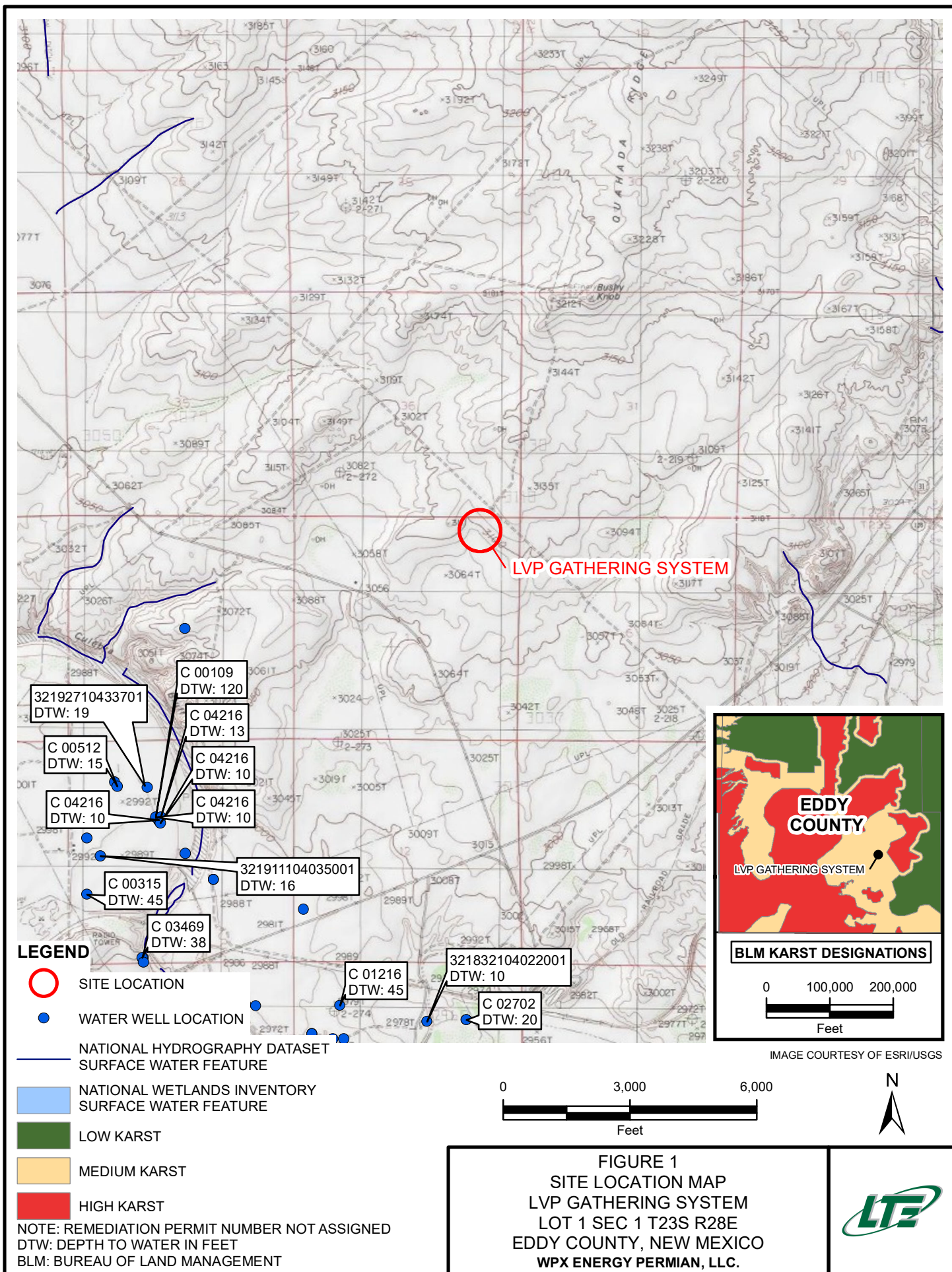
cc: Jim Raley, WPX
Robert Hamlet, NMOCD
Victoria Venegas, NMOCD
Bureau of Land Management

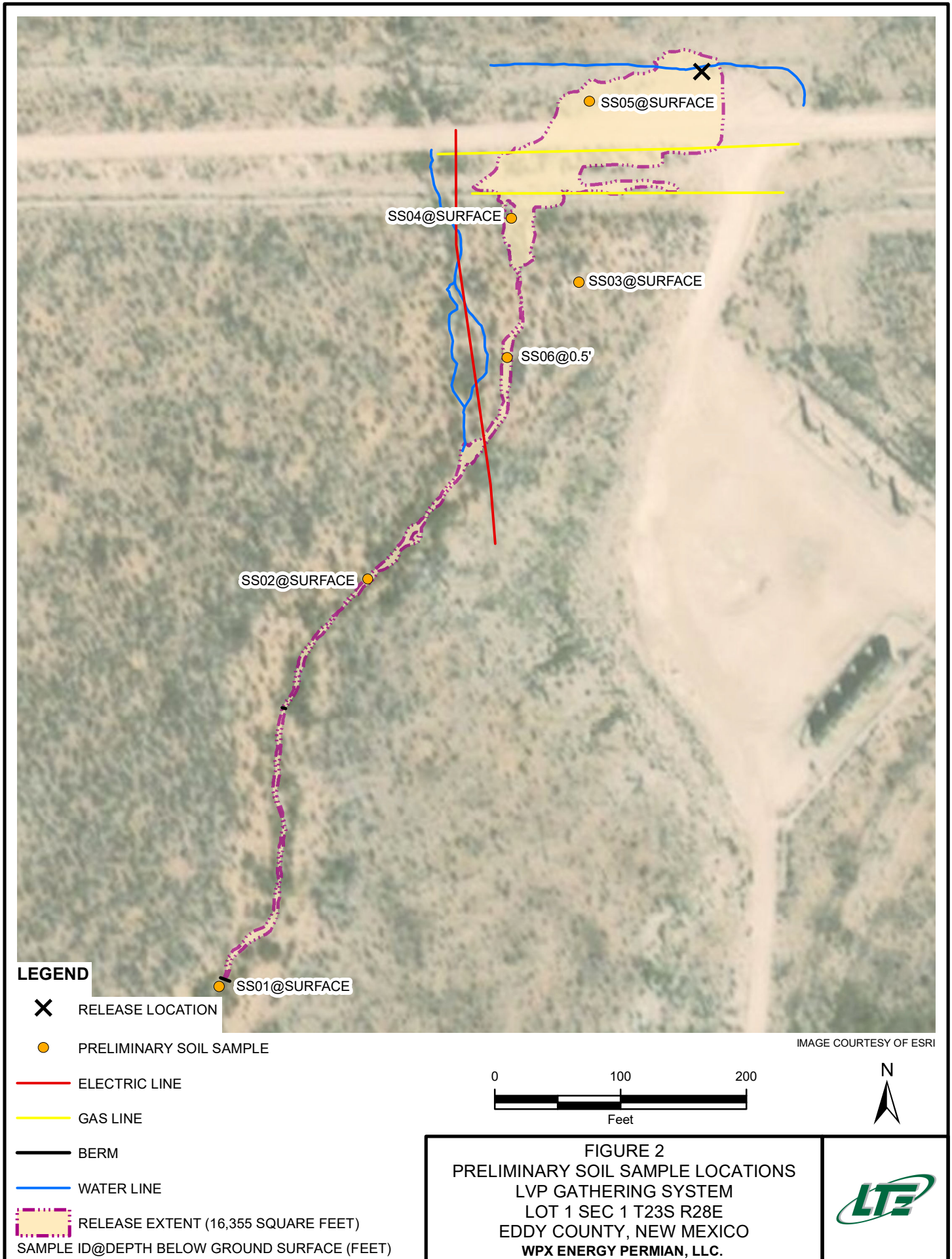
Attachments:

- Figure 1 Site Location Map
- Figure 2 Preliminary Soil Sample Locations
- Figure 3A Excavation Soil Sample Locations
- Figure 3B Excavation Soil Sample Locations
- Figure 3C Excavation Soil Sample Locations
- Figure 4 Core Drill Soil Sample Location
- Table 1 Soil Analytical Results
- Attachment 1 Form C-141
- Attachment 2 Drilled Well Record
- Attachment 3 Photographic Log
- Attachment 4 Laboratory Analytical Reports
- Attachment 5 Lithologic/Soil Sampling Log

FIGURES









LEGEND

- RELEASE LOCATION
- EXCAVATION SOIL SAMPLE
- ELECTRIC LINE
- GAS LINE
- BERM
- WATER LINE
- RELEASE EXTENT (16,355 SQUARE FEET)
- EXCAVATION EXTENT (22,133 SQUARE FEET)
- SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

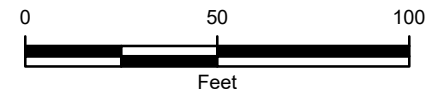
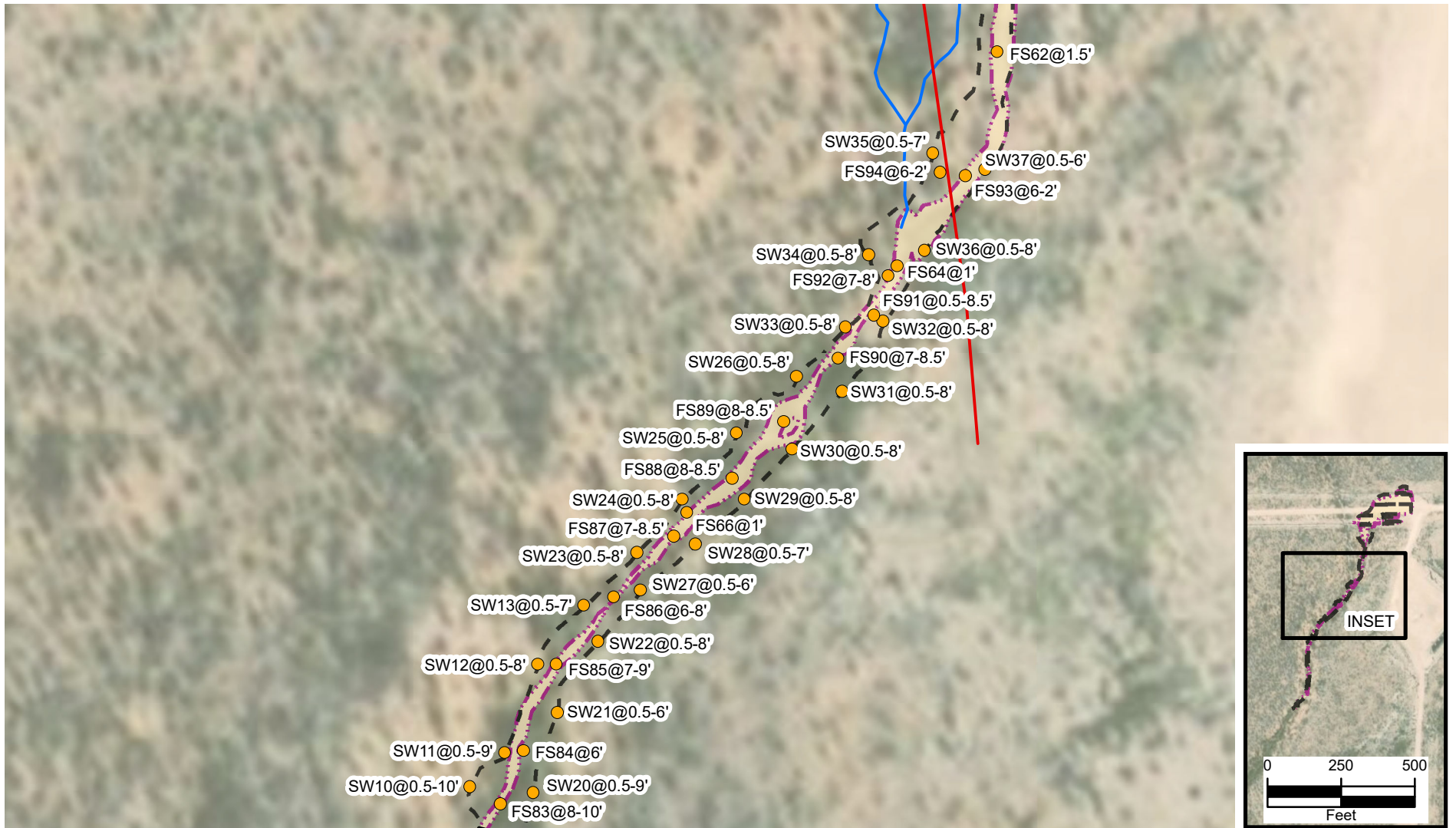


IMAGE COURTESY OF ESRI

FIGURE 3A
EXCAVATION SOIL SAMPLE LOCATIONS
 LVP GATHERING SYSTEM
 LOT 1 SEC 1 T23S R28E
 EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.





LEGEND

- RELEASE LOCATION
 - EXCAVATION SOIL SAMPLE
 - ELECTRIC LINE
 - GAS LINE
 - BERM
 - WATER LINE
 - RELEASE EXTENT (16,355 SQUARE FEET)
 - EXCAVATION EXTENT (22,133 SQUARE FEET)
- SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

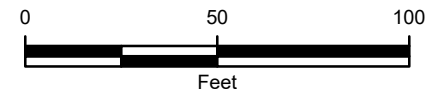


IMAGE COURTESY OF ESRI

FIGURE 3B
EXCAVATION SOIL SAMPLE LOCATIONS
 LVP GATHERING SYSTEM
 LOT 1 SEC 1 T23S R28E
 EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.



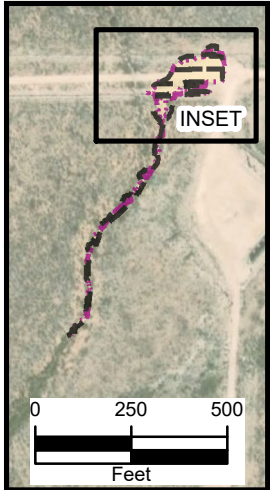
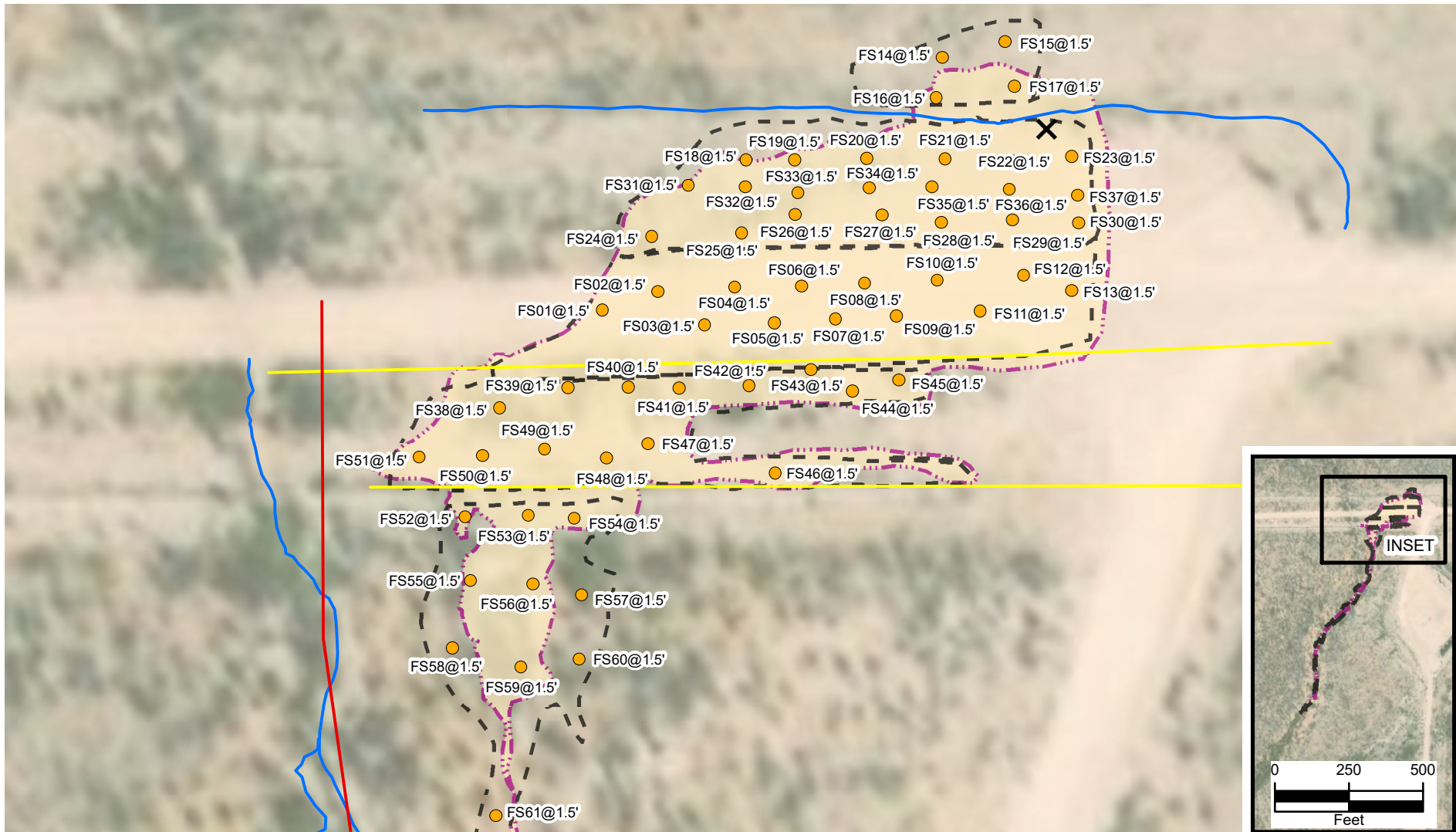


IMAGE COURTESY OF ESRI

LEGEND

- X RELEASE LOCATION
- EXCAVATION SOIL SAMPLE
- ELECTRIC LINE
- GAS LINE
- BERM
- WATER LINE
- SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)
- RELEASE EXTENT (16,355 SQUARE FEET)
- EXCAVATION EXTENT (22,133 SQUARE FEET)

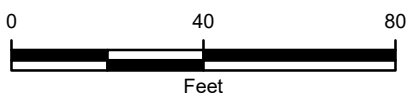
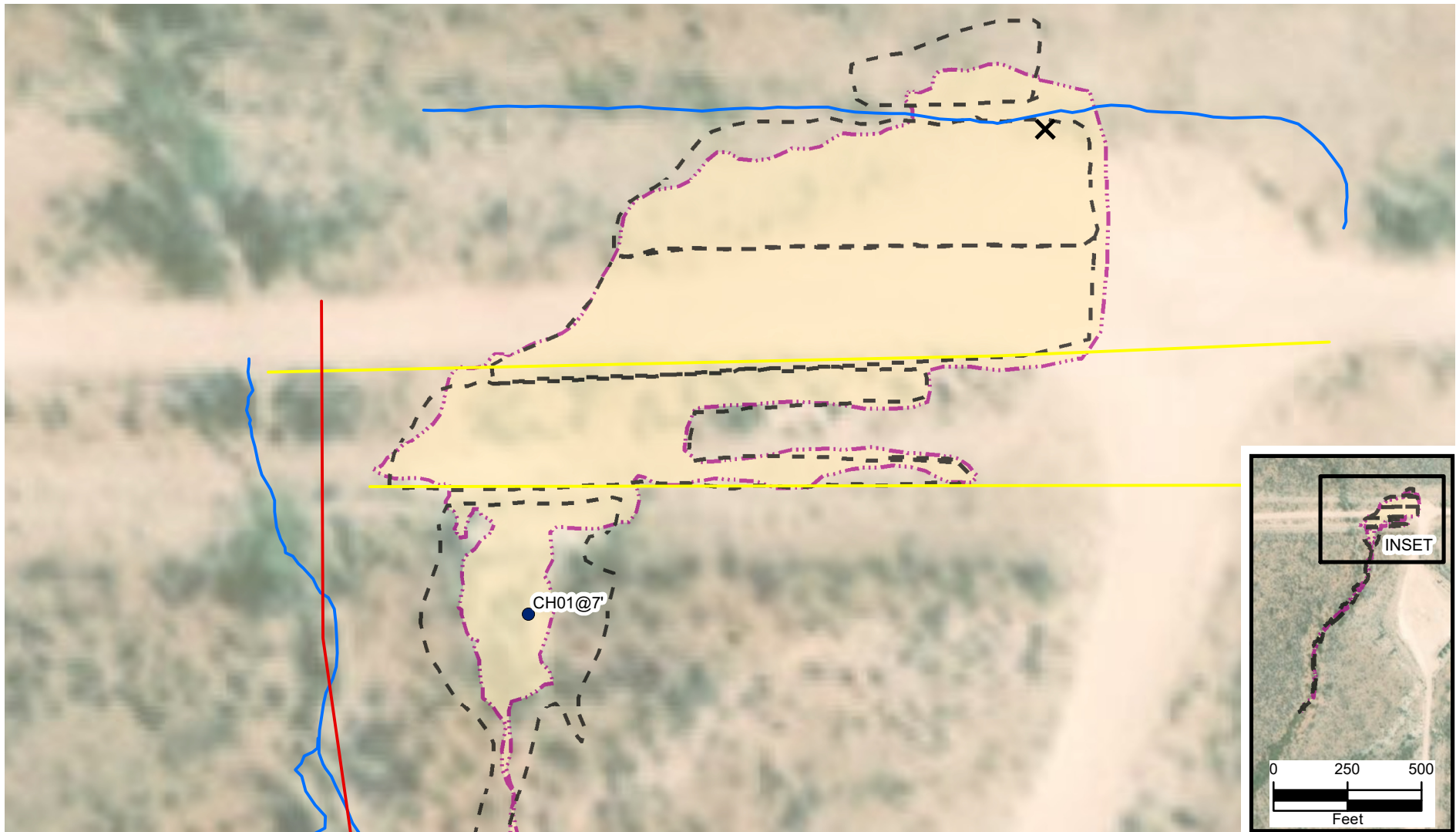


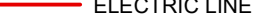







FIGURE 3C
EXCAVATION SOIL SAMPLE LOCATIONS
 LVP GATHERING SYSTEM
 LOT 1 SEC 1 T23S R28E
 EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.





LEGEND

-  RELEASE LOCATION
 -  CORE DRILL SAMPLE
 -  ELECTRIC LINE
 -  GAS LINE
 -  BERM
 -  WATER LINE
 -  RELEASE EXTENT (16,355 SQUARE FEET)
 -  EXCAVATION EXTENT (22,133 SQUARE FEET)
- SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

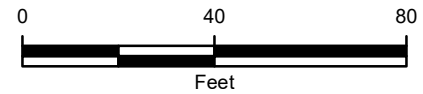


IMAGE COURTESY OF ESRI

FIGURE 4
CORE DRILL SOIL SAMPLE LOCATION
LVP GATHERING SYSTEM
LOT 1 SEC 1 T23S R28E
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC.



TABLE



TABLE 1
SOIL ANALYTICAL RESULTS

LVP SWD 1
INCIDENT NUMBER NRM2008555443
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC

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)	Application
SS01	surface	03/13/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	<10.0	Excavated
SS02	surface	03/13/2020	0.0186	0.00538	<0.00198	<0.00198	0.0240	<50.0	<50.0	<50.0	<50.0	<50.0	2,940	Excavated
SS03	surface	03/13/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	13.5	Excavated
SS04	surface	03/13/2020	0.0411	0.0899	0.00816	0.0411	0.180	<49.8	<49.8	<49.8	<49.8	<49.8	7,800	Excavated
SS05	surface	03/13/2020	0.189	0.148	0.0105	0.0601	0.408	<50.1	<50.1	<50.1	<50.1	<50.1	13,500	Excavated
SS06	0.5	03/18/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	<10.0	Excavated
FS01	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	207	In-Situ
FS02	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	586	In-Situ
FS03	1.5	03/27/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	1,570	In-Situ
FS04	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	1,570	In-Situ
FS05	1.5	03/27/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,550	In-Situ
FS06	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	1,550	In-Situ
FS07	1.5	03/27/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	1,520	In-Situ
FS08	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	1,030	In-Situ
FS09	1.5	03/27/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	1,160	In-Situ
FS10	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	516	In-Situ
FS11	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	463	In-Situ
FS12	1.5	03/27/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	688	In-Situ
FS13	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	416	In-Situ
FS14	1.5	03/25/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	65.9	In-Situ
FS15	1.5	03/25/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	97.1	In-Situ
FS16	1.5	03/25/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	87.9	In-Situ
FS17	1.5	03/25/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	22.0	In-Situ
FS18	1.5	03/26/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	26.2	In-Situ
FS19	1.5	03/26/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	1,270	In-Situ
FS20	1.5	03/26/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	1,090	In-Situ
FS21	1.5	03/26/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	34.1	In-Situ
FS22	1.5	03/25/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	280	In-Situ
FS23	1.5	03/26/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.8	<49.8	<49.8	<49.8	<49.8	39.2	In-Situ
FS24	1.5	03/26/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	39.9	In-Situ

TABLE 1
SOIL ANALYTICAL RESULTS

LVP SWD 1
INCIDENT NUMBER NRM2008555443
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC

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)	Application
FS25	1.5	03/26/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	1,480	In-Situ
FS26	1.5	03/26/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	2,910	In-Situ
FS27	1.5	03/26/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	234	In-Situ
FS28	1.5	03/26/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	286	In-Situ
FS29	1.5	03/27/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	7,080	In-Situ
FS30	1.5	03/27/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	400	In-Situ
FS31	1.5	03/27/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	286	In-Situ
FS32	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	52.8	<50.0	52.8	52.8	4,560	In-Situ
FS33	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	6,100	In-Situ
FS34	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	3,200	In-Situ
FS35	1.5	03/27/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	218	In-Situ
FS36	1.5	03/27/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	182	In-Situ
FS37	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	130	In-Situ
FS38	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	1,210	In-Situ
FS39	1.5	03/27/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	361	In-Situ
FS40	1.5	03/27/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	51.7	In-Situ
FS41	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	4,580	In-Situ
FS42	1.5	03/27/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	32.9	In-Situ
FS43	1.5	03/27/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	195	In-Situ
FS44	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	46.1	In-Situ
FS45	1.5	03/27/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	26.2	In-Situ
FS46	1.5	03/27/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	52.2	In-Situ
FS47	1.5	03/27/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	57.2	In-Situ
FS48	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	989	In-Situ
FS49	1.5	03/27/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	366	In-Situ
FS50	1.5	03/27/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	1,960	In-Situ
FS51	1.5	03/27/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	372	In-Situ
FS52	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	6,030	In-Situ
FS53	1.5	03/27/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	451	In-Situ
FS54	1.5	03/27/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	570	In-Situ

TABLE 1
SOIL ANALYTICAL RESULTS

LVP SWD 1
INCIDENT NUMBER NRM2008555443
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC

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)	Application
FS55	1.5	03/27/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	2,140	In-Situ
FS56	1.5	03/27/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.9	<49.9	<49.9	<49.9	<49.9	845	In-Situ
FS57	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	35.9	In-Situ
FS58	1.5	03/27/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	695	In-Situ
FS59	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	4,260	In-Situ
FS60	1.5	03/27/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	12.4	In-Situ
FS61	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	<9.96	In-Situ
FS62	1.5	03/27/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	256	In-Situ
FS64	1	04/02/2020	-	-	-	-	-	-	-	-	-	-	1,340	Excavated
FS66	1	04/02/2020	-	-	-	-	-	-	-	-	-	-	1,050	Excavated
FS75	1	04/02/2020	-	-	-	-	-	-	-	-	-	-	1,400	Excavated
FS77	5 - 6	04/08/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	176	In-Situ
FS78	5.5 - 6	04/08/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	76.8	In-Situ
FS79	5.5 - 6	04/09/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	408	In-Situ
FS80	5.5 - 6	04/09/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	13.2	In-Situ
FS81	6 - 7	04/14/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	14.9	In-Situ
FS82	5.5 - 6	04/09/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	457	In-Situ
FS83	8 - 10	04/14/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	15.3	In-Situ
FS84	6	04/14/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	<9.94	In-Situ
FS85	7 - 9	04/15/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	116	In-Situ
FS86	6 - 8	04/15/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	<9.96	In-Situ
FS87	7 - 8.5	04/15/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	12.1	In-Situ
FS88	8 - 8.5	04/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	42.3	In-Situ
FS89	8 - 8.5	04/15/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.3	<50.3	<50.3	<50.3	<50.3	<9.98	In-Situ
FS90	7 - 8.5	04/15/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	<10.0	In-Situ
FS91	0.5 - 8.5	04/15/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	123	In-Situ
FS92	7 - 8	04/16/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	17.7	In-Situ
FS93	6 - 2	04/16/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	127	In-Situ
FS94	6 - 2	04/16/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	61.9	In-Situ
SW01	0.5 - 6	04/09/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	13.1	In-Situ
SW02	0.5 - 6	04/08/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	13.1	In-Situ

TABLE 1
SOIL ANALYTICAL RESULTS

LVP SWD 1
INCIDENT NUMBER NRM2008555443
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC

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)	Application
SW03	0.5 - 6	04/08/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	<9.96	In-Situ
SW04	0.5 - 6	04/08/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	362	In-Situ
SW05	0.5 - 6	04/10/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	<9.98	In-Situ
SW06	0.5 - 6	04/10/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	440	In-Situ
SW07	0.5 - 6	04/10/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	12.7	In-Situ
SW08	0.5 - 7	04/10/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	15.0	In-Situ
SW09	0.5 - 7	04/14/2020	<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<50.2	<50.2	<50.2	<50.2	<50.2	<9.98	In-Situ
SW10	0.5 - 10	04/14/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	59.9	In-Situ
SW11	0.5 - 9	04/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	178	In-Situ
SW12	0.5 - 8	04/15/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	582	In-Situ
SW13	0.5 - 7	04/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	10.2	In-Situ
SW14	0.5 - 6	04/09/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	141	In-Situ
SW15	0.5 - 6	04/10/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	46.8	In-Situ
SW16	0.5 - 6	04/09/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	599	In-Situ
SW17	0.5 - 7	04/14/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	12.1	In-Situ
SW18	0.5 - 6	04/09/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	64.1	In-Situ
SW19	0.5 - 10	04/14/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	102	In-Situ
SW20	0.5 - 9	04/15/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.3	<50.3	<50.3	<50.3	<50.3	24.3	In-Situ
SW21	0.5 - 6	04/09/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	163	In-Situ
SW22	0.5 - 8	04/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	12.4	In-Situ
SW23	0.5 - 8	04/15/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<49.8	<49.8	<49.8	<49.8	<49.8	<9.92	In-Situ
SW24	0.5 - 8	04/15/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	33.0	In-Situ
SW25	0.5 - 8	04/16/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	48.5	In-Situ
SW26	0.5 - 8	04/15/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	11.5	In-Situ
SW27	0.5 - 6	04/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	26.0	In-Situ
SW28	0.5 - 7	04/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	<10.0	In-Situ
SW29	0.5 - 8	04/15/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	<10.0	In-Situ
SW30	0.5 - 8	04/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	<10.0	In-Situ
SW31	0.5 - 8	04/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	24.2	In-Situ
SW32	0.5 - 8	04/15/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	104	In-Situ

TABLE 1
SOIL ANALYTICAL RESULTS

LVP SWD 1
INCIDENT NUMBER NRM2008555443
EDDY COUNTY, NEW MEXICO
WPX ENERGY PERMIAN, LLC

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)	Application
SW33	0.5 - 8	04/16/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	18.1	In-Situ
SW34	0.5 - 8	04/16/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.2	<50.2	<50.2	<50.2	<50.2	11.8	In-Situ
SW35	0.5 - 7	04/16/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	71.1	In-Situ
SW36	0.5 - 8	04/16/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	406	In-Situ
SW37	0.5 - 6	04/16/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	25.6	In-Situ
CH01	7	09/08/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.2	<50.2	<50.2	<50.2	<50.2	47.1	In-Situ
NMOCDC Table 1 Closure Criteria			10	NE	NE	NE	50	NE	NE	NE	NE	100	600	NA

Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

MRO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCDC - New Mexico Oil Conservation Division

NE - not established

TPH - total petroleum hydrocarbons

Bold - indicates result exceeds the applicable regulatory standard

< - indicates result is below laboratory reporting limits

Table 1 - closure criteria for soils impacted by a release per NMAC 19.15.29 August 2018

ATTACHMENT 1: FORM C-141



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	NRM2008555443
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	WPX Energy, Inc.	OGRID	246289
Contact Name	Jim Raley	Contact Telephone	575-689-7597
Contact email	James.Raley@wpxenergy.com	Incident # (assigned by OCD)	
Contact mailing address	5315 Buena Vista Dr., Carlsbad, NM 88220		

Location of Release Source

Latitude 32.340972 Longitude -104.035245
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	LVP SWD 1	Site Type	Production Facility
Date Release Discovered	3/12/2020	API# (if applicable)	30-015-42234

Unit Letter	Section	Township	Range	County
A	01	23S	28E	Eddy

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 175	Volume Recovered (bbls) 30
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A third party vehicle caused damage to LVP gathering system trunk line. Resulting in a release of approx. 175 bbls of produced water to BLM surface, approx. 30 bbls was recovered. The release point was located at (WGS84 32.340972, -104.035245)

Form C-141

State of New Mexico
Oil Conservation Division

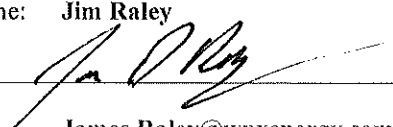
Page 2

Incident ID	NRM2008555443
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Volume exceeded 25 bbis.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Phone call to Mike Bratcher on 3/13/2019 at 8:02 AM	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
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: Jim Raley Title: Environmental Specialist Signature:  Date: 9/23/2020 email: <u>James.Raley@wpenergy.com</u> Telephone: 575-689-7597
<u>OCD Only</u> Received by: _____ Date: _____

Incident ID	NRM2008555443
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

Form C-141

State of New Mexico
Oil Conservation Division

Page 4

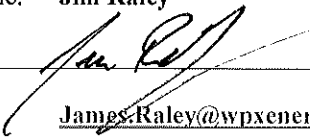
Incident ID	NRM2008555443
District RP	
Facility ID	
Application ID	

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: **Jim Raley**

Title: **Environmental Specialist**

Signature: _____



Date: **9/23/2020**

email: James.Raley@wpenergy.com

Telephone: **575-689-7597**

OCD Only

Received by: Cristina Eads

Date: 09/29/2020

Form C-141

State of New Mexico
Oil Conservation Division

Page 5

Incident ID	NRM2008555443
District RP	
Facility ID	
Application ID	

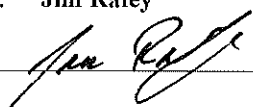
Closure

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

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

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

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

Printed Name: **Jim Raley** Title: **Environmental Specialist**
 Signature:  Date: **9/23/2020**
 email: James.Raley@wpenergy.com Telephone: **575-689-7597**

OCD Only

Received by: Cristina Eads Date: 09/29/2020

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: 12/23/2020
 Printed Name: Cristina Eads Title: Environmental Specialist

ATTACHMENT 2: DRILLED WELL LOG





WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER


www.ose.state.nm.us

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) PODI		WELL TAG ID NO. Well Tag ID Not Issued		OSE FILE NO(S) C 04417			
	WELL OWNER NAME(S) WPX Energy				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 5315 Buena Vista Drive				CITY Carlsbad	STATE NM	ZIP 88220	
	WELL LOCATION (FROM GPS)	LATITUDE	DEGREES 32	MINUTES 20	SECONDS 35.4	N		* ACCURACY REQUIRED: ONE TENTH OF A SECOND
		LONGITUDE	-104	02	47.1	W		* DATUM REQUIRED: WGS 84
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE M-36-22S-28E; Pinnacle State #25								
2. DRILLING & CASING INFORMATION	LICENSE NO. 1789		NAME OF LICENSED DRILLER Mark Mumby			NAME OF WELL DRILLING COMPANY HRL Compliance Solutions		
	DRILLING STARTED 3/31/2020		DRILLING ENDED 3/31/2020		DEPTH OF COMPLETED WELL (FT) 55	BORE HOLE DEPTH (FT) 55	DEPTH WATER FIRST ENCOUNTERED (FT) Water was not encountered	
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)					STATIC WATER LEVEL IN COMPLETED WELL (FT) Water was not present in the well after 48-hour		
	DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: Hollow Stem Auger							
	DEPTH (feet bgl)		BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	45	6.25	Blank PVC	Flush Thread	2.0	0.154	0.010
	45	55	6.25	Factory Slotted PVC Screen	Flush Thread	2.0	0.154	0.010
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		
	FROM	TO						
				No Annular Seal Material or Gravel Pack	None			

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

FILE NO. C-4417	POD NO. I	TRN NO. 670394
LOCATION 334 T22S R28E Sec 36	WELL TAG ID NO. NA	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)		ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
	FROM	TO			Y	N	
	0	55	55	Silt/Sand with Interbedded caliche	Y	✓ N	0.00
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
					Y	N	
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:					TOTAL ESTIMATED WELL YIELD (gpm):		
<input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY: Water Not Encountered					0.00		
5. TEST; RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.					
	MISCELLANEOUS INFORMATION: Well was drilled to determine depth to groundwater in the area. The well was a temporary well. The well was monitored for the presence of water 48-hours after drilling was complete; water was not encountered in the well at this time. The well was subsequently abandoned on 4/3/2020.						
	PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: Kalvin (Kelly) Padilla						
6. SIGNATURE	BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING.						
	 SIGNATURE OF DRILLER / PRINT SIGNEE NAME				Mark Mumby DATE 4/23/2020		

FOR OSE INTERNAL USE			WR-20 WELL RECORD & LOG (Version 04/30/2019)		
FILE NO.	C-4417	POD NO.	1	TRN NO.	670344
LOCATION	334 T225 R28 E Sec 36	WELL TAG ID NO.	NA	PAGE 2 OF 2	

John R. D Antonio, Jr., P.E.
State Engineer



Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

**STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER**

Trn Nbr: 670344
File Nbr: C 04417
Well File Nbr: C 04417 POD1

May. 29, 2020

LYNDA LAUMBACH
WPX ENERGY
5315 BUENA VISTA DRIVE
CARLSBAD, NM 88220

Greetings:

The above numbered permit was issued in your name on 03/26/2020.

The Well Record was received in this office on 05/26/2020, stating that it had been completed on 03/31/2020, and was a dry well. The well is to be plugged according to 19.27.4.30 NMAC.

Please note that another well can be drilled under this permit if the well is completed and the well log filed on or before 03/26/2021.

If you have any questions, please feel free to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Andrew Dennis".

Andrew Dennis
(575) 622-6521

drywell

ATTACHMENT 3: PHOTOGRAPHIC LOG



PHOTOGRAPHIC LOG



Photograph 1: View of release along lease road.



Photograph 2: View of release along right of way.



Photograph 3: View of release extent north of lease road.



Photograph 4: View of the release at northern end of dry wash.



Photograph 5: View of vegetation along dry wash.



Photograph 6: View of vegetation along dry wash.

PHOTOGRAPHIC LOG



Photograph 7: View of northern excavation in the right of way facing East.



Photograph 8: View of northern excavation in right of way facing West.



Photograph 9: View of southern excavation in the right of way facing East.



Photograph 10: View of southern excavation in the right of way facing West.



Photograph 11: View of caliche layer at one foot facing west.



Photograph 12: View of excavation north of lease road facing west.

PHOTOGRAPHIC LOG



Photograph 13: View of floor sample location taken with hammer drill.



Photograph 14: View of excavation along lease road.



Photograph 15: View of southern end of excavation in dry wash.



Photograph 16: View of excavation in dry wash.



Photograph 17: View of excavation in dry wash facing South.



Photograph 18: View of excavation in dry wash facing North.

PHOTOGRAPHIC LOG



Photograph 19: Core sample from 1.5 feet bgs.



Photograph 20: Utilizing the core drill in the CH07 sample location.



Photograph 21: View of the core hole area associated with CH07.



Photograph 22: View of the backfilled core hole area associated with CH07.

ATTACHMENT 4: LABORATORY ANALYTICAL REPORTS



Analytical Report 655702

for

LT Environmental, Inc.

Project Manager: Chris McKisson

Breakwater Spill

034820019

17-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

Xenco-Tampa: Florida (E87429), North Carolina (483)



17-MAR-20

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

Reference: XENCO Report No(s): **655702**
Breakwater Spill
Project Address: Rural Eddy County

Chris McKisson:

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) 655702. 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. 655702 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 Manager

*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 655702

LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	03-13-20 14:03	surface	655702-001
SS02	S	03-13-20 14:10	surface	655702-002
SS03	S	03-13-20 14:13	surface	655702-003
SS04	S	03-13-20 14:15	surface	655702-004
SS05	S	03-13-20 14:40	surface	655702-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Breakwater Spill

Project ID: 034820019
Work Order Number(s): 655702

Report Date: 17-MAR-20
Date Received: 03/13/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3119634 BTEX by EPA 8021B

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



Certificate of Analysis Summary 655702

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 034820019
Contact: Chris McKisson
Project Location: Rural Eddy County

Date Received in Lab: Fri Mar-13-20 04:25 pm
Report Date: 17-MAR-20
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	655702-001	655702-002	655702-003	655702-004	655702-005	
	<i>Field Id:</i>	SS01	SS02	SS03	SS04	SS05	
	<i>Depth:</i>	surface-	surface-	surface-	surface-	surface-	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Mar-13-20 14:03	Mar-13-20 14:10	Mar-13-20 14:13	Mar-13-20 14:15	Mar-13-20 14:40	
BTEX by EPA 8021B	<i>Extracted:</i>	Mar-13-20 18:00	Mar-13-20 18:00	Mar-13-20 18:00	Mar-13-20 18:00	Mar-13-20 18:00	
	<i>Analyzed:</i>	Mar-14-20 05:10	Mar-14-20 05:30	Mar-14-20 05:50	Mar-14-20 06:11	Mar-14-20 06:31	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00199 0.00199	0.0186 0.00198	<0.00199 0.00199	0.0411 0.00200	0.189 0.00202	
Toluene		<0.00199 0.00199	0.00538 0.00198	<0.00199 0.00199	0.0899 0.00200	0.148 0.00202	
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	0.00816 0.00200	0.0105 0.00202	
m,p-Xylenes		<0.00398 0.00398	<0.00396 0.00396	<0.00398 0.00398	0.0300 0.00401	0.0425 0.00403	
o-Xylene		<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	0.0111 0.00200	0.0176 0.00202	
Xylenes, Total		<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	0.0411 0.00200	0.0601 0.00202	
Total BTEX		<0.00199 0.00199	0.0240 0.00198	<0.00199 0.00199	0.180 0.00200	0.408 0.00202	
Chloride by EPA 300	<i>Extracted:</i>	Mar-13-20 19:03	Mar-13-20 19:03	Mar-13-20 19:03	Mar-13-20 19:03	Mar-13-20 19:03	
	<i>Analyzed:</i>	Mar-13-20 21:29	Mar-13-20 21:36	Mar-13-20 21:42	Mar-13-20 22:01	Mar-13-20 22:07	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		<10.0 10.0	2940 50.0	13.5 9.98	7800 50.1	13500 50.1	
TPH by SW8015 Mod	<i>Extracted:</i>	Mar-13-20 18:30	Mar-13-20 18:30	Mar-13-20 18:30	Mar-13-20 18:30	Mar-13-20 18:30	
	<i>Analyzed:</i>	Mar-14-20 00:51	Mar-14-20 01:12	Mar-13-20 22:08	Mar-13-20 22:28	Mar-13-20 22:48	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.1 50.1	
Diesel Range Organics (DRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.1 50.1	
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.1 50.1	
Total GRO-DRO		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.1 50.1	
Total TPH		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.1 50.1	

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%

Jessica Kramer
Project Manager



Certificate of Analytical Results 655702

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **SS01** Matrix: Soil Date Received: 03.13.20 16.25
 Lab Sample Id: 655702-001 Date Collected: 03.13.20 14.03 Sample Depth: surface
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.13.20 19.03 Basis: Wet Weight
 Seq Number: 3119637

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	03.13.20 21.29	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.13.20 18.30 Basis: Wet Weight
 Seq Number: 3119703

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.14.20 00.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.14.20 00.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.14.20 00.51	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.14.20 00.51	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.14.20 00.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	03.14.20 00.51	
o-Terphenyl	84-15-1	104	%	70-135	03.14.20 00.51	



Certificate of Analytical Results 655702

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: SS01	Matrix: Soil	Date Received: 03.13.20 16.25
Lab Sample Id: 655702-001	Date Collected: 03.13.20 14.03	Sample Depth: surface
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.13.20 18.00	Basis: Wet Weight
Seq Number: 3119634		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.14.20 05.10	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.14.20 05.10	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.14.20 05.10	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.14.20 05.10	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.14.20 05.10	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	03.14.20 05.10	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.14.20 05.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	03.14.20 05.10		
4-Bromofluorobenzene	460-00-4	110	%	70-130	03.14.20 05.10		



Certificate of Analytical Results 655702

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **SS02** Matrix: Soil Date Received: 03.13.20 16.25
 Lab Sample Id: 655702-002 Date Collected: 03.13.20 14.10 Sample Depth: surface
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.13.20 19.03 Basis: Wet Weight
 Seq Number: 3119637

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2940	50.0	mg/kg	03.13.20 21.36		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.13.20 18.30 Basis: Wet Weight
 Seq Number: 3119703

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.14.20 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.14.20 01.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.14.20 01.12	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.14.20 01.12	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.14.20 01.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	03.14.20 01.12	
o-Terphenyl	84-15-1	101	%	70-135	03.14.20 01.12	



Certificate of Analytical Results 655702

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: SS02	Matrix: Soil	Date Received: 03.13.20 16.25
Lab Sample Id: 655702-002	Date Collected: 03.13.20 14.10	Sample Depth: surface
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.13.20 18.00	Basis: Wet Weight
Seq Number: 3119634		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0186	0.00198	mg/kg	03.14.20 05.30		1
Toluene	108-88-3	0.00538	0.00198	mg/kg	03.14.20 05.30		1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.14.20 05.30	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	03.14.20 05.30	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.14.20 05.30	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	03.14.20 05.30	U	1
Total BTEX		0.0240	0.00198	mg/kg	03.14.20 05.30		1
			%				
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	102	%	70-130	03.14.20 05.30		
4-Bromofluorobenzene	460-00-4	87	%	70-130	03.14.20 05.30		



Certificate of Analytical Results 655702

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **SS03** Matrix: Soil Date Received: 03.13.20 16.25
 Lab Sample Id: 655702-003 Date Collected: 03.13.20 14.13 Sample Depth: surface
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.13.20 19.03 Basis: Wet Weight
 Seq Number: 3119637

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.5	9.98	mg/kg	03.13.20 21.42		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.13.20 18.30 Basis: Wet Weight
 Seq Number: 3119708

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	03.13.20 22.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	03.13.20 22.08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	03.13.20 22.08	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	03.13.20 22.08	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	03.13.20 22.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	03.13.20 22.08	
o-Terphenyl	84-15-1	113	%	70-135	03.13.20 22.08	



Certificate of Analytical Results 655702

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: SS03	Matrix: Soil	Date Received: 03.13.20 16.25
Lab Sample Id: 655702-003	Date Collected: 03.13.20 14.13	Sample Depth: surface
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.13.20 18.00	Basis: Wet Weight
Seq Number: 3119634		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.14.20 05.50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.14.20 05.50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.14.20 05.50	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.14.20 05.50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.14.20 05.50	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	03.14.20 05.50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.14.20 05.50	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94		%	70-130	03.14.20 05.50	
1,4-Difluorobenzene	540-36-3	107		%	70-130	03.14.20 05.50	



Certificate of Analytical Results 655702

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **SS04** Matrix: Soil Date Received: 03.13.20 16.25
 Lab Sample Id: 655702-004 Date Collected: 03.13.20 14.15 Sample Depth: surface
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.13.20 19.03 Basis: Wet Weight
 Seq Number: 3119637

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7800	50.1	mg/kg	03.13.20 22.01		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.13.20 18.30 Basis: Wet Weight
 Seq Number: 3119708

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	03.13.20 22.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	03.13.20 22.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	03.13.20 22.28	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	03.13.20 22.28	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	03.13.20 22.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	03.13.20 22.28	
o-Terphenyl	84-15-1	116	%	70-135	03.13.20 22.28	



Certificate of Analytical Results 655702

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: SS04	Matrix: Soil	Date Received: 03.13.20 16.25
Lab Sample Id: 655702-004	Date Collected: 03.13.20 14.15	Sample Depth: surface
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.13.20 18.00	Basis: Wet Weight
Seq Number: 3119634		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.0411	0.00200	mg/kg	03.14.20 16.44		1
Toluene	108-88-3	0.0899	0.00200	mg/kg	03.14.20 16.44		1
Ethylbenzene	100-41-4	0.00816	0.00200	mg/kg	03.14.20 16.44		1
m,p-Xylenes	179601-23-1	0.0300	0.00401	mg/kg	03.14.20 16.44		1
o-Xylene	95-47-6	0.0111	0.00200	mg/kg	03.14.20 16.44		1
Xylenes, Total	1330-20-7	0.0411	0.00200	mg/kg	03.14.20 16.44		1
Total BTEX		0.180	0.00200	mg/kg	03.14.20 16.44		1
			%				
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	81	%	70-130	03.14.20 06.11		
1,4-Difluorobenzene	540-36-3	94	%	70-130	03.14.20 06.11		



Certificate of Analytical Results 655702

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **SS05** Matrix: Soil Date Received: 03.13.20 16.25
 Lab Sample Id: 655702-005 Date Collected: 03.13.20 14.40 Sample Depth: surface
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.13.20 19.03 Basis: Wet Weight
 Seq Number: 3119637

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13500	50.1	mg/kg	03.13.20 22.07		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.13.20 18.30 Basis: Wet Weight
 Seq Number: 3119708

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	03.13.20 22.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.13.20 22.48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.13.20 22.48	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.13.20 22.48	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.13.20 22.48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	03.13.20 22.48	
o-Terphenyl	84-15-1	116	%	70-135	03.13.20 22.48	



Certificate of Analytical Results 655702

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: SS05	Matrix: Soil	Date Received: 03.13.20 16.25
Lab Sample Id: 655702-005	Date Collected: 03.13.20 14.40	Sample Depth: surface
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.13.20 18.00	Basis: Wet Weight
Seq Number: 3119634		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.189	0.00202	mg/kg	03.14.20 17.04		1
Toluene	108-88-3	0.148	0.00202	mg/kg	03.14.20 17.04		1
Ethylbenzene	100-41-4	0.0105	0.00202	mg/kg	03.14.20 17.04		1
m,p-Xylenes	179601-23-1	0.0425	0.00403	mg/kg	03.14.20 17.04		1
o-Xylene	95-47-6	0.0176	0.00202	mg/kg	03.14.20 17.04		1
Xylenes, Total	1330-20-7	0.0601	0.00202	mg/kg	03.14.20 17.04		1
Total BTEX		0.408	0.00202	mg/kg	03.14.20 17.04		1
			%				
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	03.14.20 06.31		
4-Bromofluorobenzene	460-00-4	93	%	70-130	03.14.20 06.31		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: Chloride by EPA 300

Seq Number: 3119637
MB Sample Id: 7698873-1-BLK

Matrix: Solid
LCS Sample Id: 7698873-1-BKS
Prep Method: E300P
Date Prep: 03.13.20
LCSD Sample Id: 7698873-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	260	104	260	104	90-110	0	20	mg/kg	03.13.20 20:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3119637
Parent Sample Id: 655695-001

Matrix: Soil
MS Sample Id: 655695-001 S
Prep Method: E300P
Date Prep: 03.13.20
MSD Sample Id: 655695-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	462	200	674	106	675	107	90-110	0	20	mg/kg	03.13.20 20:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3119637
Parent Sample Id: 655702-003

Matrix: Soil
MS Sample Id: 655702-003 S
Prep Method: E300P
Date Prep: 03.13.20
MSD Sample Id: 655702-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	13.5	200	228	107	226	106	90-110	1	20	mg/kg	03.13.20 21:48	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119703
MB Sample Id: 7698918-1-BLK

Matrix: Solid
LCS Sample Id: 7698918-1-BKS
Prep Method: SW8015P
Date Prep: 03.13.20
LCSD Sample Id: 7698918-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	982	98	962	96	70-135	2	35	mg/kg	03.13.20 14:25	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1060	106	70-135	1	35	mg/kg	03.13.20 14:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		115		105		70-135	%	03.13.20 14:25
o-Terphenyl	97		107		106		70-135	%	03.13.20 14:25

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

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

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result
MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



LT Environmental, Inc.
Breakwater Spill

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119708

MB Sample Id: 7698930-1-BLK

Matrix: Solid

LCS Sample Id: 7698930-1-BKS

Prep Method: SW8015P

Date Prep: 03.13.20

LCSD Sample Id: 7698930-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	867	87	916	92	70-135	5	35	mg/kg	03.13.20 14:25	
Diesel Range Organics (DRO)	<50.0	1000	984	98	1040	104	70-135	6	35	mg/kg	03.13.20 14:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		115		122		70-135	%	03.13.20 14:25
o-Terphenyl	105		102		108		70-135	%	03.13.20 14:25

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119703

Matrix: Solid

MB Sample Id: 7698918-1-BLK

Prep Method: SW8015P

Date Prep: 03.13.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.13.20 15:05	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119708

Matrix: Solid

MB Sample Id: 7698930-1-BLK

Prep Method: SW8015P

Date Prep: 03.13.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.13.20 15:05	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119703

Matrix: Soil

Parent Sample Id: 655684-001

MS Sample Id: 655684-001 S

Prep Method: SW8015P

Date Prep: 03.13.20

MSD Sample Id: 655684-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	849	85	878	88	70-135	3	35	mg/kg	03.13.20 18:03	
Diesel Range Organics (DRO)	88.1	1000	936	85	946	86	70-135	1	35	mg/kg	03.13.20 18:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		105		70-135	%	03.13.20 18:03
o-Terphenyl	99		99		70-135	%	03.13.20 18:03

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

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

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

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: TPH by SW8015 Mod

Seq Number: 3119708

Parent Sample Id: 655688-009

Matrix: Soil

MS Sample Id: 655688-009 S

Prep Method: SW8015P

Date Prep: 03.13.20

MSD Sample Id: 655688-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	937	94	875	88	70-135	7	35	mg/kg	03.13.20 18:03	
Diesel Range Organics (DRO)	76.6	1000	1050	97	982	91	70-135	7	35	mg/kg	03.13.20 18:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		120		70-135	%	03.13.20 18:03
o-Terphenyl	113		107		70-135	%	03.13.20 18:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3119634

MB Sample Id: 7698870-1-BLK

Matrix: Solid

LCS Sample Id: 7698870-1-BKS

Prep Method: SW5030B

Date Prep: 03.13.20

LCSD Sample Id: 7698870-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.109	109	0.107	107	70-130	2	35	mg/kg	03.13.20 23:23	
Toluene	<0.00200	0.100	0.105	105	0.102	102	70-130	3	35	mg/kg	03.13.20 23:23	
Ethylbenzene	<0.00200	0.100	0.0998	100	0.0963	96	71-129	4	35	mg/kg	03.13.20 23:23	
m,p-Xylenes	<0.00400	0.200	0.206	103	0.199	100	70-135	3	35	mg/kg	03.13.20 23:23	
o-Xylene	<0.00200	0.100	0.104	104	0.100	100	71-133	4	35	mg/kg	03.13.20 23:23	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		109		70-130	%	03.13.20 23:23
4-Bromofluorobenzene	94		95		92		70-130	%	03.13.20 23:23

Analytical Method: BTEX by EPA 8021B

Seq Number: 3119634

Parent Sample Id: 655684-001

Matrix: Soil

MS Sample Id: 655684-001 S

Prep Method: SW5030B

Date Prep: 03.13.20

MSD Sample Id: 655684-001 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	0.111	111	0.0966	97	70-130	14	35	mg/kg	03.14.20 00:03	
Toluene	<0.00201	0.100	0.102	102	0.0892	90	70-130	13	35	mg/kg	03.14.20 00:03	
Ethylbenzene	<0.00201	0.100	0.0981	98	0.0865	87	71-129	13	35	mg/kg	03.14.20 00:03	
m,p-Xylenes	<0.00402	0.201	0.201	100	0.177	89	70-135	13	35	mg/kg	03.14.20 00:03	
o-Xylene	<0.00201	0.100	0.103	103	0.0905	91	71-133	13	35	mg/kg	03.14.20 00:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		109		70-130	%	03.14.20 00:03
4-Bromofluorobenzene	91		95		70-130	%	03.14.20 00:03

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

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

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

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



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 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8900 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

Chain of Custody

Work Order No: 055702

Project Manager:	Chris McKisson	Bill to: (if different)	
Company Name:	LT Environmental	Company Name:	
Address:	820 Megan Ave, Units B	Address:	
City, State ZIP:	Rifle, CO 81650	City, State ZIP:	
Phone:	970 285 9885	Email:	cmckisson@ltenv.com or cymckisson@ltenv.com
Project Name:	Breakeater Spill	Turn Around	
Project Number:	03482019	Route	<input checked="" type="checkbox"/>
Project Location:	Rural Eddy County	Rush:	
Sampler's Name:	Anna Byers	Due Date:	
PO #:		Quote #:	

SAMPLE RECEIPT	Temp Blank:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wet Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Temperature (°C):	3.8	Thermometer ID:	TMM007
	Received Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Correction Factor:	-0.2
	Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Total Containers:	5
	Sample Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Preservative Codes	Sample Comments
5501		S	3/13/20	1403	surface	1	TPH (EPA 8015)	MeOH: Me	
5502				1410		1	BTEX (EPA 0-801)	None: NO	
5503				1413		1	Chloride (EPA 300.0)	HNO3: HN	
5504				1415		1		H2SO4: H2	
5505				1440		1		HCL: HL	
								NaOH: Na	
								Zn Acetate+ NaOH: Zn	

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb 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 / 7477: Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco 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 Xenoco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenoco, 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
<i>Anna Byers</i>	<i>[Signature]</i>	3/13/20 1545	<i>[Signature]</i>	<i>[Signature]</i>	3/13/20 16:25

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.13.2020 04.25.00 PM

Work Order #: 655702

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007


Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6*Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 03.13.2020

Checklist reviewed by:


Jessica Kramer

Date: 03.16.2020

Analytical Report 656196

for

LT Environmental, Inc.

Project Manager: Chris McKisson

Breakwater Spill

034820019

20-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

Xenco-Tampa: Florida (E87429), North Carolina (483)



20-MAR-20

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

Reference: XENCO Report No(s): **656196**
Breakwater Spill
Project Address: Eddy

Chris McKisson:

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) 656196. 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. 656196 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 Manager

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

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Sample Cross Reference 656196

LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS06	S	03-18-20 10:32	0.5 ft	656196-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Breakwater Spill

Project ID: 034820019
Work Order Number(s): 656196

Report Date: 20-MAR-20
Date Received: 03/19/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3120331 BTEX by EPA 8021B

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



Certificate of Analysis Summary 656196

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 034820019
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Thu Mar-19-20 08:15 am
Report Date: 20-MAR-20
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	656196-001				
	Field Id:	SS06				
	Depth:	0.5- ft				
	Matrix:	SOIL				
	Sampled:	Mar-18-20 10:32				
BTEX by EPA 8021B	Extracted:	Mar-19-20 11:34				
	Analyzed:	Mar-19-20 14:23				
	Units/RL:	mg/kg RL				
	Benzene	<0.00202 0.00202				
	Toluene	<0.00202 0.00202				
	Ethylbenzene	<0.00202 0.00202				
	m,p-Xylenes	<0.00403 0.00403				
	o-Xylene	<0.00202 0.00202				
Xylenes, Total	<0.00202 0.00202					
Total BTEX	<0.00202 0.00202					
Chloride by EPA 300	Extracted:	Mar-19-20 12:16				
	Analyzed:	Mar-19-20 12:43				
Units/RL:	mg/kg RL					
Chloride	<10.0 10.0					
TPH by SW8015 Mod	Extracted:	Mar-19-20 15:00				
	Analyzed:	Mar-19-20 15:33				
	Units/RL:	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<50.2 50.2				
	Diesel Range Organics (DRO)	<50.2 50.2				
	Motor Oil Range Hydrocarbons (MRO)	<50.2 50.2				
	Total GRO-DRO	<50.2 50.2				
Total TPH	<50.2 50.2					

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 656196

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **SS06** Matrix: Soil Date Received: 03.19.20 08.15
 Lab Sample Id: 656196-001 Date Collected: 03.18.20 10.32 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.19.20 12.16 Basis: Wet Weight
 Seq Number: 3120336

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	03.19.20 12.43	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.19.20 15.00 Basis: Wet Weight
 Seq Number: 3120382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.19.20 15.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.19.20 15.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.19.20 15.33	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.19.20 15.33	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.19.20 15.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	03.19.20 15.33	
o-Terphenyl	84-15-1	116	%	70-135	03.19.20 15.33	



Certificate of Analytical Results 656196

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: SS06	Matrix: Soil	Date Received: 03.19.20 08.15
Lab Sample Id: 656196-001	Date Collected: 03.18.20 10.32	Sample Depth: 0.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.19.20 11.34	Basis: Wet Weight
Seq Number: 3120331		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.19.20 14.23	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.19.20 14.23	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.19.20 14.23	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.19.20 14.23	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.19.20 14.23	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	03.19.20 14.23	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.19.20 14.23	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93		%	70-130	03.19.20 14.23	
1,4-Difluorobenzene	540-36-3	108		%	70-130	03.19.20 14.23	



LT Environmental, Inc.
Breakwater Spill

Analytical Method: Chloride by EPA 300

Seq Number: 3120336
MB Sample Id: 7699267-1-BLK

Matrix: Solid
LCS Sample Id: 7699267-1-BKS

Prep Method: E300P
Date Prep: 03.19.20
LCSD Sample Id: 7699267-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	260	104	262	105	90-110	1	20	mg/kg	03.19.20 12:09	

Analytical Method: Chloride by EPA 300

Seq Number: 3120336
Parent Sample Id: 656193-001

Matrix: Soil
MS Sample Id: 656193-001 S

Prep Method: E300P
Date Prep: 03.19.20
MSD Sample Id: 656193-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	312	200	527	108	528	108	90-110	0	20	mg/kg	03.19.20 12:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3120336
Parent Sample Id: 656277-004

Matrix: Solid
MS Sample Id: 656277-004 S

Prep Method: E300P
Date Prep: 03.19.20
MSD Sample Id: 656277-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	535	200	752	109	745	106	90-110	1	20	mg/kg	03.19.20 16:13	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120382
MB Sample Id: 7699380-1-BLK

Matrix: Solid
LCS Sample Id: 7699380-1-BKS

Prep Method: SW8015P
Date Prep: 03.19.20
LCSD Sample Id: 7699380-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	938	94	1050	105	70-135	11	35	mg/kg	03.19.20 14:52	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1160	116	70-135	10	35	mg/kg	03.19.20 14:52	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		111		126		70-135	%	03.19.20 14:52
o-Terphenyl	98		119		134		70-135	%	03.19.20 14:52

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120382

Matrix: Solid
MB Sample Id: 7699380-1-BLK

Prep Method: SW8015P
Date Prep: 03.19.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.19.20 14:32	

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

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

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

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120382

Parent Sample Id: 656196-001

Matrix: Soil

MS Sample Id: 656196-001 S

Prep Method: SW8015P

Date Prep: 03.19.20

MSD Sample Id: 656196-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	903	90	924	92	70-135	2	35	mg/kg	03.19.20 15:53	
Diesel Range Organics (DRO)	<50.1	1000	983	98	1020	102	70-135	4	35	mg/kg	03.19.20 15:53	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		111		70-135	%	03.19.20 15:53
o-Terphenyl	111		117		70-135	%	03.19.20 15:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120331

MB Sample Id: 7699269-1-BLK

Matrix: Solid

LCS Sample Id: 7699269-1-BKS

Prep Method: SW5030B

Date Prep: 03.19.20

LCSD Sample Id: 7699269-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.108	108	0.104	104	70-130	4	35	mg/kg	03.19.20 12:41	
Toluene	<0.00200	0.100	0.104	104	0.0995	100	70-130	4	35	mg/kg	03.19.20 12:41	
Ethylbenzene	<0.00200	0.100	0.100	100	0.0950	95	71-129	5	35	mg/kg	03.19.20 12:41	
m,p-Xylenes	<0.00400	0.200	0.207	104	0.197	99	70-135	5	35	mg/kg	03.19.20 12:41	
o-Xylene	<0.00200	0.100	0.103	103	0.0982	98	71-133	5	35	mg/kg	03.19.20 12:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		107		108		70-130	%	03.19.20 12:41
4-Bromofluorobenzene	94		93		95		70-130	%	03.19.20 12:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120331

Parent Sample Id: 656196-001

Matrix: Soil

MS Sample Id: 656196-001 S

Prep Method: SW5030B

Date Prep: 03.19.20

MSD Sample Id: 656196-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.103	103	0.104	105	70-130	1	35	mg/kg	03.19.20 13:22	
Toluene	<0.00200	0.100	0.0933	93	0.0844	85	70-130	10	35	mg/kg	03.19.20 13:22	
Ethylbenzene	<0.00200	0.100	0.0877	88	0.0770	78	71-129	13	35	mg/kg	03.19.20 13:22	
m,p-Xylenes	<0.00400	0.200	0.178	89	0.153	77	70-135	15	35	mg/kg	03.19.20 13:22	
o-Xylene	<0.00200	0.100	0.0916	92	0.0828	83	71-133	10	35	mg/kg	03.19.20 13:22	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		109		70-130	%	03.19.20 13:22
4-Bromofluorobenzene	96		94		70-130	%	03.19.20 13:22

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



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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)

Chain of Custody

Work Order No:

10561940

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Page 1 of 7

Project Manager: Chris Mckisson
 Company Name: LT Environmental
 Address: 820 Megan Ave, Unit B
 City, State ZIP: Rifle, CO 81650
 Phone: (970) 285 - 9985
 Email: wmather@ltenv.com, cmckisson@ltenv.com

Bill to: (if different)
 Company Name:
 Address:
 City, State ZIP:
 Program: UST/PST RP Brownfields RC Superfund
 State of Project:
 Reporting Level: Level II Level III PT/UST RP Level IV
 Deliverables: EDD ADAPT Other:

Project Name: Breakwater Spill Turn Around
 Project Number: 034820019 Routine
 P.O. Number: Eddy Rush:
 Sampler's Name: William Mather Due Date:

SAMPLE RECEIPT
 Temperature (°C): 1.0 Thermometer ID:
 Received In tact: Yes No
 Cooler Custody Seals: Yes No N/A Correction Factor: FNM007
 Sample Custody Seals: Yes No N/A Total Containers: 1

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST										Work Order Notes
SS06	s	3/18/2020	10:32	0.5'	1	X	X	X											TAT starts the day received by the lab, if received by 4:30pm
																			Sample Comments
																			Discrete

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

Note: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xeneco, its affiliates and subcontractors. It assigns standard terms and conditions service. Xeneco 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 Xeneco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xeneco, 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

3/19/20 12:50pm 3/19/20 08:15

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.19.2020 08.15.00 AM

Work Order #: 656196

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007


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

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 03.19.2020

Checklist reviewed by:


Jessica Kramer

Date: 03.19.2020

Analytical Report 656965

for

LT Environmental, Inc.

Project Manager: Dan Moir

Breakwater Spill

012720001

30-MAR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

Xenco-Tampa: Florida (E87429), North Carolina (483)



30-MAR-20

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

Reference: XENCO Report No(s): **656965**
Breakwater Spill
Project Address: Eddy

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) 656965. 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. 656965 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 Manager

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 656965

LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Background Sample 1	S	03-24-20 15:07	0.5 ft	656965-001
FS14	S	03-25-20 09:22	1.5 ft	656965-002
FS15	S	03-25-20 09:31	1.5 ft	656965-003
FS16	S	03-25-20 09:38	1.5 ft	656965-004
FS17	S	03-25-20 09:43	1.5 ft	656965-005
FS22	S	03-25-20 11:15	1.5 ft	656965-006



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Breakwater Spill

Project ID: 012720001
Work Order Number(s): 656965

Report Date: 30-MAR-20
Date Received: 03/26/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3121125 BTEX by EPA 8021B

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



Certificate of Analysis Summary 656965

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 012720001
Contact: Dan Moir
Project Location: Eddy

Date Received in Lab: Thu Mar-26-20 08:45 am
Report Date: 30-MAR-20
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	656965-001	656965-002	656965-003	656965-004	656965-005	656965-006
	<i>Field Id:</i>	Background Sample 1	FS14	FS15	FS16	FS17	FS22
	<i>Depth:</i>	0.5- ft	1.5- ft	1.5- ft	1.5- ft	1.5- ft	1.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Mar-24-20 15:07	Mar-25-20 09:22	Mar-25-20 09:31	Mar-25-20 09:38	Mar-25-20 09:43	Mar-25-20 11:15
BTEX by EPA 8021B	<i>Extracted:</i>	Mar-26-20 11:00	Mar-26-20 11:00	Mar-26-20 11:00	Mar-26-20 11:00	Mar-26-20 11:00	Mar-26-20 11:00
	<i>Analyzed:</i>	Mar-26-20 15:06	Mar-26-20 15:26	Mar-26-20 16:48	Mar-26-20 17:08	Mar-26-20 17:29	Mar-26-20 17:49
	<i>Units/RL:</i>	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	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
	Toluene	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
	Ethylbenzene	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
	m,p-Xylenes	<0.00400 0.00400	<0.00399 0.00399	<0.00395 0.00395	<0.00398 0.00398	<0.00399 0.00399	<0.00399 0.00399
	o-Xylene	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200
Xylenes, Total	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Total BTEX	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	
Chloride by EPA 300	<i>Extracted:</i>	Mar-26-20 11:00	Mar-26-20 11:00	Mar-26-20 11:00	Mar-26-20 11:00	Mar-26-20 11:00	Mar-26-20 11:00
	<i>Analyzed:</i>	Mar-26-20 16:20	Mar-26-20 16:26	Mar-26-20 16:32	Mar-26-20 16:50	Mar-26-20 16:57	Mar-26-20 17:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride	593 50.5	65.9 9.98	97.1 9.98	87.9 9.92	22.0 10.1	280 10.1	
TPH by SW8015 Mod	<i>Extracted:</i>	Mar-26-20 16:00	Mar-26-20 16:00	Mar-26-20 16:00	Mar-26-20 16:00	Mar-26-20 16:00	Mar-26-20 18:00
	<i>Analyzed:</i>	Mar-27-20 03:54	Mar-27-20 04:14	Mar-27-20 04:35	Mar-27-20 04:55	Mar-27-20 05:15	Mar-27-20 13:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Gasoline Range Hydrocarbons (GRO)	<50.1 50.1	<50.3 50.3	<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.0 50.0
	Diesel Range Organics (DRO)	<50.1 50.1	<50.3 50.3	<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)	<50.1 50.1	<50.3 50.3	<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.0 50.0	
Total GRO-DRO	<50.1 50.1	<50.3 50.3	<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.0 50.0	
Total TPH	<50.1 50.1	<50.3 50.3	<50.1 50.1	<50.0 50.0	<50.2 50.2	<50.0 50.0	

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **Background Sample 1** Matrix: Soil Date Received: 03.26.20 08.45
 Lab Sample Id: 656965-001 Date Collected: 03.24.20 15.07 Sample Depth: 0.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.26.20 11.00 Basis: Wet Weight
 Seq Number: 3121143

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	593	50.5	mg/kg	03.26.20 16.20		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.26.20 16.00 Basis: Wet Weight
 Seq Number: 3121138

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	03.27.20 03.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.27.20 03.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.27.20 03.54	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.27.20 03.54	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.27.20 03.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	03.27.20 03.54	
o-Terphenyl	84-15-1	121	%	70-135	03.27.20 03.54	



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: Background Sample 1	Matrix: Soil	Date Received: 03.26.20 08.45
Lab Sample Id: 656965-001	Date Collected: 03.24.20 15.07	Sample Depth: 0.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.26.20 11.00	Basis: Wet Weight
Seq Number: 3121125		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.26.20 15.06	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.26.20 15.06	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.26.20 15.06	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	03.26.20 15.06	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.26.20 15.06	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	03.26.20 15.06	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.26.20 15.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	03.26.20 15.06		
4-Bromofluorobenzene	460-00-4	97	%	70-130	03.26.20 15.06		



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS14	Matrix: Soil	Date Received: 03.26.20 08.45
Lab Sample Id: 656965-002	Date Collected: 03.25.20 09.22	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.26.20 11.00	Basis: Wet Weight
Seq Number: 3121143		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	65.9	9.98	mg/kg	03.26.20 16.26		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 03.26.20 16.00	Basis: Wet Weight
Seq Number: 3121138		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	03.27.20 04.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	03.27.20 04.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	03.27.20 04.14	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	03.27.20 04.14	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	03.27.20 04.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	03.27.20 04.14	
o-Terphenyl	84-15-1	118	%	70-135	03.27.20 04.14	



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS14	Matrix: Soil	Date Received: 03.26.20 08.45
Lab Sample Id: 656965-002	Date Collected: 03.25.20 09.22	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.26.20 11.00	Basis: Wet Weight
Seq Number: 3121125		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.26.20 15.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.26.20 15.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.26.20 15.26	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.26.20 15.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.26.20 15.26	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	03.26.20 15.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.26.20 15.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	03.26.20 15.26		
1,4-Difluorobenzene	540-36-3	111	%	70-130	03.26.20 15.26		



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS15** Matrix: Soil Date Received: 03.26.20 08.45
 Lab Sample Id: 656965-003 Date Collected: 03.25.20 09.31 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.26.20 11.00 Basis: Wet Weight
 Seq Number: 3121143

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	97.1	9.98	mg/kg	03.26.20 16.32		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.26.20 16.00 Basis: Wet Weight
 Seq Number: 3121138

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	03.27.20 04.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	03.27.20 04.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	03.27.20 04.35	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	03.27.20 04.35	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	03.27.20 04.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.27.20 04.35	
o-Terphenyl	84-15-1	121	%	70-135	03.27.20 04.35	



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS15	Matrix: Soil	Date Received: 03.26.20 08.45
Lab Sample Id: 656965-003	Date Collected: 03.25.20 09.31	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.26.20 11.00	Basis: Wet Weight
Seq Number: 3121125		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.26.20 16.48	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.26.20 16.48	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.26.20 16.48	U	1
m,p-Xylenes	179601-23-1	<0.00395	0.00395	mg/kg	03.26.20 16.48	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.26.20 16.48	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	03.26.20 16.48	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.26.20 16.48	U	1
			%				
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	03.26.20 16.48		
4-Bromofluorobenzene	460-00-4	99	%	70-130	03.26.20 16.48		



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS16** Matrix: Soil Date Received: 03.26.20 08.45
 Lab Sample Id: 656965-004 Date Collected: 03.25.20 09.38 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.26.20 11.00 Basis: Wet Weight
 Seq Number: 3121143

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	87.9	9.92	mg/kg	03.26.20 16.50		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.26.20 16.00 Basis: Wet Weight
 Seq Number: 3121138

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.27.20 04.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.27.20 04.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.27.20 04.55	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.27.20 04.55	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.27.20 04.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	03.27.20 04.55	
o-Terphenyl	84-15-1	111	%	70-135	03.27.20 04.55	



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS16	Matrix: Soil	Date Received: 03.26.20 08.45
Lab Sample Id: 656965-004	Date Collected: 03.25.20 09.38	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.26.20 11.00	Basis: Wet Weight
Seq Number: 3121125		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.26.20 17.08	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.26.20 17.08	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.26.20 17.08	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.26.20 17.08	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.26.20 17.08	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	03.26.20 17.08	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.26.20 17.08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	03.26.20 17.08		
4-Bromofluorobenzene	460-00-4	97	%	70-130	03.26.20 17.08		



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS17** Matrix: Soil Date Received: 03.26.20 08.45
 Lab Sample Id: 656965-005 Date Collected: 03.25.20 09.43 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.26.20 11.00 Basis: Wet Weight
 Seq Number: 3121143

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22.0	10.1	mg/kg	03.26.20 16.57		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.26.20 16.00 Basis: Wet Weight
 Seq Number: 3121138

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	03.27.20 05.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	03.27.20 05.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	03.27.20 05.15	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	03.27.20 05.15	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	03.27.20 05.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	03.27.20 05.15	
o-Terphenyl	84-15-1	130	%	70-135	03.27.20 05.15	



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS17	Matrix: Soil	Date Received: 03.26.20 08.45
Lab Sample Id: 656965-005	Date Collected: 03.25.20 09.43	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.26.20 11.00	Basis: Wet Weight
Seq Number: 3121125		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.26.20 17.29	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.26.20 17.29	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.26.20 17.29	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.26.20 17.29	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.26.20 17.29	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	03.26.20 17.29	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.26.20 17.29	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96		%	70-130	03.26.20 17.29	
1,4-Difluorobenzene	540-36-3	111		%	70-130	03.26.20 17.29	



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS22** Matrix: Soil Date Received: 03.26.20 08.45
 Lab Sample Id: 656965-006 Date Collected: 03.25.20 11.15 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.26.20 11.00 Basis: Wet Weight
 Seq Number: 3121143

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	280	10.1	mg/kg	03.26.20 17.03		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 03.26.20 18.00 Basis: Wet Weight
 Seq Number: 3121224

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	03.27.20 13.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	03.27.20 13.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	03.27.20 13.25	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	03.27.20 13.25	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	03.27.20 13.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	03.27.20 13.25	
o-Terphenyl	84-15-1	116	%	70-135	03.27.20 13.25	



Certificate of Analytical Results 656965

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS22	Matrix: Soil	Date Received: 03.26.20 08.45
Lab Sample Id: 656965-006	Date Collected: 03.25.20 11.15	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.26.20 11.00	Basis: Wet Weight
Seq Number: 3121125		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.26.20 17.49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	03.26.20 17.49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	03.26.20 17.49	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	03.26.20 17.49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	03.26.20 17.49	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	03.26.20 17.49	U	1
Total BTEX		<0.00200	0.00200	mg/kg	03.26.20 17.49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	03.26.20 17.49		
1,4-Difluorobenzene	540-36-3	110	%	70-130	03.26.20 17.49		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: Chloride by EPA 300

Seq Number: 3121143
MB Sample Id: 7699820-1-BLK

Matrix: Solid
LCS Sample Id: 7699820-1-BKS

Prep Method: E300P
Date Prep: 03.26.20
LCSD Sample Id: 7699820-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	255	102	90-110	0	20	mg/kg	03.26.20 15:37	

Analytical Method: Chloride by EPA 300

Seq Number: 3121143
Parent Sample Id: 656942-017

Matrix: Soil
MS Sample Id: 656942-017 S

Prep Method: E300P
Date Prep: 03.26.20
MSD Sample Id: 656942-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.98	200	208	104	208	105	90-110	0	20	mg/kg	03.26.20 15:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3121143
Parent Sample Id: 656968-002

Matrix: Soil
MS Sample Id: 656968-002 S

Prep Method: E300P
Date Prep: 03.26.20
MSD Sample Id: 656968-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	415	200	631	108	634	110	90-110	0	20	mg/kg	03.26.20 17:21	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3121138
MB Sample Id: 7699848-1-BLK

Matrix: Solid
LCS Sample Id: 7699848-1-BKS

Prep Method: SW8015P
Date Prep: 03.26.20
LCSD Sample Id: 7699848-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	956	96	951	95	70-135	1	35	mg/kg	03.27.20 00:51	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	1110	111	70-135	2	35	mg/kg	03.27.20 00:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		121		124		70-135	%	03.27.20 00:51
o-Terphenyl	118		129		127		70-135	%	03.27.20 00:51

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

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

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result
MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



LT Environmental, Inc.
Breakwater Spill

Analytical Method: TPH by SW8015 Mod
Seq Number: 3121224
MB Sample Id: 7699850-1-BLK

Matrix: Solid
LCS Sample Id: 7699850-1-BKS
Prep Method: SW8015P
Date Prep: 03.26.20
LCSD Sample Id: 7699850-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	999	100	985	99	70-135	1	35	mg/kg	03.27.20 11:22	
Diesel Range Organics (DRO)	<50.0	1000	1110	111	1180	118	70-135	6	35	mg/kg	03.27.20 11:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		127		126		70-135	%	03.27.20 11:22
o-Terphenyl	121		120		132		70-135	%	03.27.20 11:22

Analytical Method: TPH by SW8015 Mod
Seq Number: 3121138

Matrix: Solid
MB Sample Id: 7699848-1-BLK
Prep Method: SW8015P
Date Prep: 03.26.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.27.20 00:31	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3121224

Matrix: Solid
MB Sample Id: 7699850-1-BLK
Prep Method: SW8015P
Date Prep: 03.26.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	03.27.20 11:01	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3121138
Parent Sample Id: 656942-014

Matrix: Soil
MS Sample Id: 656942-014 S
Prep Method: SW8015P
Date Prep: 03.26.20
MSD Sample Id: 656942-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	998	998	100	984	98	70-135	1	35	mg/kg	03.27.20 01:52	
Diesel Range Organics (DRO)	<49.9	998	1170	117	1150	115	70-135	2	35	mg/kg	03.27.20 01:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	129		129		70-135	%	03.27.20 01:52
o-Terphenyl	132		131		70-135	%	03.27.20 01:52

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

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

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

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: TPH by SW8015 Mod

Seq Number: 3121224

Parent Sample Id: 656968-001

Matrix: Soil

MS Sample Id: 656968-001 S

Prep Method: SW8015P

Date Prep: 03.26.20

MSD Sample Id: 656968-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	947	95	977	98	70-135	3	35	mg/kg	03.27.20 12:24	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	1140	114	70-135	1	35	mg/kg	03.27.20 12:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		126		70-135	%	03.27.20 12:24
o-Terphenyl	129		130		70-135	%	03.27.20 12:24

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121125

MB Sample Id: 7699817-1-BLK

Matrix: Solid

LCS Sample Id: 7699817-1-BKS

Prep Method: SW5030B

Date Prep: 03.26.20

LCSD Sample Id: 7699817-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.114	114	0.109	109	70-130	4	35	mg/kg	03.26.20 10:41	
Toluene	<0.00200	0.100	0.110	110	0.106	106	70-130	4	35	mg/kg	03.26.20 10:41	
Ethylbenzene	<0.00200	0.100	0.104	104	0.100	100	71-129	4	35	mg/kg	03.26.20 10:41	
m,p-Xylenes	<0.00400	0.200	0.216	108	0.208	104	70-135	4	35	mg/kg	03.26.20 10:41	
o-Xylene	<0.00200	0.100	0.108	108	0.104	104	71-133	4	35	mg/kg	03.26.20 10:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		109		108		70-130	%	03.26.20 10:41
4-Bromofluorobenzene	96		92		95		70-130	%	03.26.20 10:41

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121125

Parent Sample Id: 656941-001

Matrix: Soil

MS Sample Id: 656941-001 S

Prep Method: SW5030B

Date Prep: 03.26.20

MSD Sample Id: 656941-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00198	0.0992	0.104	105	0.118	118	70-130	13	35	mg/kg	03.26.20 15:47	
Toluene	<0.00198	0.0992	0.0998	101	0.109	109	70-130	9	35	mg/kg	03.26.20 15:47	
Ethylbenzene	<0.00198	0.0992	0.0938	95	0.0929	93	71-129	1	35	mg/kg	03.26.20 15:47	
m,p-Xylenes	<0.00397	0.198	0.193	97	0.184	92	70-135	5	35	mg/kg	03.26.20 15:47	
o-Xylene	<0.00198	0.0992	0.0981	99	0.0905	91	71-133	8	35	mg/kg	03.26.20 15:47	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		112		70-130	%	03.26.20 15:47
4-Bromofluorobenzene	93		97		70-130	%	03.26.20 15:47

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



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
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Chain of Custody

Work Order No: 1509105

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Project Manager: Chris Mckisson
Company Name: LT Environmental
Address: 820 Megan Ave. Unit B
City, State ZIP: Rifle, CO 81650
Phone: (970) 285 - 9985
Bill to: (if different)
Company Name:
Address:
City, State ZIP:
Email: wmather@ltenv.com, cmckisson@ltenv.com

Program: UST/PST RP Growfields RC perfund
State of Project:
Reporting Level II Level III PST/UST RP Level IV
Deliverables: EDD ADAPT Other:

Project Name: Breakwater Spill Turn Around
Project Number: 102720001 Routine
P.O. Number: Eddy Rush:
Sampler's Name: William Mather Due Date:

SAMPLE RECEIPT Temp Blank: Yes No Wet Ice: Yes No
Temperature (°C): 3.0 Thermometer ID
Received Intact: Yes No Correction Factor: TMM007
Cooler Custody Seals: Yes No Total Containers: 18
Sample Custody Seals: Yes No

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
Background Sample 1	S	3/24/2020	15:07	.5'	1	X	X	X		composite
FS14	S	3/25/2020	9:22	1.5'	1	X	X	X		Composite, Pulverized rock
FS15	S	3/25/2020	9:31	1.5'	1	X	X	X		Composite, Pulverized rock
FS16	S	3/25/2020	9:38	1.5'	1	X	X	X		Composite, Pulverized rock
FS17	S	3/25/2020	9:43	1.5'	1	X	X	X		Composite, Pulverized rock
FS22	S	3/25/2020	11:15	1.5'	1	X	X	X		Composite, Pulverized rock

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
1. [Signature] [Signature] 3/26/20 8:45
2. [Signature] [Signature]
3. [Signature] [Signature]
4. [Signature] [Signature]
5. [Signature] [Signature]
6. [Signature] [Signature]

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.26.2020 08.45.00 AM

Work Order #: 656965

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007


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

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 03.26.2020

Checklist reviewed by:


Jessica Kramer

Date: 03.27.2020



Analytical Report 657364

for

LT Environmental, Inc.

Project Manager: Chris McKisson

Breakwater Spill

102720001

04.06.2020

Collected By: Client

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

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

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

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



04.06.2020

Project Manager: **Chris McKisson**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **657364**

Breakwater Spill

Project Address: Eddy

Chris McKisson:

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) 657364. 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. 657364 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Manager

A Small Business and Minority Company

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Certificate of Analysis Summary 657364

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Mon 03.30.2020 17:27
Report Date: 04.06.2020 14:35
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657364-001	657364-002	657364-003	657364-004	657364-005	657364-006
	<i>Field Id:</i>	FS49	FS50	FS51	FS52	FS53	FS54
	<i>Depth:</i>	1.5- ft	1.5- ft	1.5- ft	1.5- ft	1.5- ft	1.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	03.27.2020 13:53	03.27.2020 13:46	03.27.2020 13:41	03.27.2020 13:42	03.27.2020 13:40	03.27.2020 13:38
BTEX by EPA 8021B	<i>Extracted:</i>	04.01.2020 16:24	04.01.2020 16:24	04.01.2020 16:24	04.01.2020 16:24	04.01.2020 16:24	04.01.2020 16:24
	<i>Analyzed:</i>	04.02.2020 17:07	04.02.2020 17:28	04.02.2020 17:48	04.02.2020 18:09	04.02.2020 18:29	04.02.2020 18:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199
Toluene	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	
Ethylbenzene	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	
m,p-Xylenes	<0.00402 0.00402	<0.00402 0.00402	<0.00402 0.00402	<0.00398 0.00398	<0.00397 0.00397	<0.00398 0.00398	
o-Xylene	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	
Xylenes, Total	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	
Total BTEX	<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00199 0.00199	<0.00198 0.00198	<0.00199 0.00199	
Chloride by EPA 300	<i>Extracted:</i>	04.02.2020 07:19	04.02.2020 07:19	04.02.2020 07:19	04.02.2020 07:19	04.02.2020 07:19	04.02.2020 07:19
	<i>Analyzed:</i>	04.02.2020 08:14	04.02.2020 08:31	04.02.2020 08:37	04.02.2020 08:42	04.02.2020 08:48	04.02.2020 09:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	366 10.0	1960 50.0	372 9.96	6030 50.1	451 9.94	570 9.92
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	04.03.2020 10:00	04.03.2020 10:00	04.03.2020 10:00	04.03.2020 10:00	04.03.2020 10:00	04.03.2020 10:00
	<i>Analyzed:</i>	04.03.2020 13:05	04.03.2020 14:11	04.03.2020 14:33	04.03.2020 14:55	04.03.2020 15:17	04.03.2020 15:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Gasoline Range Hydrocarbons (GRO)	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	
Motor Oil Range Hydrocarbons (MRO)	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	
Total GRO-DRO	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	
Total TPH	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<50.0 50.0	<50.0 50.0	

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
Project Manager



Certificate of Analysis Summary 657364

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Mon 03.30.2020 17:27
Report Date: 04.06.2020 14:35
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657364-007		657364-008		657364-009		657364-010		657364-011		657364-012	
	<i>Field Id:</i>	FS55		FS56		FS57		FS58		FS07		FS08	
	<i>Depth:</i>	1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	03.27.2020 13:56		03.27.2020 13:58		03.27.2020 14:12		03.27.2020 14:15		03.27.2020 14:35		03.27.2020 14:37	
BTEX by EPA 8021B	<i>Extracted:</i>	03.31.2020 19:28		03.31.2020 19:28		03.31.2020 19:28		03.31.2020 19:28		03.31.2020 19:28		03.31.2020 19:28	
	<i>Analyzed:</i>	04.01.2020 06:22		04.01.2020 06:43		04.01.2020 07:03		04.01.2020 07:24		04.01.2020 07:44		04.01.2020 08:04	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
	Benzene	<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
Toluene	<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	
Ethylbenzene	<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	
m,p-Xylenes	<0.00397	0.00397	<0.00397	0.00397	<0.00404	0.00404	<0.00400	0.00400	<0.00400	0.00400	<0.00404	0.00404	
o-Xylene	<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	
Xylenes, Total	<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	
Total BTEX	<0.00198	0.00198	<0.00198	0.00198	<0.00202	0.00202	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	
Chloride by EPA 300	<i>Extracted:</i>	04.02.2020 07:19		04.02.2020 07:19		04.02.2020 07:19		04.02.2020 07:19		04.02.2020 07:19		04.02.2020 07:19	
	<i>Analyzed:</i>	04.02.2020 09:10		04.02.2020 09:16		04.02.2020 09:21		04.02.2020 09:27		04.02.2020 09:32		04.02.2020 09:49	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
	Chloride	2140	49.8	845	9.98	35.9	9.92	695	10.0	1520	9.88	1030	9.96
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00	
	<i>Analyzed:</i>	04.03.2020 16:01		04.03.2020 16:23		04.03.2020 16:44		04.03.2020 17:06		04.03.2020 17:50		04.03.2020 18:14	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
	Gasoline Range Hydrocarbons (GRO)	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0
Diesel Range Organics (DRO)	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	
Motor Oil Range Hydrocarbons (MRO)	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	
Total GRO-DRO	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	
Total TPH	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 657364

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
 Contact: Chris McKisson
 Project Location: Eddy

Date Received in Lab: Mon 03.30.2020 17:27
 Report Date: 04.06.2020 14:35
 Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657364-013		657364-014		657364-015		657364-016		657364-017		657364-018	
	<i>Field Id:</i>	FS09		FS10		FS11		FS12		FS13		FS59	
	<i>Depth:</i>	1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	03.27.2020 14:39		03.27.2020 14:41		03.27.2020 09:00		03.27.2020 09:15		03.27.2020 12:35		03.27.2020 14:35	
BTEX by EPA 8021B	<i>Extracted:</i>	03.31.2020 19:28		03.31.2020 19:28		03.31.2020 19:28		03.31.2020 19:28		03.31.2020 19:28		03.31.2020 19:28	
	<i>Analyzed:</i>	04.01.2020 08:25		04.01.2020 08:45		04.01.2020 09:06		04.01.2020 10:07		04.01.2020 10:27		04.01.2020 10:48	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
	Benzene	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202
Toluene	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
Ethylbenzene	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
m,p-Xylenes	<0.00402	0.00402	<0.00403	0.00403	<0.00403	0.00403	<0.00402	0.00402	<0.00403	0.00403	<0.00404	0.00404	
o-Xylene	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
Xylenes, Total	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
Total BTEX	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
Chloride by EPA 300	<i>Extracted:</i>	04.02.2020 07:19		04.02.2020 07:19		04.02.2020 07:19		04.02.2020 07:19		04.02.2020 07:19		04.02.2020 07:19	
	<i>Analyzed:</i>	04.02.2020 09:55		04.02.2020 10:11		04.02.2020 10:17		04.02.2020 10:23		04.02.2020 10:28		04.02.2020 10:34	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	1160	9.98	516	10.0	463	10.0	688	9.96	416	9.96	4260	49.9	
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00	
	<i>Analyzed:</i>	04.03.2020 18:36		04.03.2020 18:58		04.03.2020 19:20		04.03.2020 19:42		04.03.2020 20:04		04.03.2020 20:26	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
	Gasoline Range Hydrocarbons (GRO)	<49.9	49.9	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0
	Diesel Range Organics (DRO)	<49.9	49.9	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)	<49.9	49.9	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	
Total GRO-DRO	<49.9	49.9	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	
Total TPH	<49.9	49.9	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	

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
Project Manager



Certificate of Analysis Summary 657364

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Mon 03.30.2020 17:27
Report Date: 04.06.2020 14:35
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657364-019		657364-020		657364-021		657364-022		657364-023		657364-024	
	<i>Field Id:</i>	FS60		FS61		FS62		FS01		FS02		FS03	
	<i>Depth:</i>	1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	03.27.2020 14:37		03.27.2020 14:39		03.27.2020 14:41		03.27.2020 09:00		03.27.2020 09:15		03.27.2020 12:35	
BTEX by EPA 8021B	<i>Extracted:</i>	03.31.2020 19:28		03.31.2020 19:28		03.31.2020 19:28		03.31.2020 19:28		04.01.2020 10:06		04.01.2020 10:06	
	<i>Analyzed:</i>	04.01.2020 06:02		04.01.2020 11:08		04.01.2020 11:29		04.01.2020 11:49		04.01.2020 16:56		04.01.2020 18:38	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	
Toluene	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	
Ethylbenzene	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	
m,p-Xylenes	<0.00402	0.00402	<0.00404	0.00404	<0.00403	0.00403	<0.00398	0.00398	<0.00398	0.00398	<0.00397	0.00397	
o-Xylene	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	
Xylenes, Total	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	
Total BTEX	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	
Chloride by EPA 300	<i>Extracted:</i>	04.02.2020 07:19		04.02.2020 07:19		04.02.2020 10:22		04.02.2020 10:22		04.02.2020 10:22		04.02.2020 10:22	
	<i>Analyzed:</i>	04.02.2020 10:51		04.02.2020 10:57		04.02.2020 11:31		04.02.2020 11:47		04.02.2020 11:53		04.02.2020 11:59	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	12.4	9.88	<9.96	9.96	256 X	10.0	207	10.1	586	10.1	1570	9.98	
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00	
	<i>Analyzed:</i>	04.03.2020 20:48		04.03.2020 21:10		04.03.2020 22:58		04.04.2020 00:04		04.04.2020 00:26		04.04.2020 00:47	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	
Diesel Range Organics (DRO)	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	
Motor Oil Range Hydrocarbons (MRO)	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	
Total GRO-DRO	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	
Total TPH	<50.0	50.0	<49.9	49.9	<50.0	50.0	<49.8	49.8	<50.0	50.0	<50.0	50.0	

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 657364

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Mon 03.30.2020 17:27
Report Date: 04.06.2020 14:35
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657364-025	657364-026	657364-027	657364-028	657364-029	657364-030
	<i>Field Id:</i>	FS04	FS05	FS06	FS29	FS30	FS31
	<i>Depth:</i>	1.5- ft	1.5- ft	1.5- ft	1.5- ft	1.5- ft	1.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	03.27.2020 13:02	03.27.2020 13:15	03.27.2020 15:28	03.27.2020 12:44	03.27.2020 13:05	03.27.2020 09:52
BTEX by EPA 8021B	<i>Extracted:</i>	04.01.2020 10:06	04.01.2020 10:06	03.31.2020 17:21	03.31.2020 17:21	03.31.2020 17:21	03.31.2020 17:21
	<i>Analyzed:</i>	04.01.2020 18:58	04.01.2020 19:19	04.01.2020 04:31	04.01.2020 04:51	04.01.2020 05:12	04.01.2020 05:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Toluene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Ethylbenzene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
m,p-Xylenes		<0.00398 0.00398	<0.00401 0.00401	<0.00398 0.00398	<0.00400 0.00400	<0.00396 0.00396	<0.00399 0.00399
o-Xylene		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Xylenes, Total		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Total BTEX		<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00198 0.00198	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	04.02.2020 10:22	04.02.2020 10:22	04.02.2020 10:22	04.02.2020 10:22	04.02.2020 10:22	04.02.2020 10:22
	<i>Analyzed:</i>	04.02.2020 12:04	04.02.2020 12:21	04.02.2020 12:26	04.02.2020 12:32	04.02.2020 12:38	04.02.2020 12:44
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1570 50.1	1550 49.7	1550 49.5	7080 49.9	400 9.96	286 9.98
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	04.03.2020 10:00	04.03.2020 10:00	04.03.2020 10:00	04.03.2020 10:00	04.03.2020 10:00	04.03.2020 10:00
	<i>Analyzed:</i>	04.04.2020 01:09	04.04.2020 01:31	04.04.2020 01:53	04.04.2020 02:15	04.04.2020 02:37	04.04.2020 02:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<50.0 50.0
Total GRO-DRO		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<50.0 50.0
Total TPH		<49.9 49.9	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<50.0 50.0

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 657364

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Mon 03.30.2020 17:27
Report Date: 04.06.2020 14:35
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657364-031		657364-032		657364-033		657364-034		657364-035		657364-036	
	<i>Field Id:</i>	FS32		FS33		FS34		FS35		FS36		FS37	
	<i>Depth:</i>	1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	03.27.2020 10:50		03.27.2020 11:27		03.27.2020 11:39		03.27.2020 11:52		03.27.2020 12:51		03.27.2020 13:04	
BTEX by EPA 8021B	<i>Extracted:</i>	03.31.2020 17:21		03.31.2020 17:21		04.01.2020 10:06		04.01.2020 10:06		04.01.2020 10:06		04.01.2020 10:06	
	<i>Analyzed:</i>	04.01.2020 05:52		04.01.2020 06:13		04.01.2020 19:39		04.01.2020 19:59		04.01.2020 21:01		04.01.2020 21:21	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
	Benzene	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202
Toluene	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	
Ethylbenzene	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	
m,p-Xylenes	<0.00398	0.00398	<0.00398	0.00398	<0.00398	0.00398	<0.00396	0.00396	<0.00399	0.00399	<0.00403	0.00403	
o-Xylene	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	
Xylenes, Total	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	
Total BTEX	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00202	0.00202	
Chloride by EPA 300	<i>Extracted:</i>	04.02.2020 10:22		04.02.2020 10:22		04.02.2020 10:22		04.02.2020 10:22		04.02.2020 10:22		04.02.2020 10:22	
	<i>Analyzed:</i>	04.02.2020 12:50		04.02.2020 13:08		04.02.2020 13:14		04.02.2020 13:32		04.02.2020 13:38		04.02.2020 13:44	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
	Chloride	4560 X	49.6	6100	49.6	3200	49.5	218	9.98	182	9.96	130	9.92
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00	
	<i>Analyzed:</i>	04.04.2020 03:43		04.04.2020 04:05		04.04.2020 04:27		04.04.2020 04:49		04.04.2020 05:10		04.04.2020 05:32	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
	Gasoline Range Hydrocarbons (GRO)	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0
Diesel Range Organics (DRO)	52.8	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	
Motor Oil Range Hydrocarbons (MRO)	<50.0	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	
Total GRO-DRO	52.8	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	
Total TPH	52.8	50.0	<49.9	49.9	<50.0	50.0	<50.0	50.0	<49.9	49.9	<50.0	50.0	

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 657364

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Mon 03.30.2020 17:27
Report Date: 04.06.2020 14:35
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657364-037		657364-038		657364-039		657364-040		657364-041		657364-042	
	<i>Field Id:</i>	FS38		FS39		FS40		FS41		FS42		FS43	
	<i>Depth:</i>	1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	03.27.2020 13:43		03.27.2020 13:48		03.27.2020 14:02		03.27.2020 14:08		03.27.2020 14:24		03.27.2020 14:23	
BTEX by EPA 8021B	<i>Extracted:</i>	04.01.2020 10:06		04.01.2020 10:06		04.01.2020 10:06		04.01.2020 10:06		04.01.2020 10:06		04.01.2020 10:06	
	<i>Analyzed:</i>	04.01.2020 21:41		04.01.2020 22:02		04.01.2020 22:22		04.01.2020 22:43		04.01.2020 23:03		04.01.2020 23:23	
	<i>Units/RL:</i>	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	<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	
Toluene	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	
Ethylbenzene	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	
m,p-Xylenes	<0.00403	0.00403	<0.00400	0.00400	<0.00396	0.00396	<0.00398	0.00398	<0.00399	0.00399	<0.00399	0.00399	
o-Xylene	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	
Xylenes, Total	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	
Total BTEX	<0.00202	0.00202	<0.00200	0.00200	<0.00198	0.00198	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	
Chloride by EPA 300	<i>Extracted:</i>	04.02.2020 10:22		04.02.2020 10:22		04.02.2020 10:22		04.02.2020 10:22		04.02.2020 10:25		04.02.2020 10:25	
	<i>Analyzed:</i>	04.02.2020 13:50		04.02.2020 13:56		04.02.2020 14:02		04.02.2020 14:08		04.02.2020 14:44		04.02.2020 15:03	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	1210	10.0	361	9.96	51.7	10.0	4580	49.8	32.9	9.94	195	9.94	
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 10:00		04.03.2020 13:00		04.03.2020 13:00	
	<i>Analyzed:</i>	04.04.2020 05:54		04.04.2020 06:15		04.04.2020 06:37		04.04.2020 06:59		04.03.2020 13:05		04.03.2020 14:11	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0	
Diesel Range Organics (DRO)	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0	
Motor Oil Range Hydrocarbons (MRO)	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0	
Total GRO-DRO	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0	
Total TPH	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0	

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 657364

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Mon 03.30.2020 17:27
Report Date: 04.06.2020 14:35
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657364-043		657364-044		657364-045		657364-046		657364-047		657364-048	
	<i>Field Id:</i>	FS44		FS45		FS46		FS47		FS48		FS18	
	<i>Depth:</i>	1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	03.27.2020 14:31		03.27.2020 14:35		03.27.2020 14:17		03.27.2020 14:05		03.27.2020 13:56		03.26.2020 10:13	
BTEX by EPA 8021B	<i>Extracted:</i>	04.01.2020 10:06		04.01.2020 10:06		04.01.2020 20:09		04.01.2020 20:09		04.01.2020 20:09		04.01.2020 20:09	
	<i>Analyzed:</i>	04.01.2020 23:44		04.02.2020 00:04		04.02.2020 03:08		04.02.2020 08:54		04.02.2020 09:15		04.02.2020 09:35	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	
Toluene	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	
Ethylbenzene	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	
m,p-Xylenes	<0.00403	0.00403	<0.00402	0.00402	<0.00399	0.00399	<0.00402	0.00402	<0.00398	0.00398	<0.00399	0.00399	
o-Xylene	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	
Xylenes, Total	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	
Total BTEX	<0.00202	0.00202	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	
Chloride by EPA 300	<i>Extracted:</i>	04.02.2020 10:25		04.02.2020 10:25		04.02.2020 10:25		04.02.2020 10:25		04.02.2020 10:25		04.02.2020 10:25	
	<i>Analyzed:</i>	04.02.2020 15:09		04.02.2020 15:15		04.02.2020 15:21		04.02.2020 15:40		04.02.2020 15:46		04.02.2020 15:52	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	46.1	9.88	26.2	9.96	52.2	10.0	57.2	10.0	989	9.92	26.2	9.98	
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	04.03.2020 13:00		04.03.2020 13:00		04.03.2020 13:00		04.03.2020 13:00		04.03.2020 13:00		04.03.2020 13:00	
	<i>Analyzed:</i>	04.03.2020 14:33		04.03.2020 14:55		04.03.2020 15:17		04.03.2020 15:39		04.03.2020 16:01		04.03.2020 16:23	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<49.8	49.8	
Diesel Range Organics (DRO)	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<49.8	49.8	
Motor Oil Range Hydrocarbons (MRO)	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<49.8	49.8	
Total GRO-DRO	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<49.8	49.8	
Total TPH	<50.0	50.0	<49.9	49.9	<49.8	49.8	<50.0	50.0	<49.9	49.9	<49.8	49.8	

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 657364

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Mon 03.30.2020 17:27
Report Date: 04.06.2020 14:35
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657364-049	657364-050	657364-051	657364-052	657364-053	657364-054
	<i>Field Id:</i>	FS19	FS20	FS21	FS23	FS24	FS25
	<i>Depth:</i>	1.5- ft	1.5- ft	1.5- ft	1.5- ft	1.5- ft	1.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	03.26.2020 11:25	03.26.2020 11:30	03.26.2020 11:58	03.26.2020 12:58	03.26.2020 09:56	03.26.2020 10:42
BTEX by EPA 8021B	<i>Extracted:</i>	04.01.2020 20:09	04.01.2020 20:09	04.02.2020 17:35	04.02.2020 17:35	04.02.2020 17:35	04.02.2020 17:35
	<i>Analyzed:</i>	04.02.2020 09:56	04.02.2020 10:16	04.03.2020 00:16	04.03.2020 00:37	04.03.2020 00:57	04.03.2020 01:18
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200
Toluene	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	
Ethylbenzene	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	
m,p-Xylenes	<0.00403 0.00403	<0.00404 0.00404	<0.00399 0.00399	<0.00402 0.00402	<0.00398 0.00398	<0.00400 0.00400	
o-Xylene	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	
Xylenes, Total	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	
Total BTEX	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00201 0.00201	<0.00199 0.00199	<0.00200 0.00200	
Chloride by EPA 300	<i>Extracted:</i>	04.02.2020 10:25	04.02.2020 10:25	04.02.2020 10:25	04.02.2020 10:25	04.02.2020 10:25	04.02.2020 10:25
	<i>Analyzed:</i>	04.02.2020 15:58	04.02.2020 16:04	04.02.2020 16:10	04.02.2020 16:28	04.02.2020 16:34	04.02.2020 16:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	1270 49.9	1090 10.0	34.1 9.96	39.2 9.96	39.9 9.98	1480 10.0
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	04.03.2020 13:00	04.03.2020 13:00	04.03.2020 13:00	04.03.2020 13:00	04.03.2020 13:00	04.03.2020 13:00
	<i>Analyzed:</i>	04.03.2020 16:44	04.03.2020 17:06	04.03.2020 17:50	04.03.2020 18:14	04.03.2020 18:36	04.03.2020 18:58
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Gasoline Range Hydrocarbons (GRO)	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	
Motor Oil Range Hydrocarbons (MRO)	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	
Total GRO-DRO	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	
Total TPH	<50.0 50.0	<49.9 49.9	<49.9 49.9	<49.8 49.8	<50.0 50.0	<49.9 49.9	

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 657364

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Mon 03.30.2020 17:27
Report Date: 04.06.2020 14:35
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657364-055	657364-056	657364-057			
	<i>Field Id:</i>	FS26	FS27	FS28			
	<i>Depth:</i>	1.5- ft	1.5- ft	1.5- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	03.26.2020 11:06	03.26.2020 11:44	03.26.2020 11:47			
BTEX by EPA 8021B	<i>Extracted:</i>	04.02.2020 17:35	04.02.2020 17:35	04.02.2020 17:35			
	<i>Analyzed:</i>	04.03.2020 01:38	04.03.2020 02:59	04.03.2020 03:20			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
	Benzene	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199			
	Toluene	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199			
	Ethylbenzene	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199			
	m,p-Xylenes	<0.00401 0.00401	<0.00403 0.00403	<0.00398 0.00398			
	o-Xylene	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199			
Xylenes, Total	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199				
Total BTEX	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199				
Chloride by EPA 300	<i>Extracted:</i>	04.02.2020 10:25	04.01.2020 12:15	04.01.2020 12:15			
	<i>Analyzed:</i>	04.02.2020 16:58	04.01.2020 18:23	04.01.2020 18:28			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride	2910 50.2	234 10.0	286 10.1				
TPH by SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	04.03.2020 13:00	04.03.2020 13:00	04.03.2020 13:00			
	<i>Analyzed:</i>	04.03.2020 19:20	04.03.2020 19:42	04.03.2020 20:04			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
	Gasoline Range Hydrocarbons (GRO)	<50.0 50.0	<49.9 49.9	<50.0 50.0			
	Diesel Range Organics (DRO)	<50.0 50.0	<49.9 49.9	<50.0 50.0			
	Motor Oil Range Hydrocarbons (MRO)	<50.0 50.0	<49.9 49.9	<50.0 50.0			
	Total GRO-DRO	<50.0 50.0	<49.9 49.9	<50.0 50.0			
Total TPH	<50.0 50.0	<49.9 49.9	<50.0 50.0				

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Jessica Kramer
Project Manager



Sample Cross Reference 657364

LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS49	S	03.27.2020 13:53	1.5 ft	657364-001
FS50	S	03.27.2020 13:46	1.5 ft	657364-002
FS51	S	03.27.2020 13:41	1.5 ft	657364-003
FS52	S	03.27.2020 13:42	1.5 ft	657364-004
FS53	S	03.27.2020 13:40	1.5 ft	657364-005
FS54	S	03.27.2020 13:38	1.5 ft	657364-006
FS55	S	03.27.2020 13:56	1.5 ft	657364-007
FS56	S	03.27.2020 13:58	1.5 ft	657364-008
FS57	S	03.27.2020 14:12	1.5 ft	657364-009
FS58	S	03.27.2020 14:15	1.5 ft	657364-010
FS07	S	03.27.2020 14:35	1.5 ft	657364-011
FS08	S	03.27.2020 14:37	1.5 ft	657364-012
FS09	S	03.27.2020 14:39	1.5 ft	657364-013
FS10	S	03.27.2020 14:41	1.5 ft	657364-014
FS11	S	03.27.2020 09:00	1.5 ft	657364-015
FS12	S	03.27.2020 09:15	1.5 ft	657364-016
FS13	S	03.27.2020 12:35	1.5 ft	657364-017
FS59	S	03.27.2020 14:35	1.5 ft	657364-018
FS60	S	03.27.2020 14:37	1.5 ft	657364-019
FS61	S	03.27.2020 14:39	1.5 ft	657364-020
FS62	S	03.27.2020 14:41	1.5 ft	657364-021
FS01	S	03.27.2020 09:00	1.5 ft	657364-022
FS02	S	03.27.2020 09:15	1.5 ft	657364-023
FS03	S	03.27.2020 12:35	1.5 ft	657364-024
FS04	S	03.27.2020 13:02	1.5 ft	657364-025
FS05	S	03.27.2020 13:15	1.5 ft	657364-026
FS06	S	03.27.2020 15:28	1.5 ft	657364-027
FS29	S	03.27.2020 12:44	1.5 ft	657364-028
FS30	S	03.27.2020 13:05	1.5 ft	657364-029
FS31	S	03.27.2020 09:52	1.5 ft	657364-030
FS32	S	03.27.2020 10:50	1.5 ft	657364-031
FS33	S	03.27.2020 11:27	1.5 ft	657364-032
FS34	S	03.27.2020 11:39	1.5 ft	657364-033
FS35	S	03.27.2020 11:52	1.5 ft	657364-034
FS36	S	03.27.2020 12:51	1.5 ft	657364-035
FS37	S	03.27.2020 13:04	1.5 ft	657364-036
FS38	S	03.27.2020 13:43	1.5 ft	657364-037
FS39	S	03.27.2020 13:48	1.5 ft	657364-038
FS40	S	03.27.2020 14:02	1.5 ft	657364-039
FS41	S	03.27.2020 14:08	1.5 ft	657364-040
FS42	S	03.27.2020 14:24	1.5 ft	657364-041
FS43	S	03.27.2020 14:23	1.5 ft	657364-042
FS44	S	03.27.2020 14:31	1.5 ft	657364-043



Sample Cross Reference 657364

LT Environmental, Inc., Arvada, CO

Breakwater Spill

FS45	S	03.27.2020 14:35	1.5 ft	657364-044
FS46	S	03.27.2020 14:17	1.5 ft	657364-045
FS47	S	03.27.2020 14:05	1.5 ft	657364-046
FS48	S	03.27.2020 13:56	1.5 ft	657364-047
FS18	S	03.26.2020 10:13	1.5 ft	657364-048
FS19	S	03.26.2020 11:25	1.5 ft	657364-049
FS20	S	03.26.2020 11:30	1.5 ft	657364-050
FS21	S	03.26.2020 11:58	1.5 ft	657364-051
FS23	S	03.26.2020 12:58	1.5 ft	657364-052
FS24	S	03.26.2020 09:56	1.5 ft	657364-053
FS25	S	03.26.2020 10:42	1.5 ft	657364-054
FS26	S	03.26.2020 11:06	1.5 ft	657364-055
FS27	S	03.26.2020 11:44	1.5 ft	657364-056
FS28	S	03.26.2020 11:47	1.5 ft	657364-057

**CASE NARRATIVE***Client Name: LT Environmental, Inc.**Project Name: Breakwater Spill*Project ID: 102720001
Work Order Number(s): 657364Report Date: 04.06.2020
Date Received: 03.30.2020**Sample receipt non conformances and comments:****Sample receipt non conformances and comments per sample:**

None

Analytical non conformances and comments:

Batch: LBA-3121565 BTEX by EPA 8021B

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

Batch: LBA-3121570 BTEX by EPA 8021B

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

Batch: LBA-3121698 BTEX by EPA 8021B

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

Batch: LBA-3121699 BTEX by EPA 8021B

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

Batch: LBA-3121792 Chloride by EPA 300

Lab Sample ID 657364-031 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 657364-021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037, -038, -039, -040.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3121835 BTEX by EPA 8021B

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

Batch: LBA-3121837 BTEX by EPA 8021B

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



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS49	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-001	Date Collected: 03.27.2020 13:53	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	366	10.0	mg/kg	04.02.2020 08:14		1

Analytical Method: TPH by SW8015 Mod	Date Prep: 04.03.2020 10:00	Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM		Basis: Wet Weight
Seq Number: 3122016		SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 13:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 13:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 13:05	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 13:05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 13:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	82	%	70-130	04.03.2020 13:05	
o-Terphenyl	84-15-1	94	%	70-130	04.03.2020 13:05	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS49	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-001	Date Collected: 03.27.2020 13:53	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 16:24	Basis: Wet Weight
Seq Number: 3121835		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.02.2020 17:07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.02.2020 17:07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.02.2020 17:07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.02.2020 17:07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.02.2020 17:07	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.02.2020 17:07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.02.2020 17:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	115	%	70-130	04.02.2020 17:07		
4-Bromofluorobenzene	460-00-4	89	%	70-130	04.02.2020 17:07		



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS50	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-002	Date Collected: 03.27.2020 13:46	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1960	50.0	mg/kg	04.02.2020 08:31		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 14:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 14:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 14:11	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 14:11	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 14:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-130	04.03.2020 14:11	
o-Terphenyl	84-15-1	93	%	70-130	04.03.2020 14:11	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS50	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-002	Date Collected: 03.27.2020 13:46	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 16:24	Basis: Wet Weight
Seq Number: 3121835		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.02.2020 17:28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.02.2020 17:28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.02.2020 17:28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.02.2020 17:28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.02.2020 17:28	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.02.2020 17:28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.02.2020 17:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.02.2020 17:28		
4-Bromofluorobenzene	460-00-4	90	%	70-130	04.02.2020 17:28		



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS51	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-003	Date Collected: 03.27.2020 13:41	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	372	9.96	mg/kg	04.02.2020 08:37		1

Analytical Method: TPH by SW8015 Mod	Date Prep: 04.03.2020 10:00	Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM		Basis: Wet Weight
Seq Number: 3122016		SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 14:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 14:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 14:33	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 14:33	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 14:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-130	04.03.2020 14:33	
o-Terphenyl	84-15-1	91	%	70-130	04.03.2020 14:33	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS51** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-003 Date Collected: 03.27.2020 13:41 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.01.2020 16:24 Basis: Wet Weight
 Seq Number: 3121835

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.02.2020 17:48	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.02.2020 17:48	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.02.2020 17:48	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.02.2020 17:48	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.02.2020 17:48	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.02.2020 17:48	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.02.2020 17:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.02.2020 17:48		
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.02.2020 17:48		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS52	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-004	Date Collected: 03.27.2020 13:42	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6030	50.1	mg/kg	04.02.2020 08:42		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.03.2020 14:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.03.2020 14:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.03.2020 14:55	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.03.2020 14:55	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.03.2020 14:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-130	04.03.2020 14:55	
o-Terphenyl	84-15-1	95	%	70-130	04.03.2020 14:55	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS52	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-004	Date Collected: 03.27.2020 13:42	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 16:24	Basis: Wet Weight
Seq Number: 3121835		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.02.2020 18:09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.02.2020 18:09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.02.2020 18:09	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.02.2020 18:09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.02.2020 18:09	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.02.2020 18:09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.02.2020 18:09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.02.2020 18:09		
1,4-Difluorobenzene	540-36-3	114	%	70-130	04.02.2020 18:09		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS53	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-005	Date Collected: 03.27.2020 13:40	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	451	9.94	mg/kg	04.02.2020 08:48		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 15:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 15:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 15:17	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 15:17	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 15:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-130	04.03.2020 15:17	
o-Terphenyl	84-15-1	96	%	70-130	04.03.2020 15:17	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS53**
 Lab Sample Id: 657364-005

Matrix: Soil
 Date Collected: 03.27.2020 13:40

Date Received: 03.30.2020 17:27
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.01.2020 16:24

Basis: Wet Weight

Seq Number: 3121835

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.02.2020 18:29	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.02.2020 18:29	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.02.2020 18:29	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.02.2020 18:29	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.02.2020 18:29	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.02.2020 18:29	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.02.2020 18:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.02.2020 18:29		
4-Bromofluorobenzene	460-00-4	89	%	70-130	04.02.2020 18:29		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS54** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-006 Date Collected: 03.27.2020 13:38 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 07:19 Basis: Wet Weight
 Seq Number: 3121791

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	570	9.92	mg/kg	04.02.2020 09:05		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 10:00 Basis: Wet Weight
 Seq Number: 3122016 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 15:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 15:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 15:39	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 15:39	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 15:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-130	04.03.2020 15:39	
o-Terphenyl	84-15-1	97	%	70-130	04.03.2020 15:39	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS54** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-006 Date Collected: 03.27.2020 13:38 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.01.2020 16:24 Basis: Wet Weight
 Seq Number: 3121835

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.02.2020 18:50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.02.2020 18:50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.02.2020 18:50	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.02.2020 18:50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.02.2020 18:50	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.02.2020 18:50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.02.2020 18:50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.02.2020 18:50		
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.02.2020 18:50		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS55	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-007	Date Collected: 03.27.2020 13:56	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2140	49.8	mg/kg	04.02.2020 09:10		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 16:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 16:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 16:01	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 16:01	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 16:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-130	04.03.2020 16:01	
o-Terphenyl	84-15-1	98	%	70-130	04.03.2020 16:01	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS55	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-007	Date Collected: 03.27.2020 13:56	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 19:28	Basis: Wet Weight
Seq Number: 3121570		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.01.2020 06:22	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.01.2020 06:22	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.01.2020 06:22	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.01.2020 06:22	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.01.2020 06:22	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.01.2020 06:22	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.01.2020 06:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.01.2020 06:22		
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.01.2020 06:22		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS56	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-008	Date Collected: 03.27.2020 13:58	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	845	9.98	mg/kg	04.02.2020 09:16		1

Analytical Method: TPH by SW8015 Mod	Date Prep: 04.03.2020 10:00	Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM		Basis: Wet Weight
Seq Number: 3122016		SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 16:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 16:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 16:23	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 16:23	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 16:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-130	04.03.2020 16:23	
o-Terphenyl	84-15-1	96	%	70-130	04.03.2020 16:23	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS56	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-008	Date Collected: 03.27.2020 13:58	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 19:28	Basis: Wet Weight
Seq Number: 3121570		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.01.2020 06:43	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.01.2020 06:43	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.01.2020 06:43	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.01.2020 06:43	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.01.2020 06:43	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.01.2020 06:43	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.01.2020 06:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.01.2020 06:43		
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.01.2020 06:43		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS57	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-009	Date Collected: 03.27.2020 14:12	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	35.9	9.92	mg/kg	04.02.2020 09:21		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 16:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 16:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 16:44	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 16:44	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 16:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-130	04.03.2020 16:44	
o-Terphenyl	84-15-1	101	%	70-130	04.03.2020 16:44	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS57	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-009	Date Collected: 03.27.2020 14:12	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 19:28	Basis: Wet Weight
Seq Number: 3121570		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 07:03	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 07:03	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 07:03	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.01.2020 07:03	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 07:03	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 07:03	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 07:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.01.2020 07:03		
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.01.2020 07:03		



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: FS58	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-010	Date Collected: 03.27.2020 14:15	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	695	10.0	mg/kg	04.02.2020 09:27		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 17:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 17:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 17:06	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 17:06	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 17:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-130	04.03.2020 17:06	
o-Terphenyl	84-15-1	97	%	70-130	04.03.2020 17:06	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS58	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-010	Date Collected: 03.27.2020 14:15	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 19:28	Basis: Wet Weight
Seq Number: 3121570		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.01.2020 07:24	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.01.2020 07:24	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.01.2020 07:24	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.01.2020 07:24	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.01.2020 07:24	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.01.2020 07:24	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.01.2020 07:24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 07:24		
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.01.2020 07:24		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS07	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-011	Date Collected: 03.27.2020 14:35	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1520	9.88	mg/kg	04.02.2020 09:32		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 17:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 17:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 17:50	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 17:50	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 17:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	70	%	70-130	04.03.2020 17:50	
o-Terphenyl	84-15-1	81	%	70-130	04.03.2020 17:50	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS07** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-011 Date Collected: 03.27.2020 14:35 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.31.2020 19:28 Basis: Wet Weight
 Seq Number: 3121570

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.01.2020 07:44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.01.2020 07:44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.01.2020 07:44	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.01.2020 07:44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.01.2020 07:44	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.01.2020 07:44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.01.2020 07:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 07:44	
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.01.2020 07:44	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS08	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-012	Date Collected: 03.27.2020 14:37	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1030	9.96	mg/kg	04.02.2020 09:49		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 18:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 18:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 18:14	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 18:14	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 18:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-130	04.03.2020 18:14	
o-Terphenyl	84-15-1	98	%	70-130	04.03.2020 18:14	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS08	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-012	Date Collected: 03.27.2020 14:37	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 19:28	Basis: Wet Weight
Seq Number: 3121570		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 08:04	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 08:04	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 08:04	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.01.2020 08:04	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 08:04	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 08:04	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 08:04	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.01.2020 08:04		
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 08:04		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS09	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-013	Date Collected: 03.27.2020 14:39	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1160	9.98	mg/kg	04.02.2020 09:55		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 18:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 18:36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 18:36	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 18:36	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 18:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-130	04.03.2020 18:36	
o-Terphenyl	84-15-1	102	%	70-130	04.03.2020 18:36	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS09	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-013	Date Collected: 03.27.2020 14:39	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 19:28	Basis: Wet Weight
Seq Number: 3121570		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.01.2020 08:25	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.01.2020 08:25	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.01.2020 08:25	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.01.2020 08:25	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.01.2020 08:25	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.01.2020 08:25	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.01.2020 08:25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 08:25		
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.01.2020 08:25		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS10	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-014	Date Collected: 03.27.2020 14:41	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	516	10.0	mg/kg	04.02.2020 10:11		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 18:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 18:58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 18:58	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 18:58	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 18:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-130	04.03.2020 18:58	
o-Terphenyl	84-15-1	98	%	70-130	04.03.2020 18:58	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS10**
 Lab Sample Id: 657364-014

Matrix: Soil
 Date Collected: 03.27.2020 14:41

Date Received: 03.30.2020 17:27
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.31.2020 19:28

Basis: Wet Weight

Seq Number: 3121570

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 08:45	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 08:45	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 08:45	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.01.2020 08:45	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 08:45	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 08:45	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 08:45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	04.01.2020 08:45		
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 08:45		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS11	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-015	Date Collected: 03.27.2020 09:00	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	463	10.0	mg/kg	04.02.2020 10:17		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 19:20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 19:20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 19:20	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 19:20	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 19:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-130	04.03.2020 19:20	
o-Terphenyl	84-15-1	98	%	70-130	04.03.2020 19:20	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS11**
 Lab Sample Id: 657364-015

Matrix: Soil
 Date Collected: 03.27.2020 09:00

Date Received: 03.30.2020 17:27
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.31.2020 19:28

Basis: Wet Weight

Seq Number: 3121570

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 09:06	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 09:06	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 09:06	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.01.2020 09:06	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 09:06	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 09:06	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 09:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 09:06		
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.01.2020 09:06		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS12	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-016	Date Collected: 03.27.2020 09:15	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	688	9.96	mg/kg	04.02.2020 10:23		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 19:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 19:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 19:42	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 19:42	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 19:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-130	04.03.2020 19:42	
o-Terphenyl	84-15-1	99	%	70-130	04.03.2020 19:42	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS12** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-016 Date Collected: 03.27.2020 09:15 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.31.2020 19:28 Basis: Wet Weight
 Seq Number: 3121570

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.01.2020 10:07	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.01.2020 10:07	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.01.2020 10:07	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.01.2020 10:07	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.01.2020 10:07	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.01.2020 10:07	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.01.2020 10:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 10:07	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.01.2020 10:07	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS13	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-017	Date Collected: 03.27.2020 12:35	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	416	9.96	mg/kg	04.02.2020 10:28		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 20:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 20:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 20:04	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 20:04	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 20:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-130	04.03.2020 20:04	
o-Terphenyl	84-15-1	98	%	70-130	04.03.2020 20:04	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS13**
 Lab Sample Id: 657364-017

Matrix: Soil
 Date Collected: 03.27.2020 12:35

Date Received: 03.30.2020 17:27
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.31.2020 19:28

Basis: Wet Weight

Seq Number: 3121570

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 10:27	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 10:27	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 10:27	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.01.2020 10:27	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 10:27	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 10:27	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 10:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.01.2020 10:27		
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 10:27		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS59	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-018	Date Collected: 03.27.2020 14:35	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4260	49.9	mg/kg	04.02.2020 10:34		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 20:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 20:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 20:26	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 20:26	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 20:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-130	04.03.2020 20:26	
o-Terphenyl	84-15-1	99	%	70-130	04.03.2020 20:26	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS59**
 Lab Sample Id: 657364-018

Matrix: Soil
 Date Collected: 03.27.2020 14:35

Date Received: 03.30.2020 17:27
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.31.2020 19:28

Basis: Wet Weight

Seq Number: 3121570

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 10:48	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 10:48	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 10:48	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.01.2020 10:48	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 10:48	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 10:48	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 10:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.01.2020 10:48		
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 10:48		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS60	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-019	Date Collected: 03.27.2020 14:37	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.4	9.88	mg/kg	04.02.2020 10:51		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 20:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 20:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 20:48	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 20:48	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 20:48	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-130	04.03.2020 20:48	
o-Terphenyl	84-15-1	98	%	70-130	04.03.2020 20:48	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS60	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-019	Date Collected: 03.27.2020 14:37	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 19:28	Basis: Wet Weight
Seq Number: 3121570		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.01.2020 06:02	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.01.2020 06:02	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.01.2020 06:02	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.01.2020 06:02	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.01.2020 06:02	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.01.2020 06:02	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.01.2020 06:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.01.2020 06:02		
1,4-Difluorobenzene	540-36-3	110	%	70-130	04.01.2020 06:02		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS61	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-020	Date Collected: 03.27.2020 14:39	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 07:19	Basis: Wet Weight
Seq Number: 3121791		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	04.02.2020 10:57	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122016	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 21:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 21:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 21:10	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 21:10	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 21:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-130	04.03.2020 21:10	
o-Terphenyl	84-15-1	95	%	70-130	04.03.2020 21:10	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS61**
 Lab Sample Id: 657364-020

Matrix: Soil
 Date Collected: 03.27.2020 14:39

Date Received: 03.30.2020 17:27
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.31.2020 19:28

Basis: Wet Weight

Seq Number: 3121570

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 11:08	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 11:08	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 11:08	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.01.2020 11:08	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 11:08	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 11:08	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 11:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	04.01.2020 11:08	
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.01.2020 11:08	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS62	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-021	Date Collected: 03.27.2020 14:41	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	256	10.0	mg/kg	04.02.2020 11:31	X	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 22:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 22:58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 22:58	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 22:58	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 22:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-130	04.03.2020 22:58	
o-Terphenyl	84-15-1	105	%	70-130	04.03.2020 22:58	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS62	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-021	Date Collected: 03.27.2020 14:41	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 19:28	Basis: Wet Weight
Seq Number: 3121570		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 11:29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 11:29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 11:29	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.01.2020 11:29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 11:29	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 11:29	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 11:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 11:29		
4-Bromofluorobenzene	460-00-4	100	%	70-130	04.01.2020 11:29		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS01	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-022	Date Collected: 03.27.2020 09:00	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	207	10.1	mg/kg	04.02.2020 11:47		1

Analytical Method: TPH by SW8015 Mod	Date Prep: 04.03.2020 10:00	Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM		Basis: Wet Weight
Seq Number: 3122018		SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.04.2020 00:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.04.2020 00:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.04.2020 00:04	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.04.2020 00:04	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.04.2020 00:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-130	04.04.2020 00:04	
o-Terphenyl	84-15-1	99	%	70-130	04.04.2020 00:04	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS01	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-022	Date Collected: 03.27.2020 09:00	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 19:28	Basis: Wet Weight
Seq Number: 3121570		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.01.2020 11:49	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.01.2020 11:49	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.01.2020 11:49	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.01.2020 11:49	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.01.2020 11:49	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.01.2020 11:49	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.01.2020 11:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 11:49		
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.01.2020 11:49		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS02	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-023	Date Collected: 03.27.2020 09:15	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	586	10.1	mg/kg	04.02.2020 11:53		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 00:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.04.2020 00:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 00:26	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.04.2020 00:26	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.04.2020 00:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-130	04.04.2020 00:26	
o-Terphenyl	84-15-1	97	%	70-130	04.04.2020 00:26	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS02**
 Lab Sample Id: 657364-023

Matrix: Soil
 Date Collected: 03.27.2020 09:15

Date Received: 03.30.2020 17:27
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.01.2020 10:06

Basis: Wet Weight

Seq Number: 3121699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.01.2020 16:56	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.01.2020 16:56	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.01.2020 16:56	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.01.2020 16:56	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.01.2020 16:56	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.01.2020 16:56	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.01.2020 16:56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	04.01.2020 16:56		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.01.2020 16:56		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS03	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-024	Date Collected: 03.27.2020 12:35	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1570	9.98	mg/kg	04.02.2020 11:59		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 00:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.04.2020 00:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 00:47	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.04.2020 00:47	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.04.2020 00:47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-130	04.04.2020 00:47	
o-Terphenyl	84-15-1	98	%	70-130	04.04.2020 00:47	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS03	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-024	Date Collected: 03.27.2020 12:35	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 10:06	Basis: Wet Weight
Seq Number: 3121699		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.01.2020 18:38	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.01.2020 18:38	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.01.2020 18:38	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.01.2020 18:38	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.01.2020 18:38	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.01.2020 18:38	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.01.2020 18:38	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.01.2020 18:38		
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 18:38		



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: FS04	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-025	Date Collected: 03.27.2020 13:02	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1570	50.1	mg/kg	04.02.2020 12:04		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.04.2020 01:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.04.2020 01:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.04.2020 01:09	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.04.2020 01:09	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.04.2020 01:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-130	04.04.2020 01:09	
o-Terphenyl	84-15-1	99	%	70-130	04.04.2020 01:09	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS04	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-025	Date Collected: 03.27.2020 13:02	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 10:06	Basis: Wet Weight
Seq Number: 3121699		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.01.2020 18:58	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.01.2020 18:58	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.01.2020 18:58	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.01.2020 18:58	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.01.2020 18:58	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.01.2020 18:58	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.01.2020 18:58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	04.01.2020 18:58		
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.01.2020 18:58		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS05	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-026	Date Collected: 03.27.2020 13:15	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1550	49.7	mg/kg	04.02.2020 12:21		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 01:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.04.2020 01:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 01:31	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.04.2020 01:31	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.04.2020 01:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-130	04.04.2020 01:31	
o-Terphenyl	84-15-1	101	%	70-130	04.04.2020 01:31	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS05	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-026	Date Collected: 03.27.2020 13:15	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 10:06	Basis: Wet Weight
Seq Number: 3121699		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.01.2020 19:19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.01.2020 19:19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.01.2020 19:19	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.01.2020 19:19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.01.2020 19:19	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.01.2020 19:19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.01.2020 19:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	101	%	70-130	04.01.2020 19:19		
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 19:19		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS06	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-027	Date Collected: 03.27.2020 15:28	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1550	49.5	mg/kg	04.02.2020 12:26		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.04.2020 01:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.04.2020 01:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.04.2020 01:53	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.04.2020 01:53	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.04.2020 01:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-130	04.04.2020 01:53	
o-Terphenyl	84-15-1	100	%	70-130	04.04.2020 01:53	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS06	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-027	Date Collected: 03.27.2020 15:28	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 17:21	Basis: Wet Weight
Seq Number: 3121565		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.01.2020 04:31	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.01.2020 04:31	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.01.2020 04:31	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.01.2020 04:31	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.01.2020 04:31	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.01.2020 04:31	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.01.2020 04:31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	04.01.2020 04:31		
1,4-Difluorobenzene	540-36-3	116	%	70-130	04.01.2020 04:31		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS29	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-028	Date Collected: 03.27.2020 12:44	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7080	49.9	mg/kg	04.02.2020 12:32		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.04.2020 02:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.04.2020 02:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.04.2020 02:15	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.04.2020 02:15	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.04.2020 02:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-130	04.04.2020 02:15	
o-Terphenyl	84-15-1	103	%	70-130	04.04.2020 02:15	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS29** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-028 Date Collected: 03.27.2020 12:44 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 03.31.2020 17:21 Basis: Wet Weight
 Seq Number: 3121565

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.01.2020 04:51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.01.2020 04:51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.01.2020 04:51	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.01.2020 04:51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.01.2020 04:51	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.01.2020 04:51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.01.2020 04:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.01.2020 04:51	
1,4-Difluorobenzene	540-36-3	116	%	70-130	04.01.2020 04:51	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS30	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-029	Date Collected: 03.27.2020 13:05	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	400	9.96	mg/kg	04.02.2020 12:38		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 02:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.04.2020 02:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 02:37	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.04.2020 02:37	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.04.2020 02:37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-130	04.04.2020 02:37	
o-Terphenyl	84-15-1	101	%	70-130	04.04.2020 02:37	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS30	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-029	Date Collected: 03.27.2020 13:05	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 17:21	Basis: Wet Weight
Seq Number: 3121565		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.01.2020 05:12	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.01.2020 05:12	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.01.2020 05:12	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	04.01.2020 05:12	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.01.2020 05:12	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.01.2020 05:12	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.01.2020 05:12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.01.2020 05:12		
1,4-Difluorobenzene	540-36-3	115	%	70-130	04.01.2020 05:12		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS31	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-030	Date Collected: 03.27.2020 09:52	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	286	9.98	mg/kg	04.02.2020 12:44		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 02:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.04.2020 02:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 02:59	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.04.2020 02:59	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.04.2020 02:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	80	%	70-130	04.04.2020 02:59	
o-Terphenyl	84-15-1	91	%	70-130	04.04.2020 02:59	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS31	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-030	Date Collected: 03.27.2020 09:52	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 17:21	Basis: Wet Weight
Seq Number: 3121565		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.01.2020 05:32	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.01.2020 05:32	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.01.2020 05:32	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.01.2020 05:32	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.01.2020 05:32	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.01.2020 05:32	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.01.2020 05:32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	89	%	70-130	04.01.2020 05:32		
1,4-Difluorobenzene	540-36-3	114	%	70-130	04.01.2020 05:32		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS32	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-031	Date Collected: 03.27.2020 10:50	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4560	49.6	mg/kg	04.02.2020 12:50	X	5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 03:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	52.8	50.0	mg/kg	04.04.2020 03:43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 03:43	U	1
Total GRO-DRO	PHC628	52.8	50.0	mg/kg	04.04.2020 03:43		1
Total TPH	PHC635	52.8	50.0	mg/kg	04.04.2020 03:43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	83	%	70-130	04.04.2020 03:43	
o-Terphenyl	84-15-1	96	%	70-130	04.04.2020 03:43	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS32	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-031	Date Collected: 03.27.2020 10:50	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 17:21	Basis: Wet Weight
Seq Number: 3121565		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.01.2020 05:52	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.01.2020 05:52	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.01.2020 05:52	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.01.2020 05:52	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.01.2020 05:52	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.01.2020 05:52	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.01.2020 05:52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.01.2020 05:52		
1,4-Difluorobenzene	540-36-3	116	%	70-130	04.01.2020 05:52		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS33	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-032	Date Collected: 03.27.2020 11:27	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6100	49.6	mg/kg	04.02.2020 13:08		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.04.2020 04:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.04.2020 04:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.04.2020 04:05	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.04.2020 04:05	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.04.2020 04:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-130	04.04.2020 04:05	
o-Terphenyl	84-15-1	97	%	70-130	04.04.2020 04:05	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS33	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-032	Date Collected: 03.27.2020 11:27	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 03.31.2020 17:21	Basis: Wet Weight
Seq Number: 3121565		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.01.2020 06:13	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.01.2020 06:13	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.01.2020 06:13	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.01.2020 06:13	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.01.2020 06:13	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.01.2020 06:13	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.01.2020 06:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.01.2020 06:13		
1,4-Difluorobenzene	540-36-3	115	%	70-130	04.01.2020 06:13		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS34** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-033 Date Collected: 03.27.2020 11:39 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:22 Basis: Wet Weight
 Seq Number: 3121792

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3200	49.5	mg/kg	04.02.2020 13:14		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 10:00 Basis: Wet Weight
 Seq Number: 3122018 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 04:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.04.2020 04:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 04:27	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.04.2020 04:27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.04.2020 04:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-130	04.04.2020 04:27	
o-Terphenyl	84-15-1	101	%	70-130	04.04.2020 04:27	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS34** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-033 Date Collected: 03.27.2020 11:39 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.01.2020 10:06 Basis: Wet Weight
 Seq Number: 3121699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.01.2020 19:39	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.01.2020 19:39	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.01.2020 19:39	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.01.2020 19:39	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.01.2020 19:39	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.01.2020 19:39	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.01.2020 19:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.01.2020 19:39	
1,4-Difluorobenzene	540-36-3	110	%	70-130	04.01.2020 19:39	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS35	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-034	Date Collected: 03.27.2020 11:52	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	218	9.98	mg/kg	04.02.2020 13:32		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 04:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.04.2020 04:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 04:49	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.04.2020 04:49	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.04.2020 04:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-130	04.04.2020 04:49	
o-Terphenyl	84-15-1	100	%	70-130	04.04.2020 04:49	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS35	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-034	Date Collected: 03.27.2020 11:52	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 10:06	Basis: Wet Weight
Seq Number: 3121699		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.01.2020 19:59	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.01.2020 19:59	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.01.2020 19:59	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	04.01.2020 19:59	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.01.2020 19:59	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.01.2020 19:59	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.01.2020 19:59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	04.01.2020 19:59		
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.01.2020 19:59		



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS36** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-035 Date Collected: 03.27.2020 12:51 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:22 Basis: Wet Weight
 Seq Number: 3121792

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	182	9.96	mg/kg	04.02.2020 13:38		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 10:00 Basis: Wet Weight
 Seq Number: 3122018 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.04.2020 05:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.04.2020 05:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.04.2020 05:10	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.04.2020 05:10	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.04.2020 05:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-130	04.04.2020 05:10	
o-Terphenyl	84-15-1	103	%	70-130	04.04.2020 05:10	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS36	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-035	Date Collected: 03.27.2020 12:51	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 10:06	Basis: Wet Weight
Seq Number: 3121699		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.01.2020 21:01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.01.2020 21:01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.01.2020 21:01	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.01.2020 21:01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.01.2020 21:01	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.01.2020 21:01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.01.2020 21:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 21:01	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.01.2020 21:01	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS37	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-036	Date Collected: 03.27.2020 13:04	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	130	9.92	mg/kg	04.02.2020 13:44		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 05:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.04.2020 05:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 05:32	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.04.2020 05:32	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.04.2020 05:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-130	04.04.2020 05:32	
o-Terphenyl	84-15-1	101	%	70-130	04.04.2020 05:32	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS37	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-036	Date Collected: 03.27.2020 13:04	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 10:06	Basis: Wet Weight
Seq Number: 3121699		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 21:21	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 21:21	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 21:21	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.01.2020 21:21	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 21:21	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 21:21	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 21:21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	04.01.2020 21:21		
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.01.2020 21:21		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS38	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-037	Date Collected: 03.27.2020 13:43	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1210	10.0	mg/kg	04.02.2020 13:50		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 05:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.04.2020 05:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 05:54	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.04.2020 05:54	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.04.2020 05:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-130	04.04.2020 05:54	
o-Terphenyl	84-15-1	99	%	70-130	04.04.2020 05:54	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS38** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-037 Date Collected: 03.27.2020 13:43 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.01.2020 10:06 Basis: Wet Weight
 Seq Number: 3121699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 21:41	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 21:41	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 21:41	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.01.2020 21:41	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 21:41	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 21:41	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 21:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	110	%	70-130	04.01.2020 21:41	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.01.2020 21:41	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS39	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-038	Date Collected: 03.27.2020 13:48	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	361	9.96	mg/kg	04.02.2020 13:56		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.04.2020 06:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.04.2020 06:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.04.2020 06:15	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.04.2020 06:15	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.04.2020 06:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-130	04.04.2020 06:15	
o-Terphenyl	84-15-1	106	%	70-130	04.04.2020 06:15	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS39	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-038	Date Collected: 03.27.2020 13:48	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 10:06	Basis: Wet Weight
Seq Number: 3121699		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.01.2020 22:02	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.01.2020 22:02	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.01.2020 22:02	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.01.2020 22:02	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.01.2020 22:02	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.01.2020 22:02	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.01.2020 22:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 22:02		
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.01.2020 22:02		



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: FS40	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-039	Date Collected: 03.27.2020 14:02	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.7	10.0	mg/kg	04.02.2020 14:02		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.04.2020 06:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.04.2020 06:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.04.2020 06:37	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.04.2020 06:37	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.04.2020 06:37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-130	04.04.2020 06:37	
o-Terphenyl	84-15-1	99	%	70-130	04.04.2020 06:37	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS40	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-039	Date Collected: 03.27.2020 14:02	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 10:06	Basis: Wet Weight
Seq Number: 3121699		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.01.2020 22:22	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.01.2020 22:22	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.01.2020 22:22	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	04.01.2020 22:22	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.01.2020 22:22	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.01.2020 22:22	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.01.2020 22:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.01.2020 22:22		
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 22:22		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS41	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-040	Date Collected: 03.27.2020 14:08	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:22	Basis: Wet Weight
Seq Number: 3121792		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4580	49.8	mg/kg	04.02.2020 14:08		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 10:00
Seq Number: 3122018	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.04.2020 06:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.04.2020 06:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.04.2020 06:59	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.04.2020 06:59	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.04.2020 06:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-130	04.04.2020 06:59	
o-Terphenyl	84-15-1	102	%	70-130	04.04.2020 06:59	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS41	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-040	Date Collected: 03.27.2020 14:08	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 10:06	Basis: Wet Weight
Seq Number: 3121699		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.01.2020 22:43	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.01.2020 22:43	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.01.2020 22:43	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.01.2020 22:43	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.01.2020 22:43	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.01.2020 22:43	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.01.2020 22:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 22:43		
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.01.2020 22:43		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS42	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-041	Date Collected: 03.27.2020 14:24	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:25	Basis: Wet Weight
Seq Number: 3121793		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32.9	9.94	mg/kg	04.02.2020 14:44		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 13:00
Seq Number: 3122021	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 13:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 13:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 13:05	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 13:05	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 13:05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-130	04.03.2020 13:05	
o-Terphenyl	84-15-1	110	%	70-130	04.03.2020 13:05	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS42**
 Lab Sample Id: 657364-041

Matrix: Soil
 Date Collected: 03.27.2020 14:24

Date Received: 03.30.2020 17:27
 Sample Depth: 1.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.01.2020 10:06

Basis: Wet Weight

Seq Number: 3121699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.01.2020 23:03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.01.2020 23:03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.01.2020 23:03	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.01.2020 23:03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.01.2020 23:03	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.01.2020 23:03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.01.2020 23:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	70-130	04.01.2020 23:03	
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.01.2020 23:03	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: FS43	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-042	Date Collected: 03.27.2020 14:23	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:25	Basis: Wet Weight
Seq Number: 3121793		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	195	9.94	mg/kg	04.02.2020 15:03		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 13:00
Seq Number: 3122021	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 14:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 14:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 14:11	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 14:11	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 14:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-130	04.03.2020 14:11	
o-Terphenyl	84-15-1	103	%	70-130	04.03.2020 14:11	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS43** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-042 Date Collected: 03.27.2020 14:23 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.01.2020 10:06 Basis: Wet Weight
 Seq Number: 3121699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.01.2020 23:23	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.01.2020 23:23	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.01.2020 23:23	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.01.2020 23:23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.01.2020 23:23	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.01.2020 23:23	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.01.2020 23:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	04.01.2020 23:23	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.01.2020 23:23	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS44	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-043	Date Collected: 03.27.2020 14:31	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:25	Basis: Wet Weight
Seq Number: 3121793		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	46.1	9.88	mg/kg	04.02.2020 15:09		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 13:00
Seq Number: 3122021	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 14:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 14:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 14:33	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 14:33	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 14:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-130	04.03.2020 14:33	
o-Terphenyl	84-15-1	108	%	70-130	04.03.2020 14:33	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS44	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-043	Date Collected: 03.27.2020 14:31	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 10:06	Basis: Wet Weight
Seq Number: 3121699		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.01.2020 23:44	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.01.2020 23:44	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.01.2020 23:44	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.01.2020 23:44	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.01.2020 23:44	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.01.2020 23:44	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.01.2020 23:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.01.2020 23:44	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.01.2020 23:44	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS45	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-044	Date Collected: 03.27.2020 14:35	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:25	Basis: Wet Weight
Seq Number: 3121793		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26.2	9.96	mg/kg	04.02.2020 15:15		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 13:00
Seq Number: 3122021	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 14:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 14:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 14:55	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 14:55	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 14:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-130	04.03.2020 14:55	
o-Terphenyl	84-15-1	101	%	70-130	04.03.2020 14:55	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS45** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-044 Date Collected: 03.27.2020 14:35 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.01.2020 10:06 Basis: Wet Weight
 Seq Number: 3121699

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.02.2020 00:04	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.02.2020 00:04	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.02.2020 00:04	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.02.2020 00:04	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.02.2020 00:04	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.02.2020 00:04	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.02.2020 00:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.02.2020 00:04	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.02.2020 00:04	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS46	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-045	Date Collected: 03.27.2020 14:17	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:25	Basis: Wet Weight
Seq Number: 3121793		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	52.2	10.0	mg/kg	04.02.2020 15:21		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 13:00
Seq Number: 3122021	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.03.2020 15:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.03.2020 15:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.03.2020 15:17	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.03.2020 15:17	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.03.2020 15:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-130	04.03.2020 15:17	
o-Terphenyl	84-15-1	102	%	70-130	04.03.2020 15:17	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS46	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-045	Date Collected: 03.27.2020 14:17	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 20:09	Basis: Wet Weight
Seq Number: 3121698		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.02.2020 03:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.02.2020 03:08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.02.2020 03:08	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.02.2020 03:08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.02.2020 03:08	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.02.2020 03:08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.02.2020 03:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.02.2020 03:08		
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.02.2020 03:08		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS47** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-046 Date Collected: 03.27.2020 14:05 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:25 Basis: Wet Weight
 Seq Number: 3121793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	57.2	10.0	mg/kg	04.02.2020 15:40		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 13:00 Basis: Wet Weight
 Seq Number: 3122021 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 15:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 15:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 15:39	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 15:39	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 15:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-130	04.03.2020 15:39	
o-Terphenyl	84-15-1	104	%	70-130	04.03.2020 15:39	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS47** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-046 Date Collected: 03.27.2020 14:05 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.01.2020 20:09 Basis: Wet Weight
 Seq Number: 3121698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.02.2020 08:54	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.02.2020 08:54	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.02.2020 08:54	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.02.2020 08:54	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.02.2020 08:54	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.02.2020 08:54	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.02.2020 08:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.02.2020 08:54	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.02.2020 08:54	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS48** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-047 Date Collected: 03.27.2020 13:56 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:25 Basis: Wet Weight
 Seq Number: 3121793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	989	9.92	mg/kg	04.02.2020 15:46		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 13:00 Basis: Wet Weight
 Seq Number: 3122021 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 16:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 16:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 16:01	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 16:01	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 16:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-130	04.03.2020 16:01	
o-Terphenyl	84-15-1	119	%	70-130	04.03.2020 16:01	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS48	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-047	Date Collected: 03.27.2020 13:56	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 20:09	Basis: Wet Weight
Seq Number: 3121698		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.02.2020 09:15	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.02.2020 09:15	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.02.2020 09:15	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.02.2020 09:15	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.02.2020 09:15	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.02.2020 09:15	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.02.2020 09:15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	04.02.2020 09:15		
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.02.2020 09:15		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS18** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-048 Date Collected: 03.26.2020 10:13 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:25 Basis: Wet Weight
 Seq Number: 3121793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26.2	9.98	mg/kg	04.02.2020 15:52		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 13:00 Basis: Wet Weight
 Seq Number: 3122021 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.03.2020 16:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.03.2020 16:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.03.2020 16:23	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.03.2020 16:23	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.03.2020 16:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-130	04.03.2020 16:23	
o-Terphenyl	84-15-1	98	%	70-130	04.03.2020 16:23	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS18	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-048	Date Collected: 03.26.2020 10:13	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 20:09	Basis: Wet Weight
Seq Number: 3121698		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.02.2020 09:35	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.02.2020 09:35	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.02.2020 09:35	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.02.2020 09:35	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.02.2020 09:35	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.02.2020 09:35	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.02.2020 09:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.02.2020 09:35	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.02.2020 09:35	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS19** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-049 Date Collected: 03.26.2020 11:25 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:25 Basis: Wet Weight
 Seq Number: 3121793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1270	49.9	mg/kg	04.02.2020 15:58		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 13:00 Basis: Wet Weight
 Seq Number: 3122021 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 16:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 16:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 16:44	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 16:44	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 16:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-130	04.03.2020 16:44	
o-Terphenyl	84-15-1	107	%	70-130	04.03.2020 16:44	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS19** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-049 Date Collected: 03.26.2020 11:25 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.01.2020 20:09 Basis: Wet Weight
 Seq Number: 3121698

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.02.2020 09:56	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.02.2020 09:56	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.02.2020 09:56	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.02.2020 09:56	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.02.2020 09:56	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.02.2020 09:56	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.02.2020 09:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.02.2020 09:56	
1,4-Difluorobenzene	540-36-3	111	%	70-130	04.02.2020 09:56	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS20** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-050 Date Collected: 03.26.2020 11:30 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:25 Basis: Wet Weight
 Seq Number: 3121793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1090	10.0	mg/kg	04.02.2020 16:04		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 13:00 Basis: Wet Weight
 Seq Number: 3122021 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 17:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 17:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 17:06	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 17:06	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 17:06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-130	04.03.2020 17:06	
o-Terphenyl	84-15-1	108	%	70-130	04.03.2020 17:06	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS20	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-050	Date Collected: 03.26.2020 11:30	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 20:09	Basis: Wet Weight
Seq Number: 3121698		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.02.2020 10:16	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.02.2020 10:16	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.02.2020 10:16	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.02.2020 10:16	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.02.2020 10:16	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.02.2020 10:16	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.02.2020 10:16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	110	%	70-130	04.02.2020 10:16		
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.02.2020 10:16		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS21** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-051 Date Collected: 03.26.2020 11:58 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:25 Basis: Wet Weight
 Seq Number: 3121793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34.1	9.96	mg/kg	04.02.2020 16:10		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 13:00 Basis: Wet Weight
 Seq Number: 3122021 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 17:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 17:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 17:50	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 17:50	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 17:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-130	04.03.2020 17:50	
o-Terphenyl	84-15-1	103	%	70-130	04.03.2020 17:50	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS21	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-051	Date Collected: 03.26.2020 11:58	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 17:35	Basis: Wet Weight
Seq Number: 3121837		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.03.2020 00:16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.03.2020 00:16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.03.2020 00:16	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.03.2020 00:16	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.03.2020 00:16	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.03.2020 00:16	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.03.2020 00:16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.03.2020 00:16		
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.03.2020 00:16		



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS23** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-052 Date Collected: 03.26.2020 12:58 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:25 Basis: Wet Weight
 Seq Number: 3121793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.2	9.96	mg/kg	04.02.2020 16:28		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 13:00 Basis: Wet Weight
 Seq Number: 3122021 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.03.2020 18:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.03.2020 18:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.03.2020 18:14	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.03.2020 18:14	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.03.2020 18:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-130	04.03.2020 18:14	
o-Terphenyl	84-15-1	101	%	70-130	04.03.2020 18:14	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS23	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-052	Date Collected: 03.26.2020 12:58	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 17:35	Basis: Wet Weight
Seq Number: 3121837		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.03.2020 00:37	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.03.2020 00:37	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.03.2020 00:37	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.03.2020 00:37	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.03.2020 00:37	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.03.2020 00:37	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.03.2020 00:37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.03.2020 00:37	
1,4-Difluorobenzene	540-36-3	114	%	70-130	04.03.2020 00:37	



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LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS24** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-053 Date Collected: 03.26.2020 09:56 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:25 Basis: Wet Weight
 Seq Number: 3121793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	39.9	9.98	mg/kg	04.02.2020 16:34		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 13:00 Basis: Wet Weight
 Seq Number: 3122021 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 18:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 18:36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 18:36	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 18:36	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 18:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-130	04.03.2020 18:36	
o-Terphenyl	84-15-1	97	%	70-130	04.03.2020 18:36	



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LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS24** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-053 Date Collected: 03.26.2020 09:56 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 17:35 Basis: Wet Weight
 Seq Number: 3121837

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.03.2020 00:57	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.03.2020 00:57	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.03.2020 00:57	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.03.2020 00:57	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.03.2020 00:57	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.03.2020 00:57	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.03.2020 00:57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.03.2020 00:57	
1,4-Difluorobenzene	540-36-3	110	%	70-130	04.03.2020 00:57	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS25** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-054 Date Collected: 03.26.2020 10:42 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 10:25 Basis: Wet Weight
 Seq Number: 3121793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1480	10.0	mg/kg	04.02.2020 16:52		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 13:00 Basis: Wet Weight
 Seq Number: 3122021 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 18:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 18:58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 18:58	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 18:58	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 18:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	78	%	70-130	04.03.2020 18:58	
o-Terphenyl	84-15-1	84	%	70-130	04.03.2020 18:58	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS25** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-054 Date Collected: 03.26.2020 10:42 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 17:35 Basis: Wet Weight
 Seq Number: 3121837

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.03.2020 01:18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.03.2020 01:18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.03.2020 01:18	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.03.2020 01:18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.03.2020 01:18	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.03.2020 01:18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.03.2020 01:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.03.2020 01:18	
1,4-Difluorobenzene	540-36-3	112	%	70-130	04.03.2020 01:18	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS26	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-055	Date Collected: 03.26.2020 11:06	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 10:25	Basis: Wet Weight
Seq Number: 3121793		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2910	50.2	mg/kg	04.02.2020 16:58		5

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 13:00
Seq Number: 3122021	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 19:20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 19:20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 19:20	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 19:20	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 19:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	04.03.2020 19:20	
o-Terphenyl	84-15-1	110	%	70-130	04.03.2020 19:20	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id: **FS26** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-055 Date Collected: 03.26.2020 11:06 Sample Depth: 1.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.02.2020 17:35 Basis: Wet Weight
 Seq Number: 3121837

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.03.2020 01:38	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.03.2020 01:38	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.03.2020 01:38	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.03.2020 01:38	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.03.2020 01:38	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.03.2020 01:38	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.03.2020 01:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.03.2020 01:38	
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.03.2020 01:38	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS27	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-056	Date Collected: 03.26.2020 11:44	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.01.2020 12:15	Basis: Wet Weight
Seq Number: 3121701		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	234	10.0	mg/kg	04.01.2020 18:23		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DVM	% Moisture:
Analyst: ARM	Date Prep: 04.03.2020 13:00
Seq Number: 3122021	Basis: Wet Weight
	SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.03.2020 19:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.03.2020 19:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.03.2020 19:42	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.03.2020 19:42	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.03.2020 19:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-130	04.03.2020 19:42	
o-Terphenyl	84-15-1	102	%	70-130	04.03.2020 19:42	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS27	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-056	Date Collected: 03.26.2020 11:44	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 17:35	Basis: Wet Weight
Seq Number: 3121837		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.03.2020 02:59	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.03.2020 02:59	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.03.2020 02:59	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.03.2020 02:59	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.03.2020 02:59	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.03.2020 02:59	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.03.2020 02:59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.03.2020 02:59		
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.03.2020 02:59		



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **FS28** Matrix: Soil Date Received: 03.30.2020 17:27
 Lab Sample Id: 657364-057 Date Collected: 03.26.2020 11:47 Sample Depth: 1.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.01.2020 12:15 Basis: Wet Weight
 Seq Number: 3121701

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	286	10.1	mg/kg	04.01.2020 18:28		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM % Moisture:
 Analyst: ARM Date Prep: 04.03.2020 13:00 Basis: Wet Weight
 Seq Number: 3122021 SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.03.2020 20:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.03.2020 20:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.03.2020 20:04	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.03.2020 20:04	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.03.2020 20:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-130	04.03.2020 20:04	
o-Terphenyl	84-15-1	107	%	70-130	04.03.2020 20:04	



Certificate of Analytical Results 657364

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS28	Matrix: Soil	Date Received: 03.30.2020 17:27
Lab Sample Id: 657364-057	Date Collected: 03.26.2020 11:47	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.02.2020 17:35	Basis: Wet Weight
Seq Number: 3121837		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.03.2020 03:20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.03.2020 03:20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.03.2020 03:20	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.03.2020 03:20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.03.2020 03:20	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.03.2020 03:20	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.03.2020 03:20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.03.2020 03:20		
1,4-Difluorobenzene	540-36-3	113	%	70-130	04.03.2020 03:20		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: Chloride by EPA 300

Seq Number: 3121701
MB Sample Id: 7700319-1-BLK

Matrix: Solid
LCS Sample Id: 7700319-1-BKS

Prep Method: E300P
Date Prep: 04.01.2020
LCSD Sample Id: 7700319-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	266	106	267	107	90-110	0	20	mg/kg	04.01.2020 15:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3121791
MB Sample Id: 7700321-1-BLK

Matrix: Solid
LCS Sample Id: 7700321-1-BKS

Prep Method: E300P
Date Prep: 04.02.2020
LCSD Sample Id: 7700321-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	257	103	258	103	90-110	0	20	mg/kg	04.02.2020 08:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3121792
MB Sample Id: 7700324-1-BLK

Matrix: Solid
LCS Sample Id: 7700324-1-BKS

Prep Method: E300P
Date Prep: 04.02.2020
LCSD Sample Id: 7700324-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	269	108	272	109	90-110	1	20	mg/kg	04.02.2020 11:19	

Analytical Method: Chloride by EPA 300

Seq Number: 3121793
MB Sample Id: 7700325-1-BLK

Matrix: Solid
LCS Sample Id: 7700325-1-BKS

Prep Method: E300P
Date Prep: 04.02.2020
LCSD Sample Id: 7700325-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	269	108	273	109	90-110	1	20	mg/kg	04.02.2020 14:32	

Analytical Method: Chloride by EPA 300

Seq Number: 3121701
Parent Sample Id: 657373-003

Matrix: Soil
MS Sample Id: 657373-003 S

Prep Method: E300P
Date Prep: 04.01.2020
MSD Sample Id: 657373-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	70.0	200	282	106	284	107	90-110	1	20	mg/kg	04.01.2020 17:15	

Analytical Method: Chloride by EPA 300

Seq Number: 3121701
Parent Sample Id: 657518-001

Matrix: Soil
MS Sample Id: 657518-001 S

Prep Method: E300P
Date Prep: 04.01.2020
MSD Sample Id: 657518-001 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	200	232	106	233	107	90-110	0	20	mg/kg	04.01.2020 15:49	

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

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

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

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: Chloride by EPA 300

Seq Number: 3121791
Parent Sample Id: 657364-001

Matrix: Soil
MS Sample Id: 657364-001 S

Prep Method: E300P
Date Prep: 04.02.2020
MSD Sample Id: 657364-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	366	200	576	105	577	106	90-110	0	20	mg/kg	04.02.2020 08:20	

Analytical Method: Chloride by EPA 300

Seq Number: 3121791
Parent Sample Id: 657364-011

Matrix: Soil
MS Sample Id: 657364-011 S

Prep Method: E300P
Date Prep: 04.02.2020
MSD Sample Id: 657364-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1520	198	1710	96	1710	96	90-110	0	20	mg/kg	04.02.2020 09:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3121792
Parent Sample Id: 657364-021

Matrix: Soil
MS Sample Id: 657364-021 S

Prep Method: E300P
Date Prep: 04.02.2020
MSD Sample Id: 657364-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	256	200	475	110	477	111	90-110	0	20	mg/kg	04.02.2020 11:36	X

Analytical Method: Chloride by EPA 300

Seq Number: 3121792
Parent Sample Id: 657364-031

Matrix: Soil
MS Sample Id: 657364-031 S

Prep Method: E300P
Date Prep: 04.02.2020
MSD Sample Id: 657364-031 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4560	202	4740	89	4750	94	90-110	0	20	mg/kg	04.02.2020 12:56	X

Analytical Method: Chloride by EPA 300

Seq Number: 3121793
Parent Sample Id: 657364-041

Matrix: Soil
MS Sample Id: 657364-041 S

Prep Method: E300P
Date Prep: 04.02.2020
MSD Sample Id: 657364-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.9	199	243	106	245	107	90-110	1	20	mg/kg	04.02.2020 14:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3121793
Parent Sample Id: 657364-051

Matrix: Soil
MS Sample Id: 657364-051 S

Prep Method: E300P
Date Prep: 04.02.2020
MSD Sample Id: 657364-051 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	34.1	200	250	108	250	108	90-110	0	20	mg/kg	04.02.2020 16:16	

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

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

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

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122016

MB Sample Id: 7700554-1-BLK

Matrix: Solid

LCS Sample Id: 7700554-1-BKS

Prep Method: SW8015P

Date Prep: 04.03.2020

LCSD Sample Id: 7700554-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	935	94	973	97	70-130	4	20	mg/kg	04.03.2020 12:21	
Diesel Range Organics (DRO)	<50.0	1000	957	96	1020	102	70-130	6	20	mg/kg	04.03.2020 12:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	82		88		91		70-130	%	04.03.2020 12:21
o-Terphenyl	95		103		102		70-130	%	04.03.2020 12:21

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122018

MB Sample Id: 7700556-1-BLK

Matrix: Solid

LCS Sample Id: 7700556-1-BKS

Prep Method: SW8015P

Date Prep: 04.03.2020

LCSD Sample Id: 7700556-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1000	100	976	98	70-130	2	20	mg/kg	04.03.2020 22:15	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1130	113	70-130	3	20	mg/kg	04.03.2020 22:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	85		96		97		70-130	%	04.03.2020 22:15
o-Terphenyl	102		109		107		70-130	%	04.03.2020 22:15

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122021

MB Sample Id: 7700557-1-BLK

Matrix: Solid

LCS Sample Id: 7700557-1-BKS

Prep Method: SW8015P

Date Prep: 04.03.2020

LCSD Sample Id: 7700557-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	934	93	985	99	70-130	5	20	mg/kg	04.03.2020 12:21	
Diesel Range Organics (DRO)	<50.0	1000	980	98	1030	103	70-130	5	20	mg/kg	04.03.2020 12:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		99		104		70-130	%	04.03.2020 12:21
o-Terphenyl	121		115		112		70-130	%	04.03.2020 12:21

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122016

Matrix: Solid
MB Sample Id: 7700554-1-BLK

Prep Method: SW8015P

Date Prep: 04.03.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.03.2020 11:58	

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]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122018

Matrix: Solid
MB Sample Id: 7700556-1-BLK

Prep Method: SW8015P
Date Prep: 04.03.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.03.2020 21:53	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122021

Matrix: Solid
MB Sample Id: 7700557-1-BLK

Prep Method: SW8015P
Date Prep: 04.03.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.03.2020 11:58	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122016
Parent Sample Id: 657364-001

Matrix: Soil
MS Sample Id: 657364-001 S

Prep Method: SW8015P
Date Prep: 04.03.2020
MSD Sample Id: 657364-001 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)	<49.9	997	905	91	908	91	70-130	0	20	mg/kg	04.03.2020 13:27	
Diesel Range Organics (DRO)	<49.9	997	966	97	969	97	70-130	0	20	mg/kg	04.03.2020 13:27	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	85		95		70-130	%	04.03.2020 13:27
o-Terphenyl	93		96		70-130	%	04.03.2020 13:27

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122018
Parent Sample Id: 657364-021

Matrix: Soil
MS Sample Id: 657364-021 S

Prep Method: SW8015P
Date Prep: 04.03.2020
MSD Sample Id: 657364-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	967	97	988	99	70-130	2	20	mg/kg	04.03.2020 23:20	
Diesel Range Organics (DRO)	<49.9	997	1070	107	1090	109	70-130	2	20	mg/kg	04.03.2020 23:20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	90		91		70-130	%	04.03.2020 23:20
o-Terphenyl	99		100		70-130	%	04.03.2020 23:20

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

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

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

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122021

Parent Sample Id: 657364-041

Matrix: Soil

MS Sample Id: 657364-041 S

Prep Method: SW8015P

Date Prep: 04.03.2020

MSD Sample Id: 657364-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	996	917	92	1050	105	70-130	14	20	mg/kg	04.03.2020 13:27	
Diesel Range Organics (DRO)	<49.8	996	985	99	1140	114	70-130	15	20	mg/kg	04.03.2020 13:27	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		111		70-130	%	04.03.2020 13:27
o-Terphenyl	106		125		70-130	%	04.03.2020 13:27

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121565

MB Sample Id: 7700192-1-BLK

Matrix: Solid

LCS Sample Id: 7700192-1-BKS

Prep Method: SW5030B

Date Prep: 03.31.2020

LCSD Sample Id: 7700192-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.121	121	0.124	124	70-130	2	35	mg/kg	03.31.2020 20:42	
Toluene	<0.00200	0.100	0.118	118	0.113	113	70-130	4	35	mg/kg	03.31.2020 20:42	
Ethylbenzene	<0.00200	0.100	0.109	109	0.106	106	71-129	3	35	mg/kg	03.31.2020 20:42	
m,p-Xylenes	<0.00400	0.200	0.212	106	0.206	103	70-135	3	35	mg/kg	03.31.2020 20:42	
o-Xylene	<0.00200	0.100	0.109	109	0.105	105	71-133	4	35	mg/kg	03.31.2020 20:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	115		110		109		70-130	%	03.31.2020 20:42
4-Bromofluorobenzene	93		86		86		70-130	%	03.31.2020 20:42

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121570

MB Sample Id: 7700195-1-BLK

Matrix: Solid

LCS Sample Id: 7700195-1-BKS

Prep Method: SW5030B

Date Prep: 03.31.2020

LCSD Sample Id: 7700195-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.111	111	0.105	105	70-130	6	35	mg/kg	04.01.2020 04:20	
Toluene	<0.00200	0.100	0.105	105	0.0986	99	70-130	6	35	mg/kg	04.01.2020 04:20	
Ethylbenzene	<0.00200	0.100	0.0980	98	0.0915	92	71-129	7	35	mg/kg	04.01.2020 04:20	
m,p-Xylenes	<0.00400	0.200	0.202	101	0.188	94	70-135	7	35	mg/kg	04.01.2020 04:20	
o-Xylene	<0.00200	0.100	0.103	103	0.0962	96	71-133	7	35	mg/kg	04.01.2020 04:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		109		110		70-130	%	04.01.2020 04:20
4-Bromofluorobenzene	96		95		95		70-130	%	04.01.2020 04:20

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

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

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

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121699

MB Sample Id: 7700317-1-BLK

Matrix: Solid

LCS Sample Id: 7700317-1-BKS

Prep Method: SW5030B

Date Prep: 04.01.2020

LCSD Sample Id: 7700317-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.109	109	0.109	109	70-130	0	35	mg/kg	04.01.2020 15:13	
Toluene	<0.00200	0.100	0.106	106	0.103	103	70-130	3	35	mg/kg	04.01.2020 15:13	
Ethylbenzene	<0.00200	0.100	0.0992	99	0.0969	97	71-129	2	35	mg/kg	04.01.2020 15:13	
m,p-Xylenes	<0.00400	0.200	0.205	103	0.201	101	70-135	2	35	mg/kg	04.01.2020 15:13	
o-Xylene	<0.00200	0.100	0.103	103	0.101	101	71-133	2	35	mg/kg	04.01.2020 15:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		108		108		70-130	%	04.01.2020 15:13
4-Bromofluorobenzene	97		93		90		70-130	%	04.01.2020 15:13

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121835

MB Sample Id: 7700193-1-BLK

Matrix: Solid

LCS Sample Id: 7700193-1-BKS

Prep Method: SW5030B

Date Prep: 04.01.2020

LCSD Sample Id: 7700193-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.122	122	0.123	123	70-130	1	35	mg/kg	04.02.2020 06:29	
Toluene	<0.00200	0.100	0.129	129	0.122	122	70-130	6	35	mg/kg	04.02.2020 06:29	
Ethylbenzene	<0.00200	0.100	0.120	120	0.113	113	71-129	6	35	mg/kg	04.02.2020 06:29	
m,p-Xylenes	<0.00400	0.200	0.233	117	0.219	110	70-135	6	35	mg/kg	04.02.2020 06:29	
o-Xylene	<0.00200	0.100	0.119	119	0.112	112	71-133	6	35	mg/kg	04.02.2020 06:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	114		107		108		70-130	%	04.02.2020 06:29
4-Bromofluorobenzene	92		83		86		70-130	%	04.02.2020 06:29

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121698

MB Sample Id: 7700318-1-BLK

Matrix: Solid

LCS Sample Id: 7700318-1-BKS

Prep Method: SW5030B

Date Prep: 04.01.2020

LCSD Sample Id: 7700318-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.105	105	0.104	104	70-130	1	35	mg/kg	04.02.2020 01:26	
Toluene	<0.00200	0.100	0.0990	99	0.0988	99	70-130	0	35	mg/kg	04.02.2020 01:26	
Ethylbenzene	<0.00200	0.100	0.0926	93	0.0922	92	71-129	0	35	mg/kg	04.02.2020 01:26	
m,p-Xylenes	<0.00400	0.200	0.190	95	0.188	94	70-135	1	35	mg/kg	04.02.2020 01:26	
o-Xylene	<0.00200	0.100	0.0973	97	0.0965	97	71-133	1	35	mg/kg	04.02.2020 01:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		108		109		70-130	%	04.02.2020 01:26
4-Bromofluorobenzene	97		92		95		70-130	%	04.02.2020 01:26

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

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

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

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121837

MB Sample Id: 7700411-1-BLK

Matrix: Solid

LCS Sample Id: 7700411-1-BKS

Prep Method: SW5030B

Date Prep: 04.02.2020

LCSD Sample Id: 7700411-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.110	110	0.118	118	70-130	7	35	mg/kg	04.02.2020 20:32	
Toluene	<0.00200	0.100	0.0999	100	0.107	107	70-130	7	35	mg/kg	04.02.2020 20:32	
Ethylbenzene	<0.00200	0.100	0.0921	92	0.100	100	71-129	8	35	mg/kg	04.02.2020 20:32	
m,p-Xylenes	<0.00400	0.200	0.179	90	0.196	98	70-135	9	35	mg/kg	04.02.2020 20:32	
o-Xylene	<0.00200	0.100	0.0919	92	0.100	100	71-133	8	35	mg/kg	04.02.2020 20:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		108		109		70-130	%	04.02.2020 20:32
4-Bromofluorobenzene	91		86		86		70-130	%	04.02.2020 20:32

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121565

Parent Sample Id: 657453-001

Matrix: Soil

MS Sample Id: 657453-001 S

Prep Method: SW5030B

Date Prep: 03.31.2020

MSD Sample Id: 657453-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.108	109	0.103	104	70-130	5	35	mg/kg	03.31.2020 21:23	
Toluene	<0.00199	0.0994	0.100	101	0.0941	95	70-130	6	35	mg/kg	03.31.2020 21:23	
Ethylbenzene	<0.00199	0.0994	0.0943	95	0.0871	88	71-129	8	35	mg/kg	03.31.2020 21:23	
m,p-Xylenes	<0.00398	0.199	0.185	93	0.170	85	70-135	8	35	mg/kg	03.31.2020 21:23	
o-Xylene	<0.00199	0.0994	0.0949	95	0.0876	88	71-133	8	35	mg/kg	03.31.2020 21:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		111		70-130	%	03.31.2020 21:23
4-Bromofluorobenzene	91		91		70-130	%	03.31.2020 21:23

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121570

Parent Sample Id: 657364-019

Matrix: Soil

MS Sample Id: 657364-019 S

Prep Method: SW5030B

Date Prep: 03.31.2020

MSD Sample Id: 657364-019 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	0.101	0.0987	98	0.102	102	70-130	3	35	mg/kg	04.01.2020 05:01	
Toluene	<0.00201	0.101	0.0930	92	0.0962	97	70-130	3	35	mg/kg	04.01.2020 05:01	
Ethylbenzene	<0.00201	0.101	0.0867	86	0.0885	89	71-129	2	35	mg/kg	04.01.2020 05:01	
m,p-Xylenes	<0.00402	0.201	0.177	88	0.181	91	70-135	2	35	mg/kg	04.01.2020 05:01	
o-Xylene	<0.00201	0.101	0.0922	91	0.0947	95	71-133	3	35	mg/kg	04.01.2020 05:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		109		70-130	%	04.01.2020 05:01
4-Bromofluorobenzene	93		95		70-130	%	04.01.2020 05:01

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

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

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

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121699

Parent Sample Id: 657364-023

Matrix: Soil

MS Sample Id: 657364-023 S

Prep Method: SW5030B

Date Prep: 04.01.2020

MSD Sample Id: 657364-023 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0991	99	0.108	109	70-130	9	35	mg/kg	04.01.2020 15:54	
Toluene	<0.00200	0.100	0.0947	95	0.104	105	70-130	9	35	mg/kg	04.01.2020 15:54	
Ethylbenzene	<0.00200	0.100	0.0860	86	0.0944	95	71-129	9	35	mg/kg	04.01.2020 15:54	
m,p-Xylenes	<0.00401	0.200	0.177	89	0.196	99	70-135	10	35	mg/kg	04.01.2020 15:54	
o-Xylene	<0.00200	0.100	0.0890	89	0.0980	99	71-133	10	35	mg/kg	04.01.2020 15:54	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		70-130	%	04.01.2020 15:54
4-Bromofluorobenzene	97		93		70-130	%	04.01.2020 15:54

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121835

Parent Sample Id: 657244-041

Matrix: Soil

MS Sample Id: 657244-041 S

Prep Method: SW5030B

Date Prep: 04.01.2020

MSD Sample Id: 657244-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.121	121	0.116	116	70-130	4	35	mg/kg	04.02.2020 07:10	
Toluene	<0.00199	0.0996	0.109	109	0.104	104	70-130	5	35	mg/kg	04.02.2020 07:10	
Ethylbenzene	<0.00199	0.0996	0.101	101	0.0954	96	71-129	6	35	mg/kg	04.02.2020 07:10	
m,p-Xylenes	<0.00398	0.199	0.195	98	0.183	92	70-135	6	35	mg/kg	04.02.2020 07:10	
o-Xylene	<0.00199	0.0996	0.0998	100	0.0938	94	71-133	6	35	mg/kg	04.02.2020 07:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		109		70-130	%	04.02.2020 07:10
4-Bromofluorobenzene	86		87		70-130	%	04.02.2020 07:10

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121698

Parent Sample Id: 657364-045

Matrix: Soil

MS Sample Id: 657364-045 S

Prep Method: SW5030B

Date Prep: 04.01.2020

MSD Sample Id: 657364-045 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0956	96	0.0928	93	70-130	3	35	mg/kg	04.02.2020 02:06	
Toluene	<0.00200	0.100	0.0888	89	0.0881	89	70-130	1	35	mg/kg	04.02.2020 02:06	
Ethylbenzene	<0.00200	0.100	0.0830	83	0.0816	82	71-129	2	35	mg/kg	04.02.2020 02:06	
m,p-Xylenes	<0.00401	0.200	0.171	86	0.168	84	70-135	2	35	mg/kg	04.02.2020 02:06	
o-Xylene	<0.00200	0.100	0.0866	87	0.0852	86	71-133	2	35	mg/kg	04.02.2020 02:06	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		70-130	%	04.02.2020 02:06
4-Bromofluorobenzene	94		95		70-130	%	04.02.2020 02:06

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 657364

LT Environmental, Inc.
Breakwater Spill

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121837

Parent Sample Id: 657763-001

Matrix: Soil

MS Sample Id: 657763-001 S

Prep Method: SW5030B

Date Prep: 04.02.2020

MSD Sample Id: 657763-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.125	126	0.119	119	70-130	5	35	mg/kg	04.02.2020 21:12	
Toluene	<0.00199	0.0996	0.114	114	0.108	108	70-130	5	35	mg/kg	04.02.2020 21:12	
Ethylbenzene	<0.00199	0.0996	0.106	106	0.0980	98	71-129	8	35	mg/kg	04.02.2020 21:12	
m,p-Xylenes	<0.00398	0.199	0.205	103	0.190	95	70-135	8	35	mg/kg	04.02.2020 21:12	
o-Xylene	<0.00199	0.0996	0.104	104	0.0968	97	71-133	7	35	mg/kg	04.02.2020 21:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		108		70-130	%	04.02.2020 21:12
4-Bromofluorobenzene	86		88		70-130	%	04.02.2020 21:12

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

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 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



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Chain of Custody

Work Order No: 1579604

Project Manager: Chris McKisson Bill to: (if different)

Company Name: LT Environmental Company Name:

Address: 820 Megan Ave. Unit B Address:

City, State ZIP: Rifle, CO 81650 City, State ZIP:

Phone: (970) 285 - 9985 Email: wmather@ltenv.com, cmckisson@ltenv.com

Project Name: Breakwater Spill Turn Around

Project Number: 102720001 Routine

P.O. Number: Eddy Rush:

Sampler's Name: William Mather Due Date:

SAMPLE RECEIPT Temp Blank: No Wet Ice: No

Temperature (°C): 2.8 Thermometer ID

Received In tact: Yes No Correction Factor: T-NM-009

Cooler Custody Seals: Yes No Total Containers: 57

Sample Custody Seals: Yes No

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST											Work Order Notes			
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)											
FS49	S	3/27/2020	13:53	1.5'	1	X	X	X											Composite, Pulverized rock
FS50	S	3/27/2020	13:46	1.5'	1	X	X	X											Composite, Pulverized rock
FS51	S	3/27/2020	13:44	1.5'	1	X	X	X											Composite, Pulverized rock
FS52	S	3/27/2020	13:42	1.5'	1	X	X	X											Composite, Pulverized rock
FS53	S	3/27/2020	13:40	1.5'	1	X	X	X											Composite, Pulverized rock
FS54	S	3/27/2020	13:38	1.5'	1	X	X	X											Composite, Pulverized rock
FS55	S	3/27/2020	13:56	1.5'	1	X	X	X											Composite, Pulverized rock
FS56	S	3/27/2020	13:58	1.5'	1	X	X	X											Composite, Pulverized rock
FS57	S	3/27/2020	14:12	1.5'	1	X	X	X											Composite, Pulverized rock
FS58	S	3/27/2020	14:15	1.5'	1	X	X	X											Composite, Pulverized rock

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

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<i>[Signature]</i>	<i>[Signature]</i>	3/27/20	<i>[Signature]</i>	<i>[Signature]</i>	3/30/20



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Chain of Custody

Work Order No: 10573104

Project Manager:	Chris McKisson	Bill to: (if different)	
Company Name:	LT Environmental	Company Name:	
Address:	820 Megan Ave. Unit B	Address:	
City, State ZIP:	Rifle, CO 81650	City, State ZIP:	
Phone:	(970) 265 - 9985	Email:	wmather@lennv.com, cmckisson@lennv.com

Program: UST/PST RP Brownfields RC \$fund
 State of Project: Level I Level II Level III P/UST RP Level IV
 Reporting Level: Level II Level III P/UST RP Level IV
 Deliverables: EDD ADaPT Other: _____

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers			Sample Comments
					TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	
FS07	S	3/27/2020	14:35	1.5'	1	X	X	Composite, Pulverized rock
FS08	S	3/27/2020	14:37	1.5'	1	X	X	Composite, Pulverized rock
FS09	S	3/27/2020	14:39	1.5'	1	X	X	Composite, Pulverized rock
FS10	S	3/27/2020	14:41	1.5'	1	X	X	Composite, Pulverized rock
FS11	S	3/27/2020	9:00	1.5'	1	X	X	Composite, Pulverized rock
FS12	S	3/27/2020	9:15	1.5'	1	X	X	Composite, Pulverized rock
FS13	S	3/27/2020	12:35	1.5'	1	X	X	Composite, Pulverized rock

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

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<i>[Signature]</i>	<i>[Signature]</i>	3/30/2020	<i>[Signature]</i>	<i>[Signature]</i>	3/30/2020



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 Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-820-2000)

Chain of Custody

Work Order No: 157364

Page 3 of 6

Project Manager:	Chris McKisson	Bill to: (if different)	
Company Name:	LT Environmental	Company Name:	
Address:	820 Megan Ave, Unit B	Address:	
City, State ZIP:	Rifle, CO 81650	City, State ZIP:	
Phone:	(970) 285 - 9985	Email:	wmather@ltenv.com, cmckisson@ltenv.com

Program:	UST/PST	<input type="checkbox"/> RP	<input type="checkbox"/> Brownfields	<input type="checkbox"/> RC	<input type="checkbox"/> \$perfund
State of Project:					
Reporting Level:	Level II	<input type="checkbox"/> Level III	<input type="checkbox"/> ST/UST	<input type="checkbox"/> RP	<input type="checkbox"/> Level IV
Deliverables:	EDD	<input type="checkbox"/>	AdAPT	<input type="checkbox"/>	Other:

Project Name:	Breakwater Spill	Turn Around	
Project Number:	102720001	Routine	<input checked="" type="checkbox"/>
P.O. Number:	Eddy	Rush:	
Sampler's Name:	William Mather	Due Date:	
SAMPLE RECEIPT	Temp Blank:	Yes	No
Temperature (°C):	Yes	No	19.1
Received Intact:	Yes	No	
Cooler Custody Seals:	Yes	No	N/A
Sample Custody Seals:	Yes	No	N/A
	Correction Factor:		
	Total Containers:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers			Sample Comments
					TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	
FS59	S	3/27/2020	14:35	1.5'	1	X	X	Composite, Pulverized rock
FS60	S	3/27/2020	14:37	1.5'	1	X	X	Composite, Pulverized rock
FS61	S	3/27/2020	14:39	1.5'	1	X	X	Composite, Pulverized rock
FS62	S	3/27/2020	14:41	1.5'	1	X	X	Composite, Pulverized rock
FS01	S	3/27/2020	9:00	1.5'	1	X	X	Composite, Pulverized rock
FS02	S	3/27/2020	9:15	1.5'	1	X	X	Composite, Pulverized rock
FS03	S	3/27/2020	12:35	1.5'	1	X	X	Composite, Pulverized rock
FS04	S	3/27/2020	13:02	1.5'	1	X	X	Composite, Pulverized rock
FS05	S	3/27/2020	13:15	1.5'	1	X	X	Composite, Pulverized rock
FS06	S	3/27/2020	15:28	1.5'	1	X	X	Composite, Pulverized rock

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
 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

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<i>[Signature]</i>	<i>[Signature]</i>	3/30/20 13:25	<i>[Signature]</i>	<i>[Signature]</i>	



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Chain of Custody

Work Order No: 10573024

Project Manager: Chris Mickisson
 Company Name: LT Environmental
 Address: 820 Megan Ave, Unit B
 City, State ZIP: Rifle, CO 81650
 Phone: (970) 285 - 9985
 Email: wmather@ltenv.com, cmickisson@ltenv.com

Bill to: (if different)
 Company Name:
 Address:
 City, State ZIP:
 Program: UST/PST RP Rowfields RC Spentfund
 State of Project:
 Reporting Level: Level II Level III ST/UST RP Level IV
 Deliverables: EDD ADAPT Other:

Project Name: Breakwater Spill Turn Around
 Project Number: 102720001 Routine
 P.O. Number: Eddy Rush:
 Sampler's Name: William Mather Due Date:

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST											Sample Comments		
					Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)										
FS29	S	3/26/2020	12:44	1.5'	1	X	X	X										Composite, Pulverized rock
FS30	S	3/26/2020	13:06	1.5'	1	X	X	X										Composite, Pulverized rock
FS31	S	3/26/2020	09:52	1.5'	1	X	X	X										Composite, Pulverized rock
FS32	S	3/26/2020	10:50	1.5'	1	X	X	X										Composite, Pulverized rock
FS33	S	3/26/2020	11:27	1.5'	1	X	X	X										Composite, Pulverized rock
FS34	S	3/26/2020	11:39	1.5'	1	X	X	X										Composite, Pulverized rock
FS35	S	3/26/2020	11:52	1.5'	1	X	X	X										Composite, Pulverized rock
FS36	S	3/26/2020	12:52	1.5'	1	X	X	X										Composite, Pulverized rock
FS37	S	3/26/2020	13:04	1.5'	1	X	X	X										Composite, Pulverized rock
FS38	S	3/27/2020	13:43	1.5'	1	X	X	X										Composite, Pulverized rock

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 Si O2 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

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<i>[Signature]</i>	<i>[Signature]</i>	3/30/20 5:00AM	<i>[Signature]</i>	<i>[Signature]</i>	3/30/20 17:27



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Chain of Custody

Work Order No: 157824

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Project Manager: Chris McKisson
 Company Name: LT Environmental
 Address: 820 Megan Ave, Unit B
 City, State ZIP: Rifle, CO 81650
 Phone: (970) 285-9985

Bill to: (if different)
 Company Name:
 Address:
 City, State ZIP:

Email: wmather@ltenv.com, cmckisson@ltenv.com

Program: USTRPST RRP Brownfields RC \$fund
 State of Project:
 Reporting Level: Level II Level III P/UST RRP Level IV
 Deliverables: EDD ADAPT Other:

Project Name: Breakwater Spill Turn Around
 Project Number: 102720001 Routine
 P.O. Number: Eddy Rush:
 Sampler's Name: William Mather Due Date:

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers			Sample Comments
					TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	
FS39	S	3/27/2020	13:48	1.5'	1	X	X	Composite, Pulverized rock
FS40	S	3/27/2020	14:02	1.5'	1	X	X	Composite, Pulverized rock
FS41	S	3/27/2020	14:12	1.5'	1	X	X	Composite, Pulverized rock
FS42	S	3/27/2020	14:24	1.5'	1	X	X	Composite, Pulverized rock
FS43	S	3/27/2020	14:23	1.5'	1	X	X	Composite, Pulverized rock
FS44	S	3/27/2020	14:32	1.5'	1	X	X	Composite, Pulverized rock
FS45	S	3/27/2020	14:35	1.5'	1	X	X	Composite, Pulverized rock
FS46	S	3/27/2020	14:47	1.5'	1	X	X	Composite, Pulverized rock
FS47	S	3/27/2020	14:05	1.5'	1	X	X	Composite, Pulverized rock
FS48	S	3/27/2020	13:56	1.5'	1	X	X	Composite, Pulverized rock

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

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<i>[Signature]</i>	<i>[Signature]</i>	3/30/2014	<i>[Signature]</i>	<i>[Signature]</i>	3/30/2014



Inter-Office Shipment

IOS Number 61339

Date/Time: 04/01/20 10:49

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

F-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
657364-001	S	FS49	03/27/20 13:53	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-002	S	FS50	03/27/20 13:46	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-003	S	FS51	03/27/20 13:41	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-004	S	FS52	03/27/20 13:42	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-005	S	FS53	03/27/20 13:40	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-006	S	FS54	03/27/20 13:38	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-007	S	FS55	03/27/20 13:56	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-008	S	FS56	03/27/20 13:58	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-009	S	FS57	03/27/20 14:12	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-010	S	FS58	03/27/20 14:15	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-011	S	FS07	03/27/20 14:35	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-012	S	FS08	03/27/20 14:37	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-013	S	FS09	03/27/20 14:39	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-014	S	FS10	03/27/20 14:41	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-015	S	FS11	03/27/20 09:00	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-016	S	FS12	03/27/20 09:15	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-017	S	FS13	03/27/20 12:35	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-018	S	FS59	03/27/20 14:35	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-019	S	FS60	03/27/20 14:37	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-020	S	FS61	03/27/20 14:39	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-021	S	FS62	03/27/20 14:41	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-022	S	FS01	03/27/20 09:00	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-023	S	FS02	03/27/20 09:15	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-024	S	FS03	03/27/20 12:35	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-025	S	FS04	03/27/20 13:02	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	



Inter-Office Shipment

IOS Number 61339

Date/Time: 04/01/20 10:49

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

F-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
657364-026	S	FS05	03/27/20 13:15	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-027	S	FS06	03/27/20 15:28	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-028	S	FS29	03/27/20 12:44	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-029	S	FS30	03/27/20 13:05	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-030	S	FS31	03/27/20 09:52	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-031	S	FS32	03/27/20 10:50	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-032	S	FS33	03/27/20 11:27	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-033	S	FS34	03/27/20 11:39	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-034	S	FS35	03/27/20 11:52	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-035	S	FS36	03/27/20 12:51	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-036	S	FS37	03/27/20 13:04	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-037	S	FS38	03/27/20 13:43	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-038	S	FS39	03/27/20 13:48	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-039	S	FS40	03/27/20 14:02	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-040	S	FS41	03/27/20 14:08	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-041	S	FS42	03/27/20 14:24	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-042	S	FS43	03/27/20 14:23	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-043	S	FS44	03/27/20 14:31	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-044	S	FS45	03/27/20 14:35	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-045	S	FS46	03/27/20 14:17	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-046	S	FS47	03/27/20 14:05	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-047	S	FS48	03/27/20 13:56	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/10/20	JKR	GRO-DRO PHCC10C28 PF	
657364-048	S	FS18	03/26/20 10:13	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/09/20	JKR	GRO-DRO PHCC10C28 PF	
657364-049	S	FS19	03/26/20 11:25	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/09/20	JKR	GRO-DRO PHCC10C28 PF	
657364-050	S	FS20	03/26/20 11:30	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/09/20	JKR	GRO-DRO PHCC10C28 PF	

Inter Office Shipment or Sample Comments:



Inter-Office Shipment

IOS Number 61339

Date/Time: 04/01/20 10:49

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.:

F-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
657364-051	S	FS21	03/26/20 11:58	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/09/20	JKR	GRO-DRO PHCC10C28 PF	
657364-052	S	FS23	03/26/20 12:58	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/09/20	JKR	GRO-DRO PHCC10C28 PF	
657364-053	S	FS24	03/26/20 09:56	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/09/20	JKR	GRO-DRO PHCC10C28 PF	
657364-054	S	FS25	03/26/20 10:42	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/09/20	JKR	GRO-DRO PHCC10C28 PF	
657364-055	S	FS26	03/26/20 11:06	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/09/20	JKR	GRO-DRO PHCC10C28 PF	
657364-056	S	FS27	03/26/20 11:44	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/09/20	JKR	GRO-DRO PHCC10C28 PF	
657364-057	S	FS28	03/26/20 11:47	SW8015MOD_NM	TPH by SW8015 Mod	04/03/20	04/09/20	JKR	GRO-DRO PHCC10C28 PF	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished:

04/01/2020

Received By:

Brianna Teel

Date Received:

Cooler Temperature:



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 61339

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

Sent By: Elizabeth McClellan

Date Sent: 04/01/2020 10:49 AM

Received By:

Date Received:

Sample Receipt Checklist

Comments

- #1 *Temperature of cooler(s)? Yes
- #2 *Shipping container in good condition? Yes
- #3 *Samples received with appropriate temperature? Yes
- #4 *Custody Seals intact on shipping container/ cooler? Yes
- #5 *Custody Seals Signed and dated for Containers/coolers Yes
- #6 *IOS present? Yes
- #7 Any missing/extra samples? Yes
- #8 IOS agrees with sample label(s)/matrix? Yes
- #9 Sample matrix/ properties agree with IOS? Yes
- #10 Samples in proper container/ bottle? Yes
- #11 Samples properly preserved? Yes
- #12 Sample container(s) intact? Yes
- #13 Sufficient sample amount for indicated test(s)? Yes
- #14 All samples received within hold time? Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: _____

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.30.2020 05.27.00 PM

Work Order #: 657364

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007


Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.8	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6*Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	Split in lab for sub.
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	TPH subbed to Midland.
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 03.31.2020

Checklist reviewed by:


Jessica Kramer

Date: 03.31.2020

Analytical Report 657808

for

LT Environmental, Inc.

Project Manager: Chris McKisson

Breakwater Spill

102720001

07-APR-20

Collected By: Client



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

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-Carlsbad (LELAP): Louisiana (05092)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

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

Xenco-Tampa: Florida (E87429), North Carolina (483)



07-APR-20

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

Reference: XENCO Report No(s): **657808**
Breakwater Spill
Project Address: Eddy

Chris McKisson:

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) 657808. 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. 657808 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, slightly slanted style.

Jessica Kramer

Project Manager

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 657808

LT Environmental, Inc., Arvada, CO

Breakwater Spill

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS64	S	04-02-20 09:27	1 ft	657808-001
FS66	S	04-02-20 10:37	1 ft	657808-002
FS75	S	04-02-20 13:29	1 ft	657808-003
Watertruck Sample	W	03-26-20 13:08		657808-004



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: Breakwater Spill

Project ID: 102720001
Work Order Number(s): 657808

Report Date: 07-APR-20
Date Received: 04/02/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3121975 Chloride by EPA 300

Lab Sample ID 657808-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 657808-004.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 657808

LT Environmental, Inc., Arvada, CO

Project Name: Breakwater Spill

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy

Date Received in Lab: Thu Apr-02-20 04:48 pm
Report Date: 07-APR-20
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	657808-001	657808-002	657808-003	657808-004		
	<i>Field Id:</i>	FS64	FS66	FS75	Watertruck Sample		
	<i>Depth:</i>	1- ft	1- ft	1- ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL	WATER		
	<i>Sampled:</i>	Apr-02-20 09:27	Apr-02-20 10:37	Apr-02-20 13:29	Mar-26-20 13:08		
Chloride by EPA 300	<i>Extracted:</i>	Apr-07-20 08:41	Apr-07-20 08:41	Apr-07-20 08:41	Apr-05-20 12:56		
	<i>Analyzed:</i>	Apr-07-20 11:37	Apr-07-20 11:43	Apr-07-20 11:48	Apr-05-20 19:35		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/L RL		
Chloride		1340 10.0	1050 10.0	1400 9.98	2050 X 25.0		

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%

Jessica Kramer
Project Manager



Certificate of Analytical Results 657808

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS64	Matrix: Soil	Date Received: 04.02.20 16.48
Lab Sample Id: 657808-001	Date Collected: 04.02.20 09.27	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.07.20 08.41	Basis: Wet Weight
Seq Number: 3122208		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1340	10.0	mg/kg	04.07.20 11.37		1



Certificate of Analytical Results 657808

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS66	Matrix: Soil	Date Received: 04.02.20 16.48
Lab Sample Id: 657808-002	Date Collected: 04.02.20 10.37	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.07.20 08.41	Basis: Wet Weight
Seq Number: 3122208		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1050	10.0	mg/kg	04.07.20 11.43		1



Certificate of Analytical Results 657808

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: FS75	Matrix: Soil	Date Received: 04.02.20 16.48
Lab Sample Id: 657808-003	Date Collected: 04.02.20 13.29	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.07.20 08.41	Basis: Wet Weight
Seq Number: 3122208		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1400	9.98	mg/kg	04.07.20 11.48		1



Certificate of Analytical Results 657808

LT Environmental, Inc., Arvada, CO Breakwater Spill

Sample Id: **Watertruck Sample**

Matrix: Water

Date Received: 04.02.20 16.48

Lab Sample Id: 657808-004

Date Collected: 03.26.20 13.08

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.05.20 12.56

Seq Number: 3121975

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2050	25.0	mg/L	04.05.20 19.35	X	50



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
Breakwater Spill

Analytical Method: Chloride by EPA 300

Seq Number: 3121975

MB Sample Id: 7700525-1-BLK

Matrix: Water

LCS Sample Id: 7700525-1-BKS

Prep Method: E300P

Date Prep: 04.05.20

LCSD Sample Id: 7700525-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.500	25.0	25.9	104	26.1	104	90-110	1	20	mg/L	04.05.20 19:25	

Analytical Method: Chloride by EPA 300

Seq Number: 3122208

MB Sample Id: 7700621-1-BLK

Matrix: Solid

LCS Sample Id: 7700621-1-BKS

Prep Method: E300P

Date Prep: 04.07.20

LCSD Sample Id: 7700621-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	259	104	260	104	90-110	0	20	mg/kg	04.07.20 08:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3121975

Parent Sample Id: 657808-004

Matrix: Water

MS Sample Id: 657808-004 S

Prep Method: E300P

Date Prep: 04.05.20

MSD Sample Id: 657808-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2050	50.0	2110	120	2100	100	90-110	0	20	mg/L	04.05.20 19:40	X

Analytical Method: Chloride by EPA 300

Seq Number: 3122208

Parent Sample Id: 657494-001

Matrix: Soil

MS Sample Id: 657494-001 S

Prep Method: E300P

Date Prep: 04.07.20

MSD Sample Id: 657494-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	117	200	333	108	334	110	90-110	0	20	mg/kg	04.07.20 09:02	

Analytical Method: Chloride by EPA 300

Seq Number: 3122208

Parent Sample Id: 657494-011

Matrix: Soil

MS Sample Id: 657494-011 S

Prep Method: E300P

Date Prep: 04.07.20

MSD Sample Id: 657494-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2370	202	2570	99	2570	99	90-110	0	20	mg/kg	04.07.20 10:18	

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.02.2020 04.48.00 PM

Work Order #: 657808

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007


Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6*Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 04.02.2020

Checklist reviewed by:


Jessica Kramer

Date: 04.06.2020



Analytical Report 658383

for

LT Environmental, Inc.

Project Manager: Chris McKisson

LVP Gathering System

102720001

04.13.2020

Collected By: Client

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

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

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

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



04.13.2020

Project Manager: **Chris McKisson**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **658383**

LVP Gathering System

Project Address: Eddy County

Chris McKisson:

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) 658383. 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. 658383 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, slightly slanted style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS77	S	04.08.2020 13:35	5 - 6 ft	658383-001
FS78	S	04.08.2020 13:58	5.5 - 6 ft	658383-002
SW02	S	04.08.2020 14:25	0.5 - 6 ft	658383-003
SW03	S	04.08.2020 14:30	0.5 - 6 ft	658383-004
SW04	S	04.08.2020 14:45	0.5 - 6 ft	658383-005
PH01	S	04.08.2020 08:35	0.5 ft	658383-006
PH01A	S	04.08.2020 08:45	4 ft	658383-007



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: LVP Gathering System

Project ID: 102720001
Work Order Number(s): 658383

Report Date: 04.13.2020
Date Received: 04.08.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3122575 BTEX by EPA 8021B

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

Batch: LBA-3122755 BTEX by EPA 8021B

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



Certificate of Analysis Summary 658383

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Wed 04.08.2020 16:41
Report Date: 04.13.2020 11:49
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	658383-001	658383-002	658383-003	658383-004	658383-005	658383-006
	<i>Field Id:</i>	FS77	FS78	SW02	SW03	SW04	PH01
	<i>Depth:</i>	5-6 ft	5.5-6 ft	0.5-6 ft	0.5-6 ft	0.5-6 ft	0.5- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	04.08.2020 13:35	04.08.2020 13:58	04.08.2020 14:25	04.08.2020 14:30	04.08.2020 14:45	04.08.2020 08:35
BTEX by EPA 8021B	<i>Extracted:</i>	04.09.2020 16:42	04.09.2020 16:42	04.09.2020 16:42	04.09.2020 16:49	04.09.2020 16:42	04.09.2020 16:49
	<i>Analyzed:</i>	04.10.2020 06:26	04.10.2020 06:47	04.10.2020 07:07	04.10.2020 10:31	04.10.2020 07:27	04.10.2020 10:51
	<i>Units/RL:</i>	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	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
m,p-Xylenes		<0.00400 0.00400	<0.00401 0.00401	<0.00404 0.00404	<0.00401 0.00401	<0.00403 0.00403	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Xylenes, Total		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46	04.09.2020 14:46
	<i>Analyzed:</i>	04.09.2020 16:21	04.09.2020 16:27	04.09.2020 16:32	04.09.2020 16:37	04.09.2020 16:54	04.09.2020 16:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		176 9.92	76.8 9.96	13.1 10.1	<9.96 9.96	362 9.98	14.3 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	04.09.2020 12:44	04.09.2020 12:44	04.09.2020 12:44	04.09.2020 12:44	04.09.2020 12:44	04.09.2020 12:44
	<i>Analyzed:</i>	04.09.2020 20:55	04.09.2020 21:15	04.09.2020 21:35	04.09.2020 16:08	04.09.2020 16:29	04.09.2020 14:06
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.2 50.2	<49.9 49.9	<50.2 50.2	<50.0 50.0	<50.2 50.2
Diesel Range Organics (DRO)		<50.2 50.2	<50.2 50.2	<49.9 49.9	<50.2 50.2	<50.0 50.0	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.2 50.2	<49.9 49.9	<50.2 50.2	<50.0 50.0	106 50.2
Total GRO-DRO		<50.2 50.2	<50.2 50.2	<49.9 49.9	<50.2 50.2	<50.0 50.0	<50.2 50.2
Total TPH		<50.2 50.2	<50.2 50.2	<49.9 49.9	<50.2 50.2	<50.0 50.0	106 50.2

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
Project Manager



Certificate of Analysis Summary 658383

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Wed 04.08.2020 16:41
Report Date: 04.13.2020 11:49
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658383-007				
	Field Id:	PH01A				
	Depth:	4- ft				
	Matrix:	SOIL				
	Sampled:	04.08.2020 08:45				
BTEX by EPA 8021B	Extracted:	04.09.2020 16:49				
	Analyzed:	04.10.2020 11:12				
	Units/RL:	mg/kg RL				
	Benzene	<0.0196 0.0196				
	Toluene	<0.0196 0.0196				
	Ethylbenzene	<0.0196 0.0196				
	m,p-Xylenes	<0.0392 0.0392				
	o-Xylene	<0.0196 0.0196				
Xylenes, Total	<0.0196 0.0196					
Total BTEX	<0.0196 0.0196					
Chloride by EPA 300	Extracted:	04.09.2020 14:46				
	Analyzed:	04.09.2020 17:05				
	Units/RL:	mg/kg RL				
Chloride	<10.0 10.0					
TPH by SW8015 Mod	Extracted:	04.09.2020 12:44				
	Analyzed:	04.09.2020 15:07				
	Units/RL:	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<50.3 50.3				
	Diesel Range Organics (DRO)	<50.3 50.3				
	Motor Oil Range Hydrocarbons (MRO)	<50.3 50.3				
	Total GRO-DRO	<50.3 50.3				
Total TPH	<50.3 50.3					

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
Project Manager



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **FS77** Matrix: Soil Date Received: 04.08.2020 16:41
 Lab Sample Id: 658383-001 Date Collected: 04.08.2020 13:35 Sample Depth: 5 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.09.2020 14:46 Basis: Wet Weight
 Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	176	9.92	mg/kg	04.09.2020 16:21		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.09.2020 12:44 Basis: Wet Weight
 Seq Number: 3122574

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.09.2020 20:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.09.2020 20:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.09.2020 20:55	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.09.2020 20:55	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.09.2020 20:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	04.09.2020 20:55	
o-Terphenyl	84-15-1	121	%	70-135	04.09.2020 20:55	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: FS77	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-001	Date Collected: 04.08.2020 13:35	Sample Depth: 5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:42	Basis: Wet Weight
Seq Number: 3122575		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.10.2020 06:26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.10.2020 06:26		
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.10.2020 06:26		



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **FS78** Matrix: Soil Date Received: 04.08.2020 16:41
 Lab Sample Id: 658383-002 Date Collected: 04.08.2020 13:58 Sample Depth: 5.5 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.09.2020 14:46 Basis: Wet Weight
 Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	76.8	9.96	mg/kg	04.09.2020 16:27		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.09.2020 12:44 Basis: Wet Weight
 Seq Number: 3122574

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.09.2020 21:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.09.2020 21:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.09.2020 21:15	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.09.2020 21:15	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.09.2020 21:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	04.09.2020 21:15	
o-Terphenyl	84-15-1	124	%	70-135	04.09.2020 21:15	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS78	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-002	Date Collected: 04.08.2020 13:58	Sample Depth: 5.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:42	Basis: Wet Weight
Seq Number: 3122575		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.10.2020 06:47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	04.10.2020 06:47		
1,4-Difluorobenzene	540-36-3	103	%	70-130	04.10.2020 06:47		



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW02	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-003	Date Collected: 04.08.2020 14:25	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 14:46	Basis: Wet Weight
Seq Number: 3122582		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.1	10.1	mg/kg	04.09.2020 16:32		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.09.2020 12:44
Seq Number: 3122574	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.09.2020 21:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.09.2020 21:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.09.2020 21:35	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.09.2020 21:35	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.09.2020 21:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	04.09.2020 21:35	
o-Terphenyl	84-15-1	124	%	70-135	04.09.2020 21:35	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW02	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-003	Date Collected: 04.08.2020 14:25	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:42	Basis: Wet Weight
Seq Number: 3122575		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.10.2020 07:07	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.10.2020 07:07		
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.10.2020 07:07		



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW03	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-004	Date Collected: 04.08.2020 14:30	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 14:46	Basis: Wet Weight
Seq Number: 3122582		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	04.09.2020 16:37	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.09.2020 12:44
Seq Number: 3122635	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.09.2020 16:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.09.2020 16:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.09.2020 16:08	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.09.2020 16:08	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.09.2020 16:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	04.09.2020 16:08	
o-Terphenyl	84-15-1	120	%	70-135	04.09.2020 16:08	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW03	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-004	Date Collected: 04.08.2020 14:30	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:49	Basis: Wet Weight
Seq Number: 3122755		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.10.2020 10:31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.10.2020 10:31	
1,4-Difluorobenzene	540-36-3	101	%	70-130	04.10.2020 10:31	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **SW04** Matrix: Soil Date Received: 04.08.2020 16:41
 Lab Sample Id: 658383-005 Date Collected: 04.08.2020 14:45 Sample Depth: 0.5 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.09.2020 14:46 Basis: Wet Weight
 Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	362	9.98	mg/kg	04.09.2020 16:54		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.09.2020 12:44 Basis: Wet Weight
 Seq Number: 3122635

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.09.2020 16:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.09.2020 16:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.09.2020 16:29	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.09.2020 16:29	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.09.2020 16:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	04.09.2020 16:29	
o-Terphenyl	84-15-1	111	%	70-135	04.09.2020 16:29	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW04	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-005	Date Collected: 04.08.2020 14:45	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:42	Basis: Wet Weight
Seq Number: 3122575		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.10.2020 07:27	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.10.2020 07:27		
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.10.2020 07:27		



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: PH01	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-006	Date Collected: 04.08.2020 08:35	Sample Depth: 0.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 14:46	Basis: Wet Weight
Seq Number: 3122582		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.3	9.98	mg/kg	04.09.2020 16:59		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.09.2020 12:44
Seq Number: 3122635	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.09.2020 14:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.09.2020 14:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	106	50.2	mg/kg	04.09.2020 14:06		1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.09.2020 14:06	U	1
Total TPH	PHC635	106	50.2	mg/kg	04.09.2020 14:06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	04.09.2020 14:06	
o-Terphenyl	84-15-1	120	%	70-135	04.09.2020 14:06	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: PH01	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-006	Date Collected: 04.08.2020 08:35	Sample Depth: 0.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:49	Basis: Wet Weight
Seq Number: 3122755		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.10.2020 10:51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.10.2020 10:51		
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.10.2020 10:51		



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **PH01A** Matrix: Soil Date Received: 04.08.2020 16:41
 Lab Sample Id: 658383-007 Date Collected: 04.08.2020 08:45 Sample Depth: 4 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.09.2020 14:46 Basis: Wet Weight
 Seq Number: 3122582

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	04.09.2020 17:05	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.09.2020 12:44 Basis: Wet Weight
 Seq Number: 3122635

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.09.2020 15:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.09.2020 15:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.09.2020 15:07	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.09.2020 15:07	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.09.2020 15:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	04.09.2020 15:07	
o-Terphenyl	84-15-1	110	%	70-135	04.09.2020 15:07	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: PH01A	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-007	Date Collected: 04.08.2020 08:45	Sample Depth: 4 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:49	Basis: Wet Weight
Seq Number: 3122755		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
Toluene	108-88-3	<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
Ethylbenzene	100-41-4	<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
m,p-Xylenes	179601-23-1	<0.0392	0.0392	mg/kg	04.10.2020 11:12	U	1
o-Xylene	95-47-6	<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
Xylenes, Total	1330-20-7	<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
Total BTEX		<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.10.2020 11:12		
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.10.2020 11:12		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: Chloride by EPA 300

Seq Number: 3122582
MB Sample Id: 7700932-1-BLK

Matrix: Solid
LCS Sample Id: 7700932-1-BKS

Prep Method: E300P
Date Prep: 04.09.2020
LCSD Sample Id: 7700932-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	256	102	258	103	90-110	1	20	mg/kg	04.09.2020 15:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3122582
Parent Sample Id: 658381-001

Matrix: Soil
MS Sample Id: 658381-001 S

Prep Method: E300P
Date Prep: 04.09.2020
MSD Sample Id: 658381-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	118	199	328	106	326	104	90-110	1	20	mg/kg	04.09.2020 15:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3122582
Parent Sample Id: 658383-004

Matrix: Soil
MS Sample Id: 658383-004 S

Prep Method: E300P
Date Prep: 04.09.2020
MSD Sample Id: 658383-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.96	249	247	99	250	100	90-110	1	20	mg/kg	04.09.2020 16:43	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122574
MB Sample Id: 7700947-1-BLK

Matrix: Solid
LCS Sample Id: 7700947-1-BKS

Prep Method: SW8015P
Date Prep: 04.09.2020
LCSD Sample Id: 7700947-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1010	101	945	95	70-135	7	35	mg/kg	04.09.2020 13:25	
Diesel Range Organics (DRO)	<50.0	1000	1120	112	1080	108	70-135	4	35	mg/kg	04.09.2020 13:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		128		124		70-135	%	04.09.2020 13:25
o-Terphenyl	119		126		124		70-135	%	04.09.2020 13:25

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122635
MB Sample Id: 7700958-1-BLK

Matrix: Solid
LCS Sample Id: 7700958-1-BKS

Prep Method: SW8015P
Date Prep: 04.09.2020
LCSD Sample Id: 7700958-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	877	88	971	97	70-135	10	35	mg/kg	04.09.2020 13:25	
Diesel Range Organics (DRO)	<50.0	1000	952	95	1070	107	70-135	12	35	mg/kg	04.09.2020 13:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		126		119		70-135	%	04.09.2020 13:25
o-Terphenyl	113		112		122		70-135	%	04.09.2020 13:25

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122574

Matrix: Solid
MB Sample Id: 7700947-1-BLK

Prep Method: SW8015P
Date Prep: 04.09.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.09.2020 13:04	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122635

Matrix: Solid
MB Sample Id: 7700958-1-BLK

Prep Method: SW8015P
Date Prep: 04.09.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.09.2020 13:04	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122574

Matrix: Soil
MS Sample Id: 658406-001 S

Prep Method: SW8015P
Date Prep: 04.09.2020
MSD Sample Id: 658406-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	1020	102	987	98	70-135	3	35	mg/kg	04.09.2020 14:26	
Diesel Range Organics (DRO)	81.4	999	1130	105	1190	110	70-135	5	35	mg/kg	04.09.2020 14:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		126		70-135	%	04.09.2020 14:26
o-Terphenyl	134		128		70-135	%	04.09.2020 14:26

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122635

Matrix: Soil
MS Sample Id: 658383-006 S

Prep Method: SW8015P
Date Prep: 04.09.2020
MSD Sample Id: 658383-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	1010	101	1020	102	70-135	1	35	mg/kg	04.09.2020 14:26	
Diesel Range Organics (DRO)	<50.0	999	1100	110	1130	113	70-135	3	35	mg/kg	04.09.2020 14:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		126		70-135	%	04.09.2020 14:26
o-Terphenyl	128		129		70-135	%	04.09.2020 14:26

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122575

MB Sample Id: 7700965-1-BLK

Matrix: Solid

LCS Sample Id: 7700965-1-BKS

Prep Method: SW5030B

Date Prep: 04.09.2020

LCSD Sample Id: 7700965-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.107	107	0.110	110	70-130	3	35	mg/kg	04.09.2020 22:37	
Toluene	<0.00200	0.100	0.102	102	0.104	104	70-130	2	35	mg/kg	04.09.2020 22:37	
Ethylbenzene	<0.00200	0.100	0.0961	96	0.0989	99	71-129	3	35	mg/kg	04.09.2020 22:37	
m,p-Xylenes	<0.00400	0.200	0.199	100	0.204	102	70-135	2	35	mg/kg	04.09.2020 22:37	
o-Xylene	<0.00200	0.100	0.0999	100	0.104	104	71-133	4	35	mg/kg	04.09.2020 22:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		104		105		70-130	%	04.09.2020 22:37
4-Bromofluorobenzene	95		90		94		70-130	%	04.09.2020 22:37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122755

MB Sample Id: 7700968-1-BLK

Matrix: Solid

LCS Sample Id: 7700968-1-BKS

Prep Method: SW5030B

Date Prep: 04.09.2020

LCSD Sample Id: 7700968-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.104	104	0.107	107	70-130	3	35	mg/kg	04.10.2020 08:49	
Toluene	<0.00200	0.100	0.0983	98	0.101	101	70-130	3	35	mg/kg	04.10.2020 08:49	
Ethylbenzene	<0.00200	0.100	0.0921	92	0.0943	94	71-129	2	35	mg/kg	04.10.2020 08:49	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.194	97	70-135	3	35	mg/kg	04.10.2020 08:49	
o-Xylene	<0.00200	0.100	0.0965	97	0.0990	99	71-133	3	35	mg/kg	04.10.2020 08:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		105		104		70-130	%	04.10.2020 08:49
4-Bromofluorobenzene	94		93		93		70-130	%	04.10.2020 08:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122575

Parent Sample Id: 658342-041

Matrix: Soil

MS Sample Id: 658342-041 S

Prep Method: SW5030B

Date Prep: 04.09.2020

MSD Sample Id: 658342-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.115	115	0.119	119	70-130	3	35	mg/kg	04.09.2020 23:18	
Toluene	<0.00200	0.100	0.108	108	0.112	112	70-130	4	35	mg/kg	04.09.2020 23:18	
Ethylbenzene	<0.00200	0.100	0.0996	100	0.103	103	71-129	3	35	mg/kg	04.09.2020 23:18	
m,p-Xylenes	<0.00401	0.200	0.204	102	0.211	106	70-135	3	35	mg/kg	04.09.2020 23:18	
o-Xylene	<0.00200	0.100	0.103	103	0.107	107	71-133	4	35	mg/kg	04.09.2020 23:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		106		70-130	%	04.09.2020 23:18
4-Bromofluorobenzene	91		92		70-130	%	04.09.2020 23:18

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 658383

LT Environmental, Inc.
LVP Gathering System

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122755

Parent Sample Id: 658383-004

Matrix: Soil

MS Sample Id: 658383-004 S

Prep Method: SW5030B

Date Prep: 04.09.2020

MSD Sample Id: 658383-004 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	0.0834	83	0.0890	89	70-130	6	35	mg/kg	04.10.2020 09:30	
Toluene	<0.00201	0.100	0.0766	77	0.0811	81	70-130	6	35	mg/kg	04.10.2020 09:30	
Ethylbenzene	<0.00201	0.100	0.0740	74	0.0780	78	71-129	5	35	mg/kg	04.10.2020 09:30	
m,p-Xylenes	<0.00402	0.201	0.155	77	0.164	82	70-135	6	35	mg/kg	04.10.2020 09:30	
o-Xylene	<0.00201	0.100	0.0788	79	0.0837	84	71-133	6	35	mg/kg	04.10.2020 09:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		70-130	%	04.10.2020 09:30
4-Bromofluorobenzene	95		94		70-130	%	04.10.2020 09:30

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



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 Corsland, NM (432) 704-5440
 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

Chain of Custody

Work Order No: 1058583

Project Manager: Chris McElissson
 Company Name: LT Environmental
 Address: 820 Megan Ave Unit B
 City, State ZIP: RIFE, CO 81650
 Phone: 970 285 9985
 Email: kmckisson@kenco.com

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

Project Name: LVP Gathering System
 Project Number: 102720001
 Project Location: Eddy County
 Sampler's Name: Anna Byers
 PO #:
 Turn Around: Routine Rush
 Due Date:
 Quote #:
 Wet Ice: Yes No

Temp Blank: Yes No
 Temperature (°C): 1.0
 Received Intact: Yes No
 Cooler Custody Seals: Yes No N/A
 Sample Custody Seals: Yes No N/A
 Correction Factor: T-WM-007
 Total Containers: 7

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Preservative Codes
FS377		S	4/8/20	1335	5-6'	1	TPH (EPA 8015)	MeOH: Me
FS378				1358	5.5-6'	1	BTEX (EPA 8021)	None: NO
SWD2				1425	0.5-6'	1	Chloride (EPA 300.0)	HNO3: HN
SWD3				1430	0.5-6'	1		H2SO4: H2
SWD4				1445	0.5-6'	1		HCL: HL
RHD1				0835	0.5'	1		NaOH: Na
RHD1A				0845	4'	1		Zn Acetate+ NaOH: Zn

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) *Anna Byers* Received by: (Signature) *[Signature]* Date/Time: 4/8/20 16:41 Relinquished by: (Signature) Received by: (Signature) Date/Time

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.08.2020 04.41.00 PM

Work Order #: 658383

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007


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

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 04.08.2020

Checklist reviewed by:


Jessica Kramer

Date: 04.09.2020



Analytical Report 658383

for

LT Environmental, Inc.

Project Manager: Chris McKisson

LVP Gathering System

102720001

04.14.2020

Collected By: Client

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

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

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

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



04.14.2020

Project Manager: **Chris McKisson**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **658383**

LVP Gathering System

Project Address: Eddy County

Chris McKisson:

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) 658383. 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. 658383 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, slightly slanted style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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Sample Cross Reference 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FS77	S	04.08.2020 13:35	5 - 6 ft	658383-001
FS78	S	04.08.2020 13:58	5.5 - 6 ft	658383-002
SW02	S	04.08.2020 14:25	0.5 - 6 ft	658383-003
SW03	S	04.08.2020 14:30	0.5 - 6 ft	658383-004
SW04	S	04.08.2020 14:45	0.5 - 6 ft	658383-005
PH01	S	04.08.2020 08:35	0.5 ft	658383-006
PH01A	S	04.08.2020 08:45	4 ft	658383-007



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: LVP Gathering System

Project ID: 102720001
Work Order Number(s): 658383

Report Date: 04.14.2020
Date Received: 04.08.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3122575 BTEX by EPA 8021B

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

Batch: LBA-3122755 BTEX by EPA 8021B

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



Certificate of Analysis Summary 658383

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Wed 04.08.2020 16:41
Report Date: 04.14.2020 10:28
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	658383-001		658383-002		658383-003		658383-004		658383-005		658383-006	
	<i>Field Id:</i>	FS77		FS78		SW02		SW03		SW04		PH01	
	<i>Depth:</i>	5-6 ft		5.5-6 ft		0.5-6 ft		0.5-6 ft		0.5-6 ft		0.5- ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	04.08.2020 13:35		04.08.2020 13:58		04.08.2020 14:25		04.08.2020 14:30		04.08.2020 14:45		04.08.2020 08:35	
BTEX by EPA 8021B	<i>Extracted:</i>	04.09.2020 16:42		04.09.2020 16:42		04.09.2020 16:42		04.09.2020 16:49		04.09.2020 16:42		04.09.2020 16:49	
	<i>Analyzed:</i>	04.10.2020 06:26		04.10.2020 06:47		04.10.2020 07:07		04.10.2020 10:31		04.10.2020 07:27		04.10.2020 10:51	
	<i>Units/RL:</i>	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	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	
Toluene	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	
Ethylbenzene	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	
m,p-Xylenes	<0.00400	0.00400	<0.00401	0.00401	<0.00404	0.00404	<0.00401	0.00401	<0.00403	0.00403	<0.00399	0.00399	
o-Xylene	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	
Xylenes, Total	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	
Total BTEX	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	<0.00200	0.00200	
Chloride by EPA 300	<i>Extracted:</i>	04.09.2020 14:46		04.09.2020 14:46		04.09.2020 14:46		04.09.2020 14:46		04.09.2020 14:46		04.09.2020 14:46	
	<i>Analyzed:</i>	04.09.2020 16:21		04.09.2020 16:27		04.09.2020 16:32		04.09.2020 16:37		04.09.2020 16:54		04.09.2020 16:59	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	176	9.92	76.8	9.96	13.1	10.1	<9.96	9.96	362	9.98	14.3	9.98	
TPH by SW8015 Mod	<i>Extracted:</i>	04.09.2020 12:44		04.09.2020 12:44		04.09.2020 12:44		04.09.2020 12:44		04.09.2020 12:44		04.09.2020 12:44	
	<i>Analyzed:</i>	04.09.2020 20:55		04.09.2020 21:15		04.09.2020 21:35		04.09.2020 16:08		04.09.2020 16:29		04.09.2020 14:06	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	<50.2	50.2	<50.2	50.2	<49.9	49.9	<50.2	50.2	<50.0	50.0	<49.9	49.9	
Diesel Range Organics (DRO)	<50.2	50.2	<50.2	50.2	<49.9	49.9	<50.2	50.2	<50.0	50.0	<49.9	49.9	
Motor Oil Range Hydrocarbons (MRO)	<50.2	50.2	<50.2	50.2	<49.9	49.9	<50.2	50.2	<50.0	50.0	79.0	49.9	
Total GRO-DRO	<50.2	50.2	<50.2	50.2	<49.9	49.9	<50.2	50.2	<50.0	50.0	<49.9	49.9	
Total TPH	<50.2	50.2	<50.2	50.2	<49.9	49.9	<50.2	50.2	<50.0	50.0	79.0	49.9	

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
Project Manager



Certificate of Analysis Summary 658383

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Wed 04.08.2020 16:41
Report Date: 04.14.2020 10:28
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658383-007				
	Field Id:	PH01A				
	Depth:	4- ft				
	Matrix:	SOIL				
	Sampled:	04.08.2020 08:45				
BTEX by EPA 8021B	Extracted:	04.09.2020 16:49				
	Analyzed:	04.10.2020 11:12				
	Units/RL:	mg/kg RL				
	Benzene	<0.0196 0.0196				
	Toluene	<0.0196 0.0196				
	Ethylbenzene	<0.0196 0.0196				
	m,p-Xylenes	<0.0392 0.0392				
	o-Xylene	<0.0196 0.0196				
Xylenes, Total	<0.0196 0.0196					
Total BTEX	<0.0196 0.0196					
Chloride by EPA 300	Extracted:	04.09.2020 14:46				
	Analyzed:	04.09.2020 17:05				
	Units/RL:	mg/kg RL				
Chloride	<10.0 10.0					
TPH by SW8015 Mod	Extracted:	04.09.2020 12:44				
	Analyzed:	04.09.2020 15:07				
	Units/RL:	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<50.3 50.3				
	Diesel Range Organics (DRO)	<50.3 50.3				
	Motor Oil Range Hydrocarbons (MRO)	<50.3 50.3				
	Total GRO-DRO	<50.3 50.3				
Total TPH	<50.3 50.3					

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
Project Manager



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS77	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-001	Date Collected: 04.08.2020 13:35	Sample Depth: 5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 14:46	Basis: Wet Weight
Seq Number: 3122582		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	176	9.92	mg/kg	04.09.2020 16:21		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.09.2020 12:44
Seq Number: 3122574	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.09.2020 20:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.09.2020 20:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.09.2020 20:55	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.09.2020 20:55	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.09.2020 20:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	04.09.2020 20:55	
o-Terphenyl	84-15-1	121	%	70-135	04.09.2020 20:55	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS77	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-001	Date Collected: 04.08.2020 13:35	Sample Depth: 5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:42	Basis: Wet Weight
Seq Number: 3122575		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.10.2020 06:26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.10.2020 06:26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.10.2020 06:26	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.10.2020 06:26	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS78	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-002	Date Collected: 04.08.2020 13:58	Sample Depth: 5.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 14:46	Basis: Wet Weight
Seq Number: 3122582		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	76.8	9.96	mg/kg	04.09.2020 16:27		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.09.2020 12:44
Seq Number: 3122574	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.09.2020 21:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.09.2020 21:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.09.2020 21:15	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.09.2020 21:15	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.09.2020 21:15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	04.09.2020 21:15	
o-Terphenyl	84-15-1	124	%	70-135	04.09.2020 21:15	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS78	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-002	Date Collected: 04.08.2020 13:58	Sample Depth: 5.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:42	Basis: Wet Weight
Seq Number: 3122575		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.10.2020 06:47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.10.2020 06:47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	04.10.2020 06:47		
1,4-Difluorobenzene	540-36-3	103	%	70-130	04.10.2020 06:47		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW02	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-003	Date Collected: 04.08.2020 14:25	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 14:46	Basis: Wet Weight
Seq Number: 3122582		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.1	10.1	mg/kg	04.09.2020 16:32		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.09.2020 12:44
Seq Number: 3122574	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.09.2020 21:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.09.2020 21:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.09.2020 21:35	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.09.2020 21:35	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.09.2020 21:35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	04.09.2020 21:35	
o-Terphenyl	84-15-1	124	%	70-135	04.09.2020 21:35	



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW02	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-003	Date Collected: 04.08.2020 14:25	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:42	Basis: Wet Weight
Seq Number: 3122575		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.10.2020 07:07	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.10.2020 07:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.10.2020 07:07		
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.10.2020 07:07		



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW03	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-004	Date Collected: 04.08.2020 14:30	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 14:46	Basis: Wet Weight
Seq Number: 3122582		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	04.09.2020 16:37	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.09.2020 12:44
Seq Number: 3122635	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.09.2020 16:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.09.2020 16:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.09.2020 16:08	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.09.2020 16:08	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.09.2020 16:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	04.09.2020 16:08	
o-Terphenyl	84-15-1	120	%	70-135	04.09.2020 16:08	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW03	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-004	Date Collected: 04.08.2020 14:30	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:49	Basis: Wet Weight
Seq Number: 3122755		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.10.2020 10:31	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.10.2020 10:31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.10.2020 10:31		
1,4-Difluorobenzene	540-36-3	101	%	70-130	04.10.2020 10:31		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW04	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-005	Date Collected: 04.08.2020 14:45	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 14:46	Basis: Wet Weight
Seq Number: 3122582		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	362	9.98	mg/kg	04.09.2020 16:54		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.09.2020 12:44
Seq Number: 3122635	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.09.2020 16:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.09.2020 16:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.09.2020 16:29	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.09.2020 16:29	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.09.2020 16:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	04.09.2020 16:29	
o-Terphenyl	84-15-1	111	%	70-135	04.09.2020 16:29	



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW04	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-005	Date Collected: 04.08.2020 14:45	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:42	Basis: Wet Weight
Seq Number: 3122575		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.10.2020 07:27	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.10.2020 07:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.10.2020 07:27		
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.10.2020 07:27		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: PH01	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-006	Date Collected: 04.08.2020 08:35	Sample Depth: 0.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 14:46	Basis: Wet Weight
Seq Number: 3122582		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.3	9.98	mg/kg	04.09.2020 16:59		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.09.2020 12:44
Seq Number: 3122635	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.13.2020 14:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.13.2020 14:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	79.0	49.9	mg/kg	04.13.2020 14:15		1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.13.2020 14:15	U	1
Total TPH	PHC635	79.0	49.9	mg/kg	04.13.2020 14:15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	04.09.2020 14:06	
o-Terphenyl	84-15-1	120	%	70-135	04.09.2020 14:06	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: PH01	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-006	Date Collected: 04.08.2020 08:35	Sample Depth: 0.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:49	Basis: Wet Weight
Seq Number: 3122755		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.10.2020 10:51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.10.2020 10:51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.10.2020 10:51		
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.10.2020 10:51		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: PH01A	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-007	Date Collected: 04.08.2020 08:45	Sample Depth: 4 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 14:46	Basis: Wet Weight
Seq Number: 3122582		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	04.09.2020 17:05	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.09.2020 12:44
Seq Number: 3122635	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.09.2020 15:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.09.2020 15:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.09.2020 15:07	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.09.2020 15:07	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.09.2020 15:07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	04.09.2020 15:07	
o-Terphenyl	84-15-1	110	%	70-135	04.09.2020 15:07	



Certificate of Analytical Results 658383

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: PH01A	Matrix: Soil	Date Received: 04.08.2020 16:41
Lab Sample Id: 658383-007	Date Collected: 04.08.2020 08:45	Sample Depth: 4 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.09.2020 16:49	Basis: Wet Weight
Seq Number: 3122755		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
Toluene	108-88-3	<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
Ethylbenzene	100-41-4	<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
m,p-Xylenes	179601-23-1	<0.0392	0.0392	mg/kg	04.10.2020 11:12	U	1
o-Xylene	95-47-6	<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
Xylenes, Total	1330-20-7	<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
Total BTEX		<0.0196	0.0196	mg/kg	04.10.2020 11:12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.10.2020 11:12		
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.10.2020 11:12		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: Chloride by EPA 300

Seq Number: 3122582
MB Sample Id: 7700932-1-BLK

Matrix: Solid
LCS Sample Id: 7700932-1-BKS

Prep Method: E300P
Date Prep: 04.09.2020
LCSD Sample Id: 7700932-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	256	102	258	103	90-110	1	20	mg/kg	04.09.2020 15:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3122582
Parent Sample Id: 658381-001

Matrix: Soil
MS Sample Id: 658381-001 S

Prep Method: E300P
Date Prep: 04.09.2020
MSD Sample Id: 658381-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	118	199	328	106	326	104	90-110	1	20	mg/kg	04.09.2020 15:26	

Analytical Method: Chloride by EPA 300

Seq Number: 3122582
Parent Sample Id: 658383-004

Matrix: Soil
MS Sample Id: 658383-004 S

Prep Method: E300P
Date Prep: 04.09.2020
MSD Sample Id: 658383-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.96	249	247	99	250	100	90-110	1	20	mg/kg	04.09.2020 16:43	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122574
MB Sample Id: 7700947-1-BLK

Matrix: Solid
LCS Sample Id: 7700947-1-BKS

Prep Method: SW8015P
Date Prep: 04.09.2020
LCSD Sample Id: 7700947-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1010	101	945	95	70-135	7	35	mg/kg	04.09.2020 13:25	
Diesel Range Organics (DRO)	<50.0	1000	1120	112	1080	108	70-135	4	35	mg/kg	04.09.2020 13:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		128		124		70-135	%	04.09.2020 13:25
o-Terphenyl	119		126		124		70-135	%	04.09.2020 13:25

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122635
MB Sample Id: 7700958-1-BLK

Matrix: Solid
LCS Sample Id: 7700958-1-BKS

Prep Method: SW8015P
Date Prep: 04.09.2020
LCSD Sample Id: 7700958-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	877	88	971	97	70-135	10	35	mg/kg	04.09.2020 13:25	
Diesel Range Organics (DRO)	<50.0	1000	952	95	1070	107	70-135	12	35	mg/kg	04.09.2020 13:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		126		119		70-135	%	04.09.2020 13:25
o-Terphenyl	113		112		122		70-135	%	04.09.2020 13:25

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122574

Matrix: Solid
MB Sample Id: 7700947-1-BLK

Prep Method: SW8015P
Date Prep: 04.09.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.09.2020 13:04	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122635

Matrix: Solid
MB Sample Id: 7700958-1-BLK

Prep Method: SW8015P
Date Prep: 04.09.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.09.2020 13:04	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122574
Parent Sample Id: 658406-001

Matrix: Soil
MS Sample Id: 658406-001 S

Prep Method: SW8015P
Date Prep: 04.09.2020
MSD Sample Id: 658406-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	1020	102	987	98	70-135	3	35	mg/kg	04.09.2020 14:26	
Diesel Range Organics (DRO)	81.4	999	1130	105	1190	110	70-135	5	35	mg/kg	04.09.2020 14:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	130		126		70-135	%	04.09.2020 14:26
o-Terphenyl	134		128		70-135	%	04.09.2020 14:26

Analytical Method: TPH by SW8015 Mod
Seq Number: 3122635
Parent Sample Id: 658383-006

Matrix: Soil
MS Sample Id: 658383-006 S

Prep Method: SW8015P
Date Prep: 04.09.2020
MSD Sample Id: 658383-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	1010	101	1020	102	70-135	1	35	mg/kg	04.09.2020 14:26	
Diesel Range Organics (DRO)	<50.0	999	1100	110	1130	113	70-135	3	35	mg/kg	04.09.2020 14:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		126		70-135	%	04.09.2020 14:26
o-Terphenyl	128		129		70-135	%	04.09.2020 14:26

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122575

MB Sample Id: 7700965-1-BLK

Matrix: Solid

LCS Sample Id: 7700965-1-BKS

Prep Method: SW5030B

Date Prep: 04.09.2020

LCSD Sample Id: 7700965-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.107	107	0.110	110	70-130	3	35	mg/kg	04.09.2020 22:37	
Toluene	<0.00200	0.100	0.102	102	0.104	104	70-130	2	35	mg/kg	04.09.2020 22:37	
Ethylbenzene	<0.00200	0.100	0.0961	96	0.0989	99	71-129	3	35	mg/kg	04.09.2020 22:37	
m,p-Xylenes	<0.00400	0.200	0.199	100	0.204	102	70-135	2	35	mg/kg	04.09.2020 22:37	
o-Xylene	<0.00200	0.100	0.0999	100	0.104	104	71-133	4	35	mg/kg	04.09.2020 22:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		104		105		70-130	%	04.09.2020 22:37
4-Bromofluorobenzene	95		90		94		70-130	%	04.09.2020 22:37

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122755

MB Sample Id: 7700968-1-BLK

Matrix: Solid

LCS Sample Id: 7700968-1-BKS

Prep Method: SW5030B

Date Prep: 04.09.2020

LCSD Sample Id: 7700968-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.104	104	0.107	107	70-130	3	35	mg/kg	04.10.2020 08:49	
Toluene	<0.00200	0.100	0.0983	98	0.101	101	70-130	3	35	mg/kg	04.10.2020 08:49	
Ethylbenzene	<0.00200	0.100	0.0921	92	0.0943	94	71-129	2	35	mg/kg	04.10.2020 08:49	
m,p-Xylenes	<0.00400	0.200	0.189	95	0.194	97	70-135	3	35	mg/kg	04.10.2020 08:49	
o-Xylene	<0.00200	0.100	0.0965	97	0.0990	99	71-133	3	35	mg/kg	04.10.2020 08:49	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		105		104		70-130	%	04.10.2020 08:49
4-Bromofluorobenzene	94		93		93		70-130	%	04.10.2020 08:49

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122575

Parent Sample Id: 658342-041

Matrix: Soil

MS Sample Id: 658342-041 S

Prep Method: SW5030B

Date Prep: 04.09.2020

MSD Sample Id: 658342-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.115	115	0.119	119	70-130	3	35	mg/kg	04.09.2020 23:18	
Toluene	<0.00200	0.100	0.108	108	0.112	112	70-130	4	35	mg/kg	04.09.2020 23:18	
Ethylbenzene	<0.00200	0.100	0.0996	100	0.103	103	71-129	3	35	mg/kg	04.09.2020 23:18	
m,p-Xylenes	<0.00401	0.200	0.204	102	0.211	106	70-135	3	35	mg/kg	04.09.2020 23:18	
o-Xylene	<0.00200	0.100	0.103	103	0.107	107	71-133	4	35	mg/kg	04.09.2020 23:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		106		70-130	%	04.09.2020 23:18
4-Bromofluorobenzene	91		92		70-130	%	04.09.2020 23:18

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 658383

LT Environmental, Inc.
LVP Gathering System

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122755

Parent Sample Id: 658383-004

Matrix: Soil

MS Sample Id: 658383-004 S

Prep Method: SW5030B

Date Prep: 04.09.2020

MSD Sample Id: 658383-004 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	0.0834	83	0.0890	89	70-130	6	35	mg/kg	04.10.2020 09:30	
Toluene	<0.00201	0.100	0.0766	77	0.0811	81	70-130	6	35	mg/kg	04.10.2020 09:30	
Ethylbenzene	<0.00201	0.100	0.0740	74	0.0780	78	71-129	5	35	mg/kg	04.10.2020 09:30	
m,p-Xylenes	<0.00402	0.201	0.155	77	0.164	82	70-135	6	35	mg/kg	04.10.2020 09:30	
o-Xylene	<0.00201	0.100	0.0788	79	0.0837	84	71-133	6	35	mg/kg	04.10.2020 09:30	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		105		70-130	%	04.10.2020 09:30
4-Bromofluorobenzene	95		94		70-130	%	04.10.2020 09:30

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



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 Corsland, NM (432) 704-5440
 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

Chain of Custody

Work Order No: 1058583

Project Manager: Chris McElissson Bit to (if different)

Company Name: LT Environmental Company Name: LT Environmental

Address: 820 Megan Ave Unit B Address:

City, State ZIP: Rifle, CO 81660 City, State ZIP:

Phone: 970 285 9985 Email: kmckissone@ltenv.com + abyers@ltenv.com

Program: UST/PST PRP Brownfields RRC Superfund

State of Project: Level II Level III PST/UST TRRP Level IV

Reporting Level: Level II Level III PST/UST TRRP Level IV

Deliverables: EDD ADAPT Other: _____

Project Name: LVP Gathering System Turn Around: Routine Rush: _____

Project Number: 102720001 Project Location: Eddy County

Sampler's Name: Anna Byers PO #: _____ Quote #: _____

SAMPLE RECEIPT

Temperature (°C): 1.0 Temp Blank: Yes No Wet Ice: Yes No

Received Intact: Yes No Thermometer ID: T-WM-007

Cooler Custody Seals: Yes No N/A Correction Factor: -0.2

Sample Custody Seals: Yes No N/A Total Containers: 7

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Preservative Codes
FS77		S	4/8/20	1335	5-6'	1	TPH (EPA 8015)	MeOH: Me
FS78				1358	5.5-6'	1	BTEX (EPA 8021)	None: NO
SWD2				1425	0.5-6'	1	Chloride (EPA 300.0)	HNO3: HN
SWD3				1430	0.5-6'	1		H2SO4: H2
SWD4				1445	0.5-6'	1		HCL: HL
PTH1				0835	0.5'	1		NaOH: Na
PTH1A				0845	4'	1		Zn Acetate+ NaOH: Zn

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) Anna Byers Received by: (Signature) [Signature]

Date/Time: 4/8/20 16:41

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.08.2020 04.41.00 PM

Work Order #: 658383

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007


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

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 04.08.2020

Checklist reviewed by:


Jessica Kramer

Date: 04.09.2020



Analytical Report 658612

for

LT Environmental, Inc.

Project Manager: Chris McKisson

LVP Gathering System

102720001

04.14.2020

Collected By: Client

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

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

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

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



04.14.2020

Project Manager: **Chris McKisson**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **658612**

LVP Gathering System

Project Address: Eddy County

Chris McKisson:

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) 658612. 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. 658612 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, slightly slanted style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 658612

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW06	S	04.10.2020 10:45	0.5 - 6 ft	658612-001
SW05	S	04.10.2020 07:38	0.5 - 6 ft	658612-002
SW15	S	04.10.2020 09:10	0.5 - 6 ft	658612-003
SW07	S	04.10.2020 11:30	0.5 - 6 ft	658612-004
SW08	S	04.10.2020 14:00	0.5 - 7 ft	658612-005



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: LVP Gathering System

Project ID: 102720001
Work Order Number(s): 658612

Report Date: 04.14.2020
Date Received: 04.10.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3122893 BTEX by EPA 8021B

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



Certificate of Analysis Summary 658612

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Fri 04.10.2020 14:52
Report Date: 04.14.2020 13:52
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	658612-001	658612-002	658612-003	658612-004	658612-005	
	<i>Field Id:</i>	SW06	SW05	SW15	SW07	SW08	
	<i>Depth:</i>	0.5-6 ft	0.5-6 ft	0.5-6 ft	0.5-6 ft	0.5-7 ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	04.10.2020 10:45	04.10.2020 07:38	04.10.2020 09:10	04.10.2020 11:30	04.10.2020 14:00	
BTEX by EPA 8021B	<i>Extracted:</i>	04.13.2020 09:32	04.13.2020 09:32	04.13.2020 09:32	04.13.2020 09:32	04.13.2020 09:32	
	<i>Analyzed:</i>	04.13.2020 14:05	04.13.2020 14:25	04.13.2020 14:46	04.13.2020 15:06	04.13.2020 16:07	
	<i>Units/RL:</i>	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	<0.00201 0.00201	<0.00200 0.00200	
	Toluene	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	
	Ethylbenzene	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	
	m,p-Xylenes	<0.00399 0.00399	<0.00402 0.00402	<0.00401 0.00401	<0.00402 0.00402	<0.00399 0.00399	
o-Xylene	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Xylenes, Total	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Total BTEX	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200		
Chloride by EPA 300	<i>Extracted:</i>	04.11.2020 09:13	04.11.2020 09:13	04.11.2020 09:13	04.11.2020 09:13	04.11.2020 09:13	
	<i>Analyzed:</i>	04.11.2020 16:12	04.11.2020 16:30	04.11.2020 16:36	04.11.2020 16:42	04.11.2020 16:48	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride	440 9.86	<9.98 9.98	46.8 9.98	12.7 9.98	15.0 10.0		
TPH by SW8015 Mod	<i>Extracted:</i>	04.10.2020 16:00	04.10.2020 16:00	04.10.2020 16:00	04.10.2020 16:00	04.10.2020 16:00	
	<i>Analyzed:</i>	04.11.2020 03:52	04.11.2020 04:12	04.11.2020 04:33	04.11.2020 04:53	04.11.2020 05:13	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
	Gasoline Range Hydrocarbons (GRO)	<49.8 49.8	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.3 50.3	
	Diesel Range Organics (DRO)	<49.8 49.8	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.3 50.3	
Motor Oil Range Hydrocarbons (MRO)	<49.8 49.8	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.3 50.3		
Total GRO-DRO	<49.8 49.8	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.3 50.3		
Total TPH	<49.8 49.8	<50.2 50.2	<50.3 50.3	<50.2 50.2	<50.3 50.3		

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

Jessica Kramer
Project Manager



Certificate of Analytical Results 658612

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW06	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658612-001	Date Collected: 04.10.2020 10:45	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 09:13	Basis: Wet Weight
Seq Number: 3122773		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	440	9.86	mg/kg	04.11.2020 16:12		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.10.2020 16:00
Seq Number: 3122832	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.11.2020 03:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.11.2020 03:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.11.2020 03:52	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.11.2020 03:52	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.11.2020 03:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	04.11.2020 03:52	
o-Terphenyl	84-15-1	94	%	70-135	04.11.2020 03:52	



Certificate of Analytical Results 658612

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW06	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658612-001	Date Collected: 04.10.2020 10:45	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.13.2020 14:05	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.13.2020 14:05	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.13.2020 14:05	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.13.2020 14:05	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.13.2020 14:05	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.13.2020 14:05	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.13.2020 14:05	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.13.2020 14:05		
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.13.2020 14:05		



Certificate of Analytical Results 658612

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW05	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658612-002	Date Collected: 04.10.2020 07:38	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 09:13	Basis: Wet Weight
Seq Number: 3122773		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	04.11.2020 16:30	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.10.2020 16:00
Seq Number: 3122832	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.11.2020 04:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.11.2020 04:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.11.2020 04:12	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.11.2020 04:12	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.11.2020 04:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	04.11.2020 04:12	
o-Terphenyl	84-15-1	99	%	70-135	04.11.2020 04:12	



Certificate of Analytical Results 658612

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW05	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658612-002	Date Collected: 04.10.2020 07:38	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.13.2020 14:25	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.13.2020 14:25	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.13.2020 14:25	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.13.2020 14:25	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.13.2020 14:25	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.13.2020 14:25	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.13.2020 14:25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.13.2020 14:25		
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.13.2020 14:25		



Certificate of Analytical Results 658612

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW15	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658612-003	Date Collected: 04.10.2020 09:10	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 09:13	Basis: Wet Weight
Seq Number: 3122773		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	46.8	9.98	mg/kg	04.11.2020 16:36		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.10.2020 16:00
Seq Number: 3122832	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.11.2020 04:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.11.2020 04:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.11.2020 04:33	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.11.2020 04:33	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.11.2020 04:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	04.11.2020 04:33	
o-Terphenyl	84-15-1	94	%	70-135	04.11.2020 04:33	



Certificate of Analytical Results 658612

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW15	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658612-003	Date Collected: 04.10.2020 09:10	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.13.2020 14:46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.13.2020 14:46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.13.2020 14:46	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.13.2020 14:46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.13.2020 14:46	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.13.2020 14:46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.13.2020 14:46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.13.2020 14:46		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.13.2020 14:46		



Certificate of Analytical Results 658612

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **SW07** Matrix: Soil Date Received: 04.10.2020 14:52
 Lab Sample Id: 658612-004 Date Collected: 04.10.2020 11:30 Sample Depth: 0.5 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.11.2020 09:13 Basis: Wet Weight
 Seq Number: 3122773

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.7	9.98	mg/kg	04.11.2020 16:42		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.10.2020 16:00 Basis: Wet Weight
 Seq Number: 3122832

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.11.2020 04:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.11.2020 04:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.11.2020 04:53	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.11.2020 04:53	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.11.2020 04:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	04.11.2020 04:53	
o-Terphenyl	84-15-1	96	%	70-135	04.11.2020 04:53	



Certificate of Analytical Results 658612

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW07	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658612-004	Date Collected: 04.10.2020 11:30	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.13.2020 15:06	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.13.2020 15:06	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.13.2020 15:06	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.13.2020 15:06	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.13.2020 15:06	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.13.2020 15:06	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.13.2020 15:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.13.2020 15:06		
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.13.2020 15:06		



Certificate of Analytical Results 658612

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW08	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658612-005	Date Collected: 04.10.2020 14:00	Sample Depth: 0.5 - 7 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 09:13	Basis: Wet Weight
Seq Number: 3122773		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.0	10.0	mg/kg	04.11.2020 16:48		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.10.2020 16:00
Seq Number: 3122832	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.11.2020 05:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.11.2020 05:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.11.2020 05:13	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.11.2020 05:13	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.11.2020 05:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	88	%	70-135	04.11.2020 05:13	
o-Terphenyl	84-15-1	94	%	70-135	04.11.2020 05:13	



Certificate of Analytical Results 658612

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW08	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658612-005	Date Collected: 04.10.2020 14:00	Sample Depth: 0.5 - 7 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.13.2020 16:07	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.13.2020 16:07	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.13.2020 16:07	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.13.2020 16:07	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.13.2020 16:07	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.13.2020 16:07	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.13.2020 16:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.13.2020 16:07		
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.13.2020 16:07		



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: Chloride by EPA 300

Seq Number: 3122773
MB Sample Id: 7701110-1-BLK

Matrix: Solid
LCS Sample Id: 7701110-1-BKS

Prep Method: E300P
Date Prep: 04.11.2020
LCSD Sample Id: 7701110-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	258	103	262	105	90-110	2	20	mg/kg	04.11.2020 14:20	

Analytical Method: Chloride by EPA 300

Seq Number: 3122773
Parent Sample Id: 658610-016

Matrix: Soil
MS Sample Id: 658610-016 S

Prep Method: E300P
Date Prep: 04.11.2020
MSD Sample Id: 658610-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1420	200	1620	100	1630	105	90-110	1	20	mg/kg	04.11.2020 15:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3122773
Parent Sample Id: 658616-061

Matrix: Soil
MS Sample Id: 658616-061 S

Prep Method: E300P
Date Prep: 04.11.2020
MSD Sample Id: 658616-061 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	64.7	199	274	105	272	104	90-110	1	20	mg/kg	04.11.2020 14:37	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122832
MB Sample Id: 7701070-1-BLK

Matrix: Solid
LCS Sample Id: 7701070-1-BKS

Prep Method: SW8015P
Date Prep: 04.10.2020
LCSD Sample Id: 7701070-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	771	77	935	94	70-135	19	35	mg/kg	04.11.2020 01:10	
Diesel Range Organics (DRO)	<50.0	1000	709	71	857	86	70-135	19	35	mg/kg	04.11.2020 01:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	86		85		101		70-135	%	04.11.2020 01:10
o-Terphenyl	91		84		99		70-135	%	04.11.2020 01:10

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122832

Matrix: Solid
MB Sample Id: 7701070-1-BLK

Prep Method: SW8015P
Date Prep: 04.10.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.11.2020 00:50	

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122832
Parent Sample Id: 658610-014

Matrix: Soil
MS Sample Id: 658610-014 S

Prep Method: SW8015P
Date Prep: 04.10.2020
MSD Sample Id: 658610-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	885	89	898	90	70-135	1	35	mg/kg	04.11.2020 02:11	
Diesel Range Organics (DRO)	<50.0	999	819	82	833	83	70-135	2	35	mg/kg	04.11.2020 02:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		104		70-135	%	04.11.2020 02:11
o-Terphenyl	102		102		70-135	%	04.11.2020 02:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122893
MB Sample Id: 7701120-1-BLK

Matrix: Solid
LCS Sample Id: 7701120-1-BKS

Prep Method: SW5030B
Date Prep: 04.13.2020
LCSD Sample Id: 7701120-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.105	105	0.109	109	70-130	4	35	mg/kg	04.13.2020 10:21	
Toluene	<0.00200	0.100	0.101	101	0.105	105	70-130	4	35	mg/kg	04.13.2020 10:21	
Ethylbenzene	<0.00200	0.100	0.0959	96	0.0998	100	71-129	4	35	mg/kg	04.13.2020 10:21	
m,p-Xylenes	<0.00400	0.200	0.200	100	0.207	104	70-135	3	35	mg/kg	04.13.2020 10:21	
o-Xylene	<0.00200	0.100	0.100	100	0.104	104	71-133	4	35	mg/kg	04.13.2020 10:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		104		104		70-130	%	04.13.2020 10:21
4-Bromofluorobenzene	97		91		92		70-130	%	04.13.2020 10:21

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122893
Parent Sample Id: 658613-001

Matrix: Soil
MS Sample Id: 658613-001 S

Prep Method: SW5030B
Date Prep: 04.13.2020
MSD Sample Id: 658613-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.109	109	0.0899	89	70-130	19	35	mg/kg	04.13.2020 11:01	
Toluene	<0.00200	0.0998	0.105	105	0.0857	85	70-130	20	35	mg/kg	04.13.2020 11:01	
Ethylbenzene	<0.00200	0.0998	0.0970	97	0.0770	76	71-129	23	35	mg/kg	04.13.2020 11:01	
m,p-Xylenes	<0.00399	0.200	0.201	101	0.157	78	70-135	25	35	mg/kg	04.13.2020 11:01	
o-Xylene	<0.00200	0.0998	0.101	101	0.0795	79	71-133	24	35	mg/kg	04.13.2020 11:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	04.13.2020 11:01
4-Bromofluorobenzene	97		93		70-130	%	04.13.2020 11:01

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



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Chain of Custody

Work Order No: 15081012

Project Manager:	Chris McKisson	Bill to: (if different)	→
Company Name:	LT Environmental	Company Name:	→
Address:	820 Megan Ave, Unit B	Address:	
City, State ZIP:	Rice, TX 78650	City, State ZIP:	
Phone:	970 285 9985	Email:	cmckisson@xenco.com + abeyers@xenco.com
Project Name:	LVP Gathering System	Turn Around	
Project Number:	102720001	Routine	<input checked="" type="checkbox"/>
Project Location:	Edley County	Rush:	
Sampler's Name:	Anna Beyers	Due Date:	
PO #:		Quote #:	

SAMPLE RECEIPT	Temperature (°C):	1.8	Temp Blank:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wet Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Received Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID	T-NVLR-207		
	Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Correction Factor:	-0.2		
	Sample Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Total Containers:	5		

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Preservative Codes	Sample Comments
SW06		S	4/10/20	1045	0.5-6'	1	TPH (EPA 8015)	MeOH: Me	
SW05		S		0738	0.5-6'	1	BTEX (EPA 8021)	None: NO	
SW15		S		0910	0.5-6'	1	Chloride (EPA 300.0)	HNO3: HN	
SW07		S		1130	0.5-6'	1		H2SO4: H2	
SW08		S		1400	0.5-7'	1		HCL: HL	
								Zn Acetate+ NaOH: Zn	

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SIO2 Na Sr Tl Sn U V Zn

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U

1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Anna Beyers</i>	<i>[Signature]</i>	4/10/20 1452			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.10.2020 02.52.00 PM

Work Order #: 658612

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007

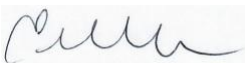
Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6*Custody Seals Signed and dated?	Yes
#7 *Chain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

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 04.10.2020

Checklist reviewed by:


Jessica Kramer

Date: 04.13.2020



Analytical Report 658613

for

LT Environmental, Inc.

Project Manager: Chris McKisson

LVP Gathering System

102720001

04.14.2020

Collected By: Client

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

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

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

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



04.14.2020

Project Manager: **Chris McKisson**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **658613**

LVP Gathering System

Project Address: Eddy County

Chris McKisson:

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) 658613. 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. 658613 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, slightly slanted style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW01	S	04.09.2020 12:05	0.5 - 6 ft	658613-001
SW14	S	04.09.2020 11:10	0.5 - 6 ft	658613-002
SW16	S	04.09.2020 11:25	0.5 - 6 ft	658613-003
SW18	S	04.09.2020 12:30	0.5 - 6 ft	658613-004
SW21	S	04.09.2020 12:55	0.5 - 6 ft	658613-005
FS79	S	04.09.2020 09:50	5.5 - 6 ft	658613-006
FS80	S	04.09.2020 09:58	5.5 - 6 ft	658613-007
FS82	S	04.09.2020 10:30	5.5 - 6 ft	658613-008



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: LVP Gathering System

Project ID: 102720001
Work Order Number(s): 658613

Report Date: 04.14.2020
Date Received: 04.10.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3122893 BTEX by EPA 8021B

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



Certificate of Analysis Summary 658613

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Fri 04.10.2020 14:52
Report Date: 04.14.2020 13:51
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	658613-001		658613-002		658613-003		658613-004		658613-005		658613-006	
	<i>Field Id:</i>	SW01		SW14		SW16		SW18		SW21		FS79	
	<i>Depth:</i>	0.5-6 ft		0.5-6 ft		0.5-6 ft		0.5-6 ft		0.5-6 ft		5.5-6 ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	04.09.2020 12:05		04.09.2020 11:10		04.09.2020 11:25		04.09.2020 12:30		04.09.2020 12:55		04.09.2020 09:50	
BTEX by EPA 8021B	<i>Extracted:</i>	04.13.2020 09:32		04.13.2020 09:32		04.13.2020 09:32		04.13.2020 09:32		04.13.2020 09:32		04.13.2020 09:32	
	<i>Analyzed:</i>	04.13.2020 12:03		04.13.2020 16:28		04.13.2020 16:48		04.13.2020 17:09		04.13.2020 17:29		04.13.2020 17:49	
	<i>Units/RL:</i>	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	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
Toluene	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
Ethylbenzene	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
m,p-Xylenes	<0.00399	0.00399	<0.00399	0.00399	<0.00397	0.00397	<0.00402	0.00402	<0.00404	0.00404	<0.00404	0.00404	
o-Xylene	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
Xylenes, Total	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
Total BTEX	<0.00200	0.00200	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201	<0.00202	0.00202	<0.00202	0.00202	
Chloride by EPA 300	<i>Extracted:</i>	04.11.2020 09:13		04.11.2020 09:13		04.11.2020 09:13		04.11.2020 10:16		04.11.2020 10:16		04.11.2020 10:16	
	<i>Analyzed:</i>	04.11.2020 16:54		04.11.2020 17:00		04.11.2020 17:06		04.11.2020 17:53		04.11.2020 17:59		04.11.2020 18:05	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	13.1	10.0	141	9.98	599	10.0	64.1	9.96	163	10.0	408	9.94	
TPH by SW8015 Mod	<i>Extracted:</i>	04.10.2020 18:00		04.10.2020 18:00		04.10.2020 18:00		04.10.2020 18:00		04.10.2020 18:00		04.13.2020 11:00	
	<i>Analyzed:</i>	04.13.2020 22:22		04.13.2020 22:42		04.13.2020 23:03		04.13.2020 23:23		04.13.2020 23:43		04.14.2020 03:04	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	<50.2	50.2	<50.3	50.3	<49.8	49.8	<50.0	50.0	<50.3	50.3	<49.9	49.9	
Diesel Range Organics (DRO)	<50.2	50.2	<50.3	50.3	<49.8	49.8	<50.0	50.0	<50.3	50.3	<49.9	49.9	
Motor Oil Range Hydrocarbons (MRO)	<50.2	50.2	<50.3	50.3	<49.8	49.8	<50.0	50.0	<50.3	50.3	<49.9	49.9	
Total GRO-DRO	<50.2	50.2	<50.3	50.3	<49.8	49.8	<50.0	50.0	<50.3	50.3	<49.9	49.9	
Total TPH	<50.2	50.2	<50.3	50.3	<49.8	49.8	<50.0	50.0	<50.3	50.3	<49.9	49.9	

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 658613

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Fri 04.10.2020 14:52
Report Date: 04.14.2020 13:51
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	658613-007	658613-008				
	<i>Field Id:</i>	FS80	FS82				
	<i>Depth:</i>	5.5-6 ft	5.5-6 ft				
	<i>Matrix:</i>	SOIL	SOIL				
	<i>Sampled:</i>	04.09.2020 09:58	04.09.2020 10:30				
BTEX by EPA 8021B	<i>Extracted:</i>	04.13.2020 09:32	04.13.2020 09:32				
	<i>Analyzed:</i>	04.13.2020 18:10	04.13.2020 18:30				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Benzene		<0.00202 0.00202	<0.00200 0.00200				
Toluene		<0.00202 0.00202	<0.00200 0.00200				
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200				
m,p-Xylenes		<0.00404 0.00404	<0.00399 0.00399				
o-Xylene		<0.00202 0.00202	<0.00200 0.00200				
Xylenes, Total		<0.00202 0.00202	<0.00200 0.00200				
Total BTEX		<0.00202 0.00202	<0.00200 0.00200				
Chloride by EPA 300	<i>Extracted:</i>	04.11.2020 10:16	04.11.2020 10:16				
	<i>Analyzed:</i>	04.11.2020 18:11	04.11.2020 18:17				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Chloride		13.2 9.98	457 9.92				
TPH by SW8015 Mod	<i>Extracted:</i>	04.13.2020 11:00	04.13.2020 11:00				
	<i>Analyzed:</i>	04.14.2020 04:04	04.14.2020 04:24				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.1 50.1				
Diesel Range Organics (DRO)		<49.9 49.9	<50.1 50.1				
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.1 50.1				
Total GRO-DRO		<49.9 49.9	<50.1 50.1				
Total TPH		<49.9 49.9	<50.1 50.1				

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
Project Manager



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW01	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-001	Date Collected: 04.09.2020 12:05	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 09:13	Basis: Wet Weight
Seq Number: 3122773		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.1	10.0	mg/kg	04.11.2020 16:54		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.10.2020 18:00
Seq Number: 3122924	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.13.2020 22:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.13.2020 22:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.13.2020 22:22	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.13.2020 22:22	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.13.2020 22:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	04.13.2020 22:22	
o-Terphenyl	84-15-1	98	%	70-135	04.13.2020 22:22	



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW01	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-001	Date Collected: 04.09.2020 12:05	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.13.2020 12:03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.13.2020 12:03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.13.2020 12:03	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.13.2020 12:03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.13.2020 12:03	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.13.2020 12:03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.13.2020 12:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.13.2020 12:03		
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.13.2020 12:03		



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW14	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-002	Date Collected: 04.09.2020 11:10	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 09:13	Basis: Wet Weight
Seq Number: 3122773		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	141	9.98	mg/kg	04.11.2020 17:00		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.10.2020 18:00
Seq Number: 3122924	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.13.2020 22:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.13.2020 22:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.13.2020 22:42	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.13.2020 22:42	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.13.2020 22:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	04.13.2020 22:42	
o-Terphenyl	84-15-1	93	%	70-135	04.13.2020 22:42	



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW14	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-002	Date Collected: 04.09.2020 11:10	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.13.2020 16:28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.13.2020 16:28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.13.2020 16:28	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.13.2020 16:28	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.13.2020 16:28	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.13.2020 16:28	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.13.2020 16:28	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.13.2020 16:28		
4-Bromofluorobenzene	460-00-4	94	%	70-130	04.13.2020 16:28		



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **SW16** Matrix: Soil Date Received: 04.10.2020 14:52
 Lab Sample Id: 658613-003 Date Collected: 04.09.2020 11:25 Sample Depth: 0.5 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.11.2020 09:13 Basis: Wet Weight
 Seq Number: 3122773

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	599	10.0	mg/kg	04.11.2020 17:06		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.10.2020 18:00 Basis: Wet Weight
 Seq Number: 3122924

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.13.2020 23:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.13.2020 23:03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.13.2020 23:03	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.13.2020 23:03	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.13.2020 23:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	04.13.2020 23:03	
o-Terphenyl	84-15-1	98	%	70-135	04.13.2020 23:03	



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW16	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-003	Date Collected: 04.09.2020 11:25	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.13.2020 16:48	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.13.2020 16:48	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.13.2020 16:48	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.13.2020 16:48	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.13.2020 16:48	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.13.2020 16:48	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.13.2020 16:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.13.2020 16:48		
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.13.2020 16:48		



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW18	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-004	Date Collected: 04.09.2020 12:30	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 10:16	Basis: Wet Weight
Seq Number: 3122776		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	64.1	9.96	mg/kg	04.11.2020 17:53		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.10.2020 18:00
Seq Number: 3122924	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.13.2020 23:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.13.2020 23:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.13.2020 23:23	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.13.2020 23:23	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.13.2020 23:23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	04.13.2020 23:23	
o-Terphenyl	84-15-1	100	%	70-135	04.13.2020 23:23	



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW18	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-004	Date Collected: 04.09.2020 12:30	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.13.2020 17:09	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.13.2020 17:09	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.13.2020 17:09	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.13.2020 17:09	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.13.2020 17:09	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.13.2020 17:09	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.13.2020 17:09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.13.2020 17:09		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.13.2020 17:09		



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW21	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-005	Date Collected: 04.09.2020 12:55	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 10:16	Basis: Wet Weight
Seq Number: 3122776		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	163	10.0	mg/kg	04.11.2020 17:59		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.10.2020 18:00
Seq Number: 3122924	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.13.2020 23:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.13.2020 23:43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.13.2020 23:43	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.13.2020 23:43	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.13.2020 23:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	89	%	70-135	04.13.2020 23:43	
o-Terphenyl	84-15-1	93	%	70-135	04.13.2020 23:43	



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW21	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-005	Date Collected: 04.09.2020 12:55	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.13.2020 17:29	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.13.2020 17:29	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.13.2020 17:29	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.13.2020 17:29	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.13.2020 17:29	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.13.2020 17:29	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.13.2020 17:29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.13.2020 17:29		
4-Bromofluorobenzene	460-00-4	100	%	70-130	04.13.2020 17:29		



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS79	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-006	Date Collected: 04.09.2020 09:50	Sample Depth: 5.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 10:16	Basis: Wet Weight
Seq Number: 3122776		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	408	9.94	mg/kg	04.11.2020 18:05		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.13.2020 11:00
Seq Number: 3122934	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.14.2020 03:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.14.2020 03:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.14.2020 03:04	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.14.2020 03:04	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.14.2020 03:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	04.14.2020 03:04	
o-Terphenyl	84-15-1	112	%	70-135	04.14.2020 03:04	



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: FS79	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-006	Date Collected: 04.09.2020 09:50	Sample Depth: 5.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.13.2020 17:49	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.13.2020 17:49	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.13.2020 17:49	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.13.2020 17:49	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.13.2020 17:49	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.13.2020 17:49	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.13.2020 17:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	04.13.2020 17:49		
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.13.2020 17:49		



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS80	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-007	Date Collected: 04.09.2020 09:58	Sample Depth: 5.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 10:16	Basis: Wet Weight
Seq Number: 3122776		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.2	9.98	mg/kg	04.11.2020 18:11		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.13.2020 11:00
Seq Number: 3122934	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.14.2020 04:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.14.2020 04:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.14.2020 04:04	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.14.2020 04:04	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.14.2020 04:04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	04.14.2020 04:04	
o-Terphenyl	84-15-1	114	%	70-135	04.14.2020 04:04	



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS80	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-007	Date Collected: 04.09.2020 09:58	Sample Depth: 5.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.13.2020 18:10	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.13.2020 18:10	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.13.2020 18:10	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.13.2020 18:10	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.13.2020 18:10	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.13.2020 18:10	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.13.2020 18:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.13.2020 18:10		
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.13.2020 18:10		



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS82	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-008	Date Collected: 04.09.2020 10:30	Sample Depth: 5.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.11.2020 10:16	Basis: Wet Weight
Seq Number: 3122776		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	457	9.92	mg/kg	04.11.2020 18:17		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.13.2020 11:00
Seq Number: 3122934	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.14.2020 04:24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.14.2020 04:24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.14.2020 04:24	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.14.2020 04:24	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.14.2020 04:24	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	04.14.2020 04:24	
o-Terphenyl	84-15-1	108	%	70-135	04.14.2020 04:24	



Certificate of Analytical Results 658613

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS82	Matrix: Soil	Date Received: 04.10.2020 14:52
Lab Sample Id: 658613-008	Date Collected: 04.09.2020 10:30	Sample Depth: 5.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.13.2020 09:32	Basis: Wet Weight
Seq Number: 3122893		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.13.2020 18:30	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.13.2020 18:30	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.13.2020 18:30	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.13.2020 18:30	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.13.2020 18:30	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.13.2020 18:30	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.13.2020 18:30	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.13.2020 18:30		
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.13.2020 18:30		



LT Environmental, Inc.
LVP Gathering System

Analytical Method: Chloride by EPA 300

Seq Number: 3122773
MB Sample Id: 7701110-1-BLK

Matrix: Solid
LCS Sample Id: 7701110-1-BKS

Prep Method: E300P
Date Prep: 04.11.2020
LCSD Sample Id: 7701110-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	258	103	262	105	90-110	2	20	mg/kg	04.11.2020 14:20	

Analytical Method: Chloride by EPA 300

Seq Number: 3122776
MB Sample Id: 7701112-1-BLK

Matrix: Solid
LCS Sample Id: 7701112-1-BKS

Prep Method: E300P
Date Prep: 04.11.2020
LCSD Sample Id: 7701112-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	261	104	262	105	90-110	0	20	mg/kg	04.11.2020 17:29	

Analytical Method: Chloride by EPA 300

Seq Number: 3122773
Parent Sample Id: 658610-016

Matrix: Soil
MS Sample Id: 658610-016 S

Prep Method: E300P
Date Prep: 04.11.2020
MSD Sample Id: 658610-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1420	200	1620	100	1630	105	90-110	1	20	mg/kg	04.11.2020 15:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3122773
Parent Sample Id: 658616-061

Matrix: Soil
MS Sample Id: 658616-061 S

Prep Method: E300P
Date Prep: 04.11.2020
MSD Sample Id: 658616-061 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	64.7	199	274	105	272	104	90-110	1	20	mg/kg	04.11.2020 14:37	

Analytical Method: Chloride by EPA 300

Seq Number: 3122776
Parent Sample Id: 658613-004

Matrix: Soil
MS Sample Id: 658613-004 S

Prep Method: E300P
Date Prep: 04.11.2020
MSD Sample Id: 658613-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	64.1	200	275	105	273	104	90-110	1	20	mg/kg	04.11.2020 17:47	

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122924
MB Sample Id: 7701140-1-BLK

Matrix: Solid
LCS Sample Id: 7701140-1-BKS

Prep Method: SW8015P
Date Prep: 04.10.2020
LCSD Sample Id: 7701140-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	967	97	963	96	70-135	0	35	mg/kg	04.13.2020 15:37	
Diesel Range Organics (DRO)	<50.0	1000	1070	107	1080	108	70-135	1	35	mg/kg	04.13.2020 15:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		119		105		70-135	%	04.13.2020 15:37
o-Terphenyl	111		98		99		70-135	%	04.13.2020 15:37

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122934
MB Sample Id: 7701154-1-BLK

Matrix: Solid
LCS Sample Id: 7701154-1-BKS

Prep Method: SW8015P
Date Prep: 04.13.2020
LCSD Sample Id: 7701154-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1060	106	1020	102	70-135	4	35	mg/kg	04.14.2020 02:24	
Diesel Range Organics (DRO)	<50.0	1000	1240	124	1180	118	70-135	5	35	mg/kg	04.14.2020 02:24	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		133		129		70-135	%	04.14.2020 02:24
o-Terphenyl	115		112		109		70-135	%	04.14.2020 02:24

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122924
MB Sample Id: 7701140-1-BLK

Matrix: Solid

Prep Method: SW8015P
Date Prep: 04.10.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.13.2020 15:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122934
MB Sample Id: 7701154-1-BLK

Matrix: Solid

Prep Method: SW8015P
Date Prep: 04.13.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.14.2020 02:03	

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122924
Parent Sample Id: 658616-051

Matrix: Soil
MS Sample Id: 658616-051 S

Prep Method: SW8015P
Date Prep: 04.10.2020
MSD Sample Id: 658616-051 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	995	832	84	914	91	70-135	9	35	mg/kg	04.13.2020 16:39	
Diesel Range Organics (DRO)	<49.8	995	774	78	855	86	70-135	10	35	mg/kg	04.13.2020 16:39	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		111		70-135	%	04.13.2020 16:39
o-Terphenyl	101		109		70-135	%	04.13.2020 16:39

Analytical Method: TPH by SW8015 Mod

Seq Number: 3122934
Parent Sample Id: 658613-006

Matrix: Soil
MS Sample Id: 658613-006 S

Prep Method: SW8015P
Date Prep: 04.13.2020
MSD Sample Id: 658613-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1020	102	1010	102	70-135	1	35	mg/kg	04.14.2020 03:24	
Diesel Range Organics (DRO)	<50.0	1000	1180	118	1160	117	70-135	2	35	mg/kg	04.14.2020 03:24	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		116		70-135	%	04.14.2020 03:24
o-Terphenyl	114		112		70-135	%	04.14.2020 03:24

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122893
MB Sample Id: 7701120-1-BLK

Matrix: Solid
LCS Sample Id: 7701120-1-BKS

Prep Method: SW5030B
Date Prep: 04.13.2020
LCSD Sample Id: 7701120-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.105	105	0.109	109	70-130	4	35	mg/kg	04.13.2020 10:21	
Toluene	<0.00200	0.100	0.101	101	0.105	105	70-130	4	35	mg/kg	04.13.2020 10:21	
Ethylbenzene	<0.00200	0.100	0.0959	96	0.0998	100	71-129	4	35	mg/kg	04.13.2020 10:21	
m,p-Xylenes	<0.00400	0.200	0.200	100	0.207	104	70-135	3	35	mg/kg	04.13.2020 10:21	
o-Xylene	<0.00200	0.100	0.100	100	0.104	104	71-133	4	35	mg/kg	04.13.2020 10:21	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		104		104		70-130	%	04.13.2020 10:21
4-Bromofluorobenzene	97		91		92		70-130	%	04.13.2020 10:21

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 658613

LT Environmental, Inc.
LVP Gathering System

Analytical Method: BTEX by EPA 8021B

Seq Number: 3122893

Parent Sample Id: 658613-001

Matrix: Soil

MS Sample Id: 658613-001 S

Prep Method: SW5030B

Date Prep: 04.13.2020

MSD Sample Id: 658613-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.109	109	0.0899	89	70-130	19	35	mg/kg	04.13.2020 11:01	
Toluene	<0.00200	0.0998	0.105	105	0.0857	85	70-130	20	35	mg/kg	04.13.2020 11:01	
Ethylbenzene	<0.00200	0.0998	0.0970	97	0.0770	76	71-129	23	35	mg/kg	04.13.2020 11:01	
m,p-Xylenes	<0.00399	0.200	0.201	101	0.157	78	70-135	25	35	mg/kg	04.13.2020 11:01	
o-Xylene	<0.00200	0.0998	0.101	101	0.0795	79	71-133	24	35	mg/kg	04.13.2020 11:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	04.13.2020 11:01
4-Bromofluorobenzene	97		93		70-130	%	04.13.2020 11:01

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.10.2020 02.52.00 PM

Work Order #: 658613

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007


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

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 04.10.2020

Checklist reviewed by:


Jessica Kramer

Date: 04.13.2020



Analytical Report 658962

for

LT Environmental, Inc.

Project Manager: Chris McKisson

LVP Gathering System

102720001

04.20.2020

Collected By: Client

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

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

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

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



04.20.2020

Project Manager: **Chris McKisson**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **658962**

LVP Gathering System

Project Address: Eddy County

Chris McKisson:

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) 658962. 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. 658962 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, slightly slanted style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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

**Sample Cross Reference 658962****LT Environmental, Inc., Arvada, CO**

LVP Gathering System

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW17	S	04.14.2020 08:30	0.5 - 7 ft	658962-001
SW09	S	04.14.2020 09:00	0.5 - 7 ft	658962-002
FS81	S	04.14.2020 09:10	6 - 7 ft	658962-003
FS84	S	04.14.2020 14:05	6 ft	658962-004
SW19	S	04.14.2020 16:10	0.5 - 10 ft	658962-005
FS83	S	04.14.2020 15:30	8 - 10 ft	658962-006
SW10	S	04.14.2020 16:05	0.5 - 10 ft	658962-007
FS85	S	04.15.2020 09:27	7 - 9 ft	658962-008
FS86	S	04.15.2020 10:27	6 - 8 ft	658962-009
SW20	S	04.15.2020 10:05	0.5 - 9 ft	658962-010
SW11	S	04.15.2020 09:30	0.5 - 9 ft	658962-011
SW12	S	04.15.2020 10:30	0.5 - 8 ft	658962-012
SW22	S	04.15.2020 10:25	0.5 - 8 ft	658962-013



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: LVP Gathering System

Project ID: 102720001
Work Order Number(s): 658962

Report Date: 04.20.2020
Date Received: 04.15.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3123297 BTEX by EPA 8021B

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

Batch: LBA-3123367 BTEX by EPA 8021B

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



Certificate of Analysis Summary 658962

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Wed 04.15.2020 16:58
Report Date: 04.20.2020 19:24
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	658962-001	658962-002	658962-003	658962-004	658962-005	658962-006
	<i>Field Id:</i>	SW17	SW09	FS81	FS84	SW19	FS83
	<i>Depth:</i>	0.5-7 ft	0.5-7 ft	6-7 ft	6- ft	0.5-10 ft	8-10 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	04.14.2020 08:30	04.14.2020 09:00	04.14.2020 09:10	04.14.2020 14:05	04.14.2020 16:10	04.14.2020 15:30
BTEX by EPA 8021B	<i>Extracted:</i>	04.16.2020 07:22	04.16.2020 07:22	04.16.2020 07:22	04.16.2020 07:22	04.16.2020 07:22	04.16.2020 07:22
	<i>Analyzed:</i>	04.16.2020 14:26	04.16.2020 14:46	04.16.2020 15:06	04.16.2020 15:27	04.16.2020 15:47	04.16.2020 16:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.0104 0.0104	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.0104 0.0104	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.0104 0.0104	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00404 0.00404	<0.0208 0.0208	<0.00398 0.00398	<0.00397 0.00397	<0.00400 0.00400	<0.00400 0.00400
o-Xylene		<0.00202 0.00202	<0.0104 0.0104	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Xylenes, Total		<0.00202 0.00202	<0.0104 0.0104	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.0104 0.0104	<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	04.16.2020 07:18	04.16.2020 07:18	04.16.2020 07:18	04.16.2020 07:18	04.16.2020 07:18	04.16.2020 07:18
	<i>Analyzed:</i>	04.16.2020 09:49	04.16.2020 09:55	04.16.2020 10:00	04.16.2020 10:17	04.16.2020 10:22	04.16.2020 10:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		12.1 9.98	<9.98 9.98	14.9 9.92	<9.94 9.94	102 10.0	15.3 10.1
TPH by SW8015 Mod	<i>Extracted:</i>	04.16.2020 12:00	04.16.2020 12:00	04.16.2020 12:00	04.16.2020 12:00	04.16.2020 12:00	04.16.2020 12:00
	<i>Analyzed:</i>	04.16.2020 14:08	04.16.2020 14:29	04.16.2020 14:49	04.16.2020 15:10	04.16.2020 15:30	04.16.2020 15:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.8 49.8	<50.1 50.1
Diesel Range Organics (DRO)		<49.9 49.9	<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.8 49.8	<50.1 50.1
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.8 49.8	<50.1 50.1
Total GRO-DRO		<49.9 49.9	<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.8 49.8	<50.1 50.1
Total TPH		<49.9 49.9	<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.8 49.8	<50.1 50.1

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 658962

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Wed 04.15.2020 16:58
Report Date: 04.20.2020 19:24
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	658962-007		658962-008		658962-009		658962-010		658962-011		658962-012	
	<i>Field Id:</i>	SW10		FS85		FS86		SW20		SW11		SW12	
	<i>Depth:</i>	0.5-10 ft		7-9 ft		6-8 ft		0.5-9 ft		0.5-9 ft		0.5-8 ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	04.14.2020 16:05		04.15.2020 09:27		04.15.2020 10:27		04.15.2020 10:05		04.15.2020 09:30		04.15.2020 10:30	
BTEX by EPA 8021B	<i>Extracted:</i>	04.16.2020 07:22		04.16.2020 07:22		04.16.2020 07:22		04.16.2020 17:57		04.16.2020 07:22		04.16.2020 07:22	
	<i>Analyzed:</i>	04.16.2020 16:28		04.16.2020 16:48		04.16.2020 17:50		04.17.2020 16:58		04.16.2020 18:10		04.16.2020 18:30	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	
Toluene	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	
Ethylbenzene	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	
m,p-Xylenes	<0.00398	0.00398	<0.00398	0.00398	<0.00398	0.00398	<0.00402	0.00402	<0.00401	0.00401	<0.00402	0.00402	
o-Xylene	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	
Xylenes, Total	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	
Total BTEX	<0.00199	0.00199	<0.00199	0.00199	<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00201	0.00201	
Chloride by EPA 300	<i>Extracted:</i>	04.16.2020 07:18		04.16.2020 07:18		04.16.2020 07:18		04.16.2020 07:18		04.16.2020 07:18		04.16.2020 07:18	
	<i>Analyzed:</i>	04.16.2020 10:33		04.16.2020 10:39		04.16.2020 10:44		04.16.2020 11:00		04.16.2020 11:06		04.16.2020 11:22	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	59.9	9.92	116	9.94	<9.96	9.96	24.3	9.98	178	9.92	582	9.96	
TPH by SW8015 Mod	<i>Extracted:</i>	04.16.2020 12:00		04.16.2020 12:00		04.16.2020 12:00		04.16.2020 12:00		04.16.2020 12:00		04.16.2020 12:00	
	<i>Analyzed:</i>	04.16.2020 16:11		04.16.2020 16:31		04.16.2020 16:52		04.16.2020 17:33		04.16.2020 18:55		04.16.2020 19:16	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	<49.8	49.8	<50.1	50.1	<49.9	49.9	<50.3	50.3	<50.2	50.2	<50.3	50.3	
Diesel Range Organics (DRO)	<49.8	49.8	<50.1	50.1	<49.9	49.9	<50.3	50.3	<50.2	50.2	<50.3	50.3	
Motor Oil Range Hydrocarbons (MRO)	<49.8	49.8	<50.1	50.1	<49.9	49.9	<50.3	50.3	<50.2	50.2	<50.3	50.3	
Total GRO-DRO	<49.8	49.8	<50.1	50.1	<49.9	49.9	<50.3	50.3	<50.2	50.2	<50.3	50.3	
Total TPH	<49.8	49.8	<50.1	50.1	<49.9	49.9	<50.3	50.3	<50.2	50.2	<50.3	50.3	

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 658962

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Wed 04.15.2020 16:58
Report Date: 04.20.2020 19:24
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	658962-013				
	Field Id:	SW22				
	Depth:	0.5-8 ft				
	Matrix:	SOIL				
	Sampled:	04.15.2020 10:25				
BTEX by EPA 8021B	Extracted:	04.16.2020 07:22				
	Analyzed:	04.16.2020 18:51				
	Units/RL:	mg/kg RL				
	Benzene	<0.00200 0.00200				
	Toluene	<0.00200 0.00200				
	Ethylbenzene	<0.00200 0.00200				
	m,p-Xylenes	<0.00401 0.00401				
	o-Xylene	<0.00200 0.00200				
Xylenes, Total	<0.00200 0.00200					
Total BTEX	<0.00200 0.00200					
Chloride by EPA 300	Extracted:	04.16.2020 07:18				
	Analyzed:	04.16.2020 11:28				
	Units/RL:	mg/kg RL				
Chloride	12.4 9.98					
TPH by SW8015 Mod	Extracted:	04.16.2020 12:00				
	Analyzed:	04.16.2020 19:36				
	Units/RL:	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<50.0 50.0				
	Diesel Range Organics (DRO)	<50.0 50.0				
	Motor Oil Range Hydrocarbons (MRO)	<50.0 50.0				
Total GRO-DRO	<50.0 50.0					
Total TPH	<50.0 50.0					

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Jessica Kramer
Project Manager



Certificate of Analytical Results 658962

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **SW17** Matrix: Soil Date Received: 04.15.2020 16:58
 Lab Sample Id: 658962-001 Date Collected: 04.14.2020 08:30 Sample Depth: 0.5 - 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.16.2020 07:18 Basis: Wet Weight
 Seq Number: 3123309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.1	9.98	mg/kg	04.16.2020 09:49		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.16.2020 12:00 Basis: Wet Weight
 Seq Number: 3123293

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.16.2020 14:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.16.2020 14:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.16.2020 14:08	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.16.2020 14:08	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.16.2020 14:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	04.16.2020 14:08	
o-Terphenyl	84-15-1	103	%	70-135	04.16.2020 14:08	



Certificate of Analytical Results 658962

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW17	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-001	Date Collected: 04.14.2020 08:30	Sample Depth: 0.5 - 7 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.16.2020 14:26	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.16.2020 14:26	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.16.2020 14:26	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.16.2020 14:26	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.16.2020 14:26	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.16.2020 14:26	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.16.2020 14:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.16.2020 14:26		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.16.2020 14:26		



Certificate of Analytical Results 658962

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW09	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-002	Date Collected: 04.14.2020 09:00	Sample Depth: 0.5 - 7 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:18	Basis: Wet Weight
Seq Number: 3123309		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	04.16.2020 09:55	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 12:00
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.16.2020 14:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.16.2020 14:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.16.2020 14:29	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.16.2020 14:29	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.16.2020 14:29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	04.16.2020 14:29	
o-Terphenyl	84-15-1	103	%	70-135	04.16.2020 14:29	



Certificate of Analytical Results 658962

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW09	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-002	Date Collected: 04.14.2020 09:00	Sample Depth: 0.5 - 7 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0104	0.0104	mg/kg	04.16.2020 14:46	U	1
Toluene	108-88-3	<0.0104	0.0104	mg/kg	04.16.2020 14:46	U	1
Ethylbenzene	100-41-4	<0.0104	0.0104	mg/kg	04.16.2020 14:46	U	1
m,p-Xylenes	179601-23-1	<0.0208	0.0208	mg/kg	04.16.2020 14:46	U	1
o-Xylene	95-47-6	<0.0104	0.0104	mg/kg	04.16.2020 14:46	U	1
Xylenes, Total	1330-20-7	<0.0104	0.0104	mg/kg	04.16.2020 14:46	U	1
Total BTEX		<0.0104	0.0104	mg/kg	04.16.2020 14:46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	04.16.2020 14:46		
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.16.2020 14:46		



Certificate of Analytical Results 658962

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS81	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-003	Date Collected: 04.14.2020 09:10	Sample Depth: 6 - 7 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:18	Basis: Wet Weight
Seq Number: 3123309		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.9	9.92	mg/kg	04.16.2020 10:00		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 12:00
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.16.2020 14:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.16.2020 14:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.16.2020 14:49	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.16.2020 14:49	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.16.2020 14:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	04.16.2020 14:49	
o-Terphenyl	84-15-1	106	%	70-135	04.16.2020 14:49	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS81	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-003	Date Collected: 04.14.2020 09:10	Sample Depth: 6 - 7 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.16.2020 15:06	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.16.2020 15:06	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.16.2020 15:06	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.16.2020 15:06	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.16.2020 15:06	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.16.2020 15:06	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.16.2020 15:06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.16.2020 15:06		
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.16.2020 15:06		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS84	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-004	Date Collected: 04.14.2020 14:05	Sample Depth: 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:18	Basis: Wet Weight
Seq Number: 3123309		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.94	9.94	mg/kg	04.16.2020 10:17	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 12:00
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.16.2020 15:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.16.2020 15:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.16.2020 15:10	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.16.2020 15:10	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.16.2020 15:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	04.16.2020 15:10	
o-Terphenyl	84-15-1	102	%	70-135	04.16.2020 15:10	



Certificate of Analytical Results 658962

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: FS84	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-004	Date Collected: 04.14.2020 14:05	Sample Depth: 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.16.2020 15:27	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.16.2020 15:27	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.16.2020 15:27	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.16.2020 15:27	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.16.2020 15:27	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.16.2020 15:27	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.16.2020 15:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.16.2020 15:27	
1,4-Difluorobenzene	540-36-3	101	%	70-130	04.16.2020 15:27	



Certificate of Analytical Results 658962

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **SW19** Matrix: Soil Date Received: 04.15.2020 16:58
 Lab Sample Id: 658962-005 Date Collected: 04.14.2020 16:10 Sample Depth: 0.5 - 10 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.16.2020 07:18 Basis: Wet Weight
 Seq Number: 3123309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	102	10.0	mg/kg	04.16.2020 10:22		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.16.2020 12:00 Basis: Wet Weight
 Seq Number: 3123293

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.16.2020 15:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.16.2020 15:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.16.2020 15:30	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.16.2020 15:30	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.16.2020 15:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	04.16.2020 15:30	
o-Terphenyl	84-15-1	104	%	70-135	04.16.2020 15:30	



Certificate of Analytical Results 658962

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW19	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-005	Date Collected: 04.14.2020 16:10	Sample Depth: 0.5 - 10 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.16.2020 15:47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.16.2020 15:47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.16.2020 15:47	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.16.2020 15:47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.16.2020 15:47	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.16.2020 15:47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.16.2020 15:47	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.16.2020 15:47		
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.16.2020 15:47		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS83	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-006	Date Collected: 04.14.2020 15:30	Sample Depth: 8 - 10 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:18	Basis: Wet Weight
Seq Number: 3123309		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.3	10.1	mg/kg	04.16.2020 10:28		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 12:00
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.16.2020 15:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.16.2020 15:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.16.2020 15:50	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.16.2020 15:50	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.16.2020 15:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	04.16.2020 15:50	
o-Terphenyl	84-15-1	106	%	70-135	04.16.2020 15:50	



Certificate of Analytical Results 658962

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS83	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-006	Date Collected: 04.14.2020 15:30	Sample Depth: 8 - 10 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.16.2020 16:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.16.2020 16:08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.16.2020 16:08	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.16.2020 16:08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.16.2020 16:08	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.16.2020 16:08	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.16.2020 16:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.16.2020 16:08		
1,4-Difluorobenzene	540-36-3	104	%	70-130	04.16.2020 16:08		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW10	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-007	Date Collected: 04.14.2020 16:05	Sample Depth: 0.5 - 10 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:18	Basis: Wet Weight
Seq Number: 3123309		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	59.9	9.92	mg/kg	04.16.2020 10:33		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 12:00
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.16.2020 16:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.16.2020 16:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.16.2020 16:11	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.16.2020 16:11	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.16.2020 16:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	04.16.2020 16:11	
o-Terphenyl	84-15-1	103	%	70-135	04.16.2020 16:11	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW10	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-007	Date Collected: 04.14.2020 16:05	Sample Depth: 0.5 - 10 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.16.2020 16:28	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.16.2020 16:28	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.16.2020 16:28	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.16.2020 16:28	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.16.2020 16:28	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.16.2020 16:28	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.16.2020 16:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.16.2020 16:28	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.16.2020 16:28	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS85	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-008	Date Collected: 04.15.2020 09:27	Sample Depth: 7 - 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:18	Basis: Wet Weight
Seq Number: 3123309		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	116	9.94	mg/kg	04.16.2020 10:39		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 12:00
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.16.2020 16:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.16.2020 16:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.16.2020 16:31	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.16.2020 16:31	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.16.2020 16:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	04.16.2020 16:31	
o-Terphenyl	84-15-1	104	%	70-135	04.16.2020 16:31	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS85	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-008	Date Collected: 04.15.2020 09:27	Sample Depth: 7 - 9 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.16.2020 16:48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.16.2020 16:48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.16.2020 16:48	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.16.2020 16:48	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.16.2020 16:48	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.16.2020 16:48	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.16.2020 16:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.16.2020 16:48		
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.16.2020 16:48		



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **FS86** Matrix: Soil Date Received: 04.15.2020 16:58
 Lab Sample Id: 658962-009 Date Collected: 04.15.2020 10:27 Sample Depth: 6 - 8 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.16.2020 07:18 Basis: Wet Weight
 Seq Number: 3123309

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	04.16.2020 10:44	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.16.2020 12:00 Basis: Wet Weight
 Seq Number: 3123293

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.16.2020 16:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.16.2020 16:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.16.2020 16:52	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.16.2020 16:52	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.16.2020 16:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	04.16.2020 16:52	
o-Terphenyl	84-15-1	103	%	70-135	04.16.2020 16:52	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS86	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-009	Date Collected: 04.15.2020 10:27	Sample Depth: 6 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.16.2020 17:50	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.16.2020 17:50	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.16.2020 17:50	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.16.2020 17:50	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.16.2020 17:50	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.16.2020 17:50	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.16.2020 17:50	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.16.2020 17:50		
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.16.2020 17:50		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW20	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-010	Date Collected: 04.15.2020 10:05	Sample Depth: 0.5 - 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:18	Basis: Wet Weight
Seq Number: 3123309		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.3	9.98	mg/kg	04.16.2020 11:00		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 12:00
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.16.2020 17:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.16.2020 17:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.16.2020 17:33	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.16.2020 17:33	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.16.2020 17:33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	04.16.2020 17:33	
o-Terphenyl	84-15-1	102	%	70-135	04.16.2020 17:33	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW20	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-010	Date Collected: 04.15.2020 10:05	Sample Depth: 0.5 - 9 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 17:57	Basis: Wet Weight
Seq Number: 3123367		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.17.2020 16:58	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.17.2020 16:58	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.17.2020 16:58	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.17.2020 16:58	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.17.2020 16:58	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.17.2020 16:58	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.17.2020 16:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.17.2020 16:58	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.17.2020 16:58	



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LVP Gathering System

Sample Id: SW11	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-011	Date Collected: 04.15.2020 09:30	Sample Depth: 0.5 - 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:18	Basis: Wet Weight
Seq Number: 3123309		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	178	9.92	mg/kg	04.16.2020 11:06		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 12:00
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.16.2020 18:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.16.2020 18:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.16.2020 18:55	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.16.2020 18:55	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.16.2020 18:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	04.16.2020 18:55	
o-Terphenyl	84-15-1	109	%	70-135	04.16.2020 18:55	



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW11	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-011	Date Collected: 04.15.2020 09:30	Sample Depth: 0.5 - 9 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.16.2020 18:10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.16.2020 18:10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.16.2020 18:10	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.16.2020 18:10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.16.2020 18:10	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.16.2020 18:10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.16.2020 18:10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	92	%	70-130	04.16.2020 18:10		
1,4-Difluorobenzene	540-36-3	101	%	70-130	04.16.2020 18:10		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW12	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-012	Date Collected: 04.15.2020 10:30	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:18	Basis: Wet Weight
Seq Number: 3123309		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	582	9.96	mg/kg	04.16.2020 11:22		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 12:00
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.16.2020 19:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.16.2020 19:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.16.2020 19:16	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.16.2020 19:16	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.16.2020 19:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	04.16.2020 19:16	
o-Terphenyl	84-15-1	106	%	70-135	04.16.2020 19:16	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW12	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-012	Date Collected: 04.15.2020 10:30	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.16.2020 18:30	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.16.2020 18:30	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.16.2020 18:30	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.16.2020 18:30	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.16.2020 18:30	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.16.2020 18:30	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.16.2020 18:30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.16.2020 18:30	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.16.2020 18:30	



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LVP Gathering System

Sample Id: SW22	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-013	Date Collected: 04.15.2020 10:25	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:18	Basis: Wet Weight
Seq Number: 3123309		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.4	9.98	mg/kg	04.16.2020 11:28		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 12:00
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.16.2020 19:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.16.2020 19:36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.16.2020 19:36	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.16.2020 19:36	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.16.2020 19:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	04.16.2020 19:36	
o-Terphenyl	84-15-1	109	%	70-135	04.16.2020 19:36	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW22	Matrix: Soil	Date Received: 04.15.2020 16:58
Lab Sample Id: 658962-013	Date Collected: 04.15.2020 10:25	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.16.2020 07:22	Basis: Wet Weight
Seq Number: 3123297		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.16.2020 18:51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.16.2020 18:51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.16.2020 18:51	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.16.2020 18:51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.16.2020 18:51	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.16.2020 18:51	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.16.2020 18:51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.16.2020 18:51		
1,4-Difluorobenzene	540-36-3	108	%	70-130	04.16.2020 18:51		



LT Environmental, Inc.
LVP Gathering System

Analytical Method: Chloride by EPA 300
Seq Number: 3123309
MB Sample Id: 7701377-1-BLK

Matrix: Solid
LCS Sample Id: 7701377-1-BKS

Prep Method: E300P
Date Prep: 04.16.2020
LCSD Sample Id: 7701377-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	255	102	90-110	0	20	mg/kg	04.16.2020 09:16	

Analytical Method: Chloride by EPA 300
Seq Number: 3123309
Parent Sample Id: 658843-001

Matrix: Soil
MS Sample Id: 658843-001 S

Prep Method: E300P
Date Prep: 04.16.2020
MSD Sample Id: 658843-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	863	399	1270	102	1270	102	90-110	0	20	mg/kg	04.16.2020 09:33	

Analytical Method: Chloride by EPA 300
Seq Number: 3123309
Parent Sample Id: 658962-009

Matrix: Soil
MS Sample Id: 658962-009 S

Prep Method: E300P
Date Prep: 04.16.2020
MSD Sample Id: 658962-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<9.98	399	407	102	413	104	90-110	1	20	mg/kg	04.16.2020 10:50	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3123293
MB Sample Id: 7701402-1-BLK

Matrix: Solid
LCS Sample Id: 7701402-1-BKS

Prep Method: SW8015P
Date Prep: 04.16.2020
LCSD Sample Id: 7701402-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	974	97	940	94	70-135	4	35	mg/kg	04.16.2020 12:05	
Diesel Range Organics (DRO)	<50.0	1000	1110	111	1060	106	70-135	5	35	mg/kg	04.16.2020 12:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		108		107		70-135	%	04.16.2020 12:05
o-Terphenyl	96		108		120		70-135	%	04.16.2020 12:05

Analytical Method: TPH by SW8015 Mod
Seq Number: 3123293

Matrix: Solid
MB Sample Id: 7701402-1-BLK

Prep Method: SW8015P
Date Prep: 04.16.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.16.2020 11:45	

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: TPH by SW8015 Mod
Seq Number: 3123293
Parent Sample Id: 658990-008

Matrix: Soil
MS Sample Id: 658990-008 S

Prep Method: SW8015P
Date Prep: 04.16.2020
MSD Sample Id: 658990-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	973	97	1040	104	70-135	7	35	mg/kg	04.16.2020 13:28	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	1130	113	70-135	0	35	mg/kg	04.16.2020 13:28	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		119		70-135	%	04.16.2020 13:28
o-Terphenyl	112		118		70-135	%	04.16.2020 13:28

Analytical Method: BTEX by EPA 8021B
Seq Number: 3123297
MB Sample Id: 7701378-1-BLK

Matrix: Solid
LCS Sample Id: 7701378-1-BKS

Prep Method: SW5030B
Date Prep: 04.16.2020
LCSD Sample Id: 7701378-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.108	108	0.113	113	70-130	5	35	mg/kg	04.16.2020 12:03	
Toluene	<0.00200	0.100	0.103	103	0.108	108	70-130	5	35	mg/kg	04.16.2020 12:03	
Ethylbenzene	<0.00200	0.100	0.0968	97	0.100	100	71-129	3	35	mg/kg	04.16.2020 12:03	
m,p-Xylenes	<0.00400	0.200	0.199	100	0.206	103	70-135	3	35	mg/kg	04.16.2020 12:03	
o-Xylene	<0.00200	0.100	0.102	102	0.105	105	71-133	3	35	mg/kg	04.16.2020 12:03	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		105		105		70-130	%	04.16.2020 12:03
4-Bromofluorobenzene	95		96		92		70-130	%	04.16.2020 12:03

Analytical Method: BTEX by EPA 8021B
Seq Number: 3123367
MB Sample Id: 7701468-1-BLK

Matrix: Solid
LCS Sample Id: 7701468-1-BKS

Prep Method: SW5030B
Date Prep: 04.16.2020
LCSD Sample Id: 7701468-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.110	110	0.107	107	70-130	3	35	mg/kg	04.17.2020 08:07	
Toluene	<0.00200	0.100	0.104	104	0.101	101	70-130	3	35	mg/kg	04.17.2020 08:07	
Ethylbenzene	<0.00200	0.100	0.0967	97	0.0939	94	71-129	3	35	mg/kg	04.17.2020 08:07	
m,p-Xylenes	<0.00400	0.200	0.199	100	0.192	96	70-135	4	35	mg/kg	04.17.2020 08:07	
o-Xylene	<0.00200	0.100	0.102	102	0.0990	99	71-133	3	35	mg/kg	04.17.2020 08:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		104		104		70-130	%	04.17.2020 08:07
4-Bromofluorobenzene	96		94		90		70-130	%	04.17.2020 08:07

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: BTEX by EPA 8021B

Seq Number: 3123297

Parent Sample Id: 658843-001

Matrix: Soil

MS Sample Id: 658843-001 S

Prep Method: SW5030B

Date Prep: 04.16.2020

MSD Sample Id: 658843-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.106	106	0.0807	81	70-130	27	35	mg/kg	04.16.2020 12:44	
Toluene	<0.00200	0.0998	0.102	102	0.0796	80	70-130	25	35	mg/kg	04.16.2020 12:44	
Ethylbenzene	<0.00200	0.0998	0.0957	96	0.0764	77	71-129	22	35	mg/kg	04.16.2020 12:44	
m,p-Xylenes	<0.00399	0.200	0.197	99	0.160	80	70-135	21	35	mg/kg	04.16.2020 12:44	
o-Xylene	<0.00200	0.0998	0.100	100	0.0838	84	71-133	18	35	mg/kg	04.16.2020 12:44	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		70-130	%	04.16.2020 12:44
4-Bromofluorobenzene	96		96		70-130	%	04.16.2020 12:44

Analytical Method: BTEX by EPA 8021B

Seq Number: 3123367

Parent Sample Id: 659115-020

Matrix: Soil

MS Sample Id: 659115-020 S

Prep Method: SW5030B

Date Prep: 04.16.2020

MSD Sample Id: 659115-020 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	0.0834	83	0.0833	83	70-130	0	35	mg/kg	04.17.2020 09:28	
Toluene	<0.00201	0.100	0.0791	79	0.0780	78	70-130	1	35	mg/kg	04.17.2020 09:28	
Ethylbenzene	<0.00201	0.100	0.0729	73	0.0722	72	71-129	1	35	mg/kg	04.17.2020 09:28	
m,p-Xylenes	<0.00402	0.201	0.149	74	0.147	74	70-135	1	35	mg/kg	04.17.2020 09:28	
o-Xylene	<0.00201	0.100	0.0757	76	0.0743	74	71-133	2	35	mg/kg	04.17.2020 09:28	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		105		70-130	%	04.17.2020 09:28
4-Bromofluorobenzene	96		94		70-130	%	04.17.2020 09:28

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.15.2020 04.58.00 PM

Work Order #: 658962

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007


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

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 04.15.2020

Checklist reviewed by:


Jessica Kramer

Date: 04.16.2020



Analytical Report 659086

for

LT Environmental, Inc.

Project Manager: Chris McKisson

LVP Gathering System

102720001

04.20.2020

Collected By: Client

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

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

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

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



04.20.2020

Project Manager: **Chris McKisson**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **659086**

LVP Gathering System

Project Address: Eddy County

Chris McKisson:

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) 659086. 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. 659086 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, slightly slanted style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 659086

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW13	S	04.15.2020 14:45	0.5 - 7 ft	659086-001
SW23	S	04.15.2020 14:52	0.5 - 8 ft	659086-002
SW24	S	04.15.2020 14:55	0.5 - 8 ft	659086-003
SW25	S	04.16.2020 08:50	0.5 - 8 ft	659086-004
SW26	S	04.15.2020 15:00	0.5 - 8 ft	659086-005
SW27	S	04.15.2020 11:50	0.5 - 6 ft	659086-006
SW28	S	04.15.2020 15:15	0.5 - 7 ft	659086-007
SW29	S	04.15.2020 15:12	0.5 - 8 ft	659086-008
SW30	S	04.15.2020 15:10	0.5 - 8 ft	659086-009
SW31	S	04.15.2020 15:05	0.5 - 8 ft	659086-010
SW32	S	04.15.2020 15:02	0.5 - 8 ft	659086-011
FS87	S	04.15.2020 15:18	7 - 8.5 ft	659086-012
FS89	S	04.15.2020 15:27	8 - 8.5 ft	659086-013
FS90	S	04.15.2020 15:30	7 - 8.5 ft	659086-014
FS91	S	04.15.2020 15:34	0.5 - 8.5 ft	659086-015
FS92	S	04.16.2020 11:47	7 - 8 ft	659086-016
FS93	S	04.16.2020 10:35	6 - 2 ft	659086-017
FS88	S	04.15.2020 15:24	8 - 8.5 ft	659086-018
SW33	S	04.16.2020 10:10	0.5 - 8 ft	659086-019
SW34	S	04.16.2020 13:45	0.5 - 8 ft	659086-020
SW35	S	04.16.2020 11:52	0.5 - 7 ft	659086-021
SW36	S	04.16.2020 10:52	0.5 - 8 ft	659086-022
SW37	S	04.16.2020 13:10	0.5 - 6 ft	659086-023
FS 94	S	04.16.2020 12:47	6 - 2 ft	659086-024



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: LVP Gathering System

Project ID: 102720001
Work Order Number(s): 659086

Report Date: 04.20.2020
Date Received: 04.16.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3123436 BTEX by EPA 8021B

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

Batch: LBA-3123439 BTEX by EPA 8021B

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



Certificate of Analysis Summary 659086

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Thu 04.16.2020 14:56
Report Date: 04.20.2020 19:24
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	659086-001	659086-002	659086-003	659086-004	659086-005	659086-006
	<i>Field Id:</i>	SW13	SW23	SW24	SW25	SW26	SW27
	<i>Depth:</i>	0.5-7 ft	0.5-8 ft	0.5-8 ft	0.5-8 ft	0.5-8 ft	0.5-6 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	04.15.2020 14:45	04.15.2020 14:52	04.15.2020 14:55	04.16.2020 08:50	04.15.2020 15:00	04.15.2020 11:50
BTEX by EPA 8021B	<i>Extracted:</i>	04.17.2020 15:31	04.17.2020 15:31	04.17.2020 15:31	04.17.2020 15:31	04.17.2020 15:31	04.17.2020 15:31
	<i>Analyzed:</i>	04.18.2020 06:13	04.18.2020 06:34	04.18.2020 06:54	04.18.2020 07:14	04.18.2020 07:35	04.18.2020 07:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00397 0.00397	<0.00398 0.00398	<0.00399 0.00399	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Xylenes, Total		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00198 0.00198	<0.00199 0.00199	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	04.17.2020 07:31	04.17.2020 07:31	04.17.2020 07:31	04.17.2020 07:31	04.17.2020 07:31	04.17.2020 07:31
	<i>Analyzed:</i>	04.17.2020 11:06	04.17.2020 12:10	04.17.2020 12:15	04.17.2020 12:21	04.17.2020 12:26	04.17.2020 12:43
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		10.2 9.96	<9.92 9.92	33.0 10.0	48.5 9.96	11.5 9.92	26.0 9.98
TPH by SW8015 Mod	<i>Extracted:</i>	04.16.2020 16:30	04.16.2020 17:00	04.16.2020 17:00	04.16.2020 17:00	04.16.2020 17:00	04.16.2020 17:00
	<i>Analyzed:</i>	04.16.2020 21:38	04.16.2020 17:12	04.16.2020 19:16	04.16.2020 19:36	04.16.2020 19:56	04.16.2020 20:17
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.0 50.0	<49.8 49.8	<49.8 49.8
Diesel Range Organics (DRO)		<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.0 50.0	<49.8 49.8	<49.8 49.8
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.0 50.0	<49.8 49.8	<49.8 49.8
Total GRO-DRO		<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.0 50.0	<49.8 49.8	<49.8 49.8
Total TPH		<49.9 49.9	<49.8 49.8	<50.1 50.1	<50.0 50.0	<49.8 49.8	<49.8 49.8

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 659086

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Thu 04.16.2020 14:56
Report Date: 04.20.2020 19:24
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	659086-007	659086-008	659086-009	659086-010	659086-011	659086-012
	<i>Field Id:</i>	SW28	SW29	SW30	SW31	SW32	FS87
	<i>Depth:</i>	0.5-7 ft	0.5-8 ft	0.5-8 ft	0.5-8 ft	0.5-8 ft	7-8.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	04.15.2020 15:15	04.15.2020 15:12	04.15.2020 15:10	04.15.2020 15:05	04.15.2020 15:02	04.15.2020 15:18
BTEX by EPA 8021B	<i>Extracted:</i>	04.17.2020 15:31	04.17.2020 15:31	04.17.2020 15:31	04.17.2020 15:31	04.17.2020 15:31	04.17.2020 15:31
	<i>Analyzed:</i>	04.18.2020 08:16	04.18.2020 08:36	04.18.2020 08:56	04.18.2020 09:17	04.18.2020 10:18	04.18.2020 10:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Benzene	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198
Toluene	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
Ethylbenzene	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
m,p-Xylenes	<0.00399 0.00399	<0.00398 0.00398	<0.00401 0.00401	<0.00399 0.00399	<0.00399 0.00399	<0.00396 0.00396	
o-Xylene	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
Xylenes, Total	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
Total BTEX	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00198 0.00198	
Chloride by EPA 300	<i>Extracted:</i>	04.17.2020 07:31	04.17.2020 07:31	04.17.2020 07:31	04.17.2020 07:31	04.17.2020 07:31	04.17.2020 07:31
	<i>Analyzed:</i>	04.17.2020 12:48	04.17.2020 12:54	04.17.2020 12:59	04.17.2020 13:05	04.17.2020 13:11	04.17.2020 13:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Chloride	<10.0 10.0	<10.0 10.0	<10.0 10.0	24.2 9.98	104 9.98	12.1 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	04.16.2020 17:00	04.16.2020 17:00	04.16.2020 17:00	04.16.2020 17:00	04.16.2020 17:00	04.16.2020 17:00
	<i>Analyzed:</i>	04.16.2020 20:37	04.16.2020 20:58	04.16.2020 21:18	04.16.2020 21:38	04.16.2020 21:59	04.16.2020 22:39
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
	Gasoline Range Hydrocarbons (GRO)	<50.1 50.1	<49.8 49.8	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.0 50.0
Diesel Range Organics (DRO)	<50.1 50.1	<49.8 49.8	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.0 50.0	
Motor Oil Range Hydrocarbons (MRO)	<50.1 50.1	<49.8 49.8	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.0 50.0	
Total GRO-DRO	<50.1 50.1	<49.8 49.8	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.0 50.0	
Total TPH	<50.1 50.1	<49.8 49.8	<50.1 50.1	<49.8 49.8	<50.0 50.0	<50.0 50.0	

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 659086

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Thu 04.16.2020 14:56
Report Date: 04.20.2020 19:24
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	659086-013		659086-014		659086-015		659086-016		659086-017		659086-018	
	<i>Field Id:</i>	FS89		FS90		FS91		FS92		FS93		FS88	
	<i>Depth:</i>	8-8.5 ft		7-8.5 ft		0.5-8.5 ft		7-8 ft		6-2 ft		8-8.5 ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	04.15.2020 15:27		04.15.2020 15:30		04.15.2020 15:34		04.16.2020 11:47		04.16.2020 10:35		04.15.2020 15:24	
BTEX by EPA 8021B	<i>Extracted:</i>	04.17.2020 15:31		04.17.2020 15:31		04.17.2020 15:31		04.17.2020 15:31		04.17.2020 15:31		04.17.2020 15:31	
	<i>Analyzed:</i>	04.18.2020 10:59		04.18.2020 11:19		04.18.2020 11:40		04.18.2020 12:00		04.18.2020 12:21		04.18.2020 12:41	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	
Toluene	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	
Ethylbenzene	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	
m,p-Xylenes	<0.00396	0.00396	<0.00402	0.00402	<0.00398	0.00398	<0.00397	0.00397	<0.00400	0.00400	<0.00399	0.00399	
o-Xylene	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	
Xylenes, Total	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	
Total BTEX	<0.00198	0.00198	<0.00201	0.00201	<0.00199	0.00199	<0.00198	0.00198	<0.00200	0.00200	<0.00200	0.00200	
Chloride by EPA 300	<i>Extracted:</i>	04.17.2020 07:31		04.17.2020 07:31		04.17.2020 07:31		04.17.2020 07:31		04.17.2020 07:31		04.17.2020 07:31	
	<i>Analyzed:</i>	04.17.2020 13:35		04.17.2020 13:53		04.17.2020 13:58		04.17.2020 14:04		04.17.2020 14:10		04.17.2020 14:16	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	<9.98	9.98	<10.0	10.0	123	10.0	17.7	10.0	127	9.92	42.3	9.92	
TPH by SW8015 Mod	<i>Extracted:</i>	04.16.2020 17:00		04.16.2020 17:00		04.16.2020 17:00		04.16.2020 17:00		04.16.2020 17:00		04.16.2020 17:00	
	<i>Analyzed:</i>	04.16.2020 23:00		04.16.2020 23:20		04.16.2020 23:41		04.17.2020 00:01		04.17.2020 00:21		04.17.2020 00:42	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	<50.3	50.3	<50.1	50.1	<49.9	49.9	<50.1	50.1	<50.1	50.1	<49.9	49.9	
Diesel Range Organics (DRO)	<50.3	50.3	<50.1	50.1	<49.9	49.9	<50.1	50.1	<50.1	50.1	<49.9	49.9	
Motor Oil Range Hydrocarbons (MRO)	<50.3	50.3	<50.1	50.1	<49.9	49.9	<50.1	50.1	<50.1	50.1	<49.9	49.9	
Total GRO-DRO	<50.3	50.3	<50.1	50.1	<49.9	49.9	<50.1	50.1	<50.1	50.1	<49.9	49.9	
Total TPH	<50.3	50.3	<50.1	50.1	<49.9	49.9	<50.1	50.1	<50.1	50.1	<49.9	49.9	

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 659086

LT Environmental, Inc., Arvada, CO

Project Name: LVP Gathering System

Project Id: 102720001
Contact: Chris McKisson
Project Location: Eddy County

Date Received in Lab: Thu 04.16.2020 14:56
Report Date: 04.20.2020 19:24
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	659086-019		659086-020		659086-021		659086-022		659086-023		659086-024	
	<i>Field Id:</i>	SW33		SW34		SW35		SW36		SW37		FS 94	
	<i>Depth:</i>	0.5-8 ft		0.5-8 ft		0.5-7 ft		0.5-8 ft		0.5-6 ft		6-2 ft	
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	<i>Sampled:</i>	04.16.2020 10:10		04.16.2020 13:45		04.16.2020 11:52		04.16.2020 10:52		04.16.2020 13:10		04.16.2020 12:47	
BTEX by EPA 8021B	<i>Extracted:</i>	04.17.2020 15:31		04.17.2020 15:31		04.17.2020 17:42		04.17.2020 17:42		04.17.2020 17:42		04.17.2020 17:42	
	<i>Analyzed:</i>	04.18.2020 13:01		04.18.2020 13:22		04.18.2020 16:26		04.18.2020 17:07		04.18.2020 17:27		04.18.2020 17:48	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	
Toluene	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	
Ethylbenzene	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	
m,p-Xylenes	<0.00399	0.00399	<0.00404	0.00404	<0.00402	0.00402	<0.00404	0.00404	<0.00400	0.00400	<0.00403	0.00403	
o-Xylene	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	
Xylenes, Total	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	
Total BTEX	<0.00200	0.00200	<0.00202	0.00202	<0.00201	0.00201	<0.00202	0.00202	<0.00200	0.00200	<0.00202	0.00202	
Chloride by EPA 300	<i>Extracted:</i>	04.17.2020 07:31		04.17.2020 07:31		04.17.2020 10:35		04.17.2020 10:35		04.17.2020 10:35		04.17.2020 10:35	
	<i>Analyzed:</i>	04.17.2020 14:22		04.17.2020 14:28		04.17.2020 15:04		04.17.2020 15:22		04.17.2020 15:27		04.17.2020 15:33	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride	18.1	9.98	11.8	9.96	71.1	9.94	406	10.0	25.6	9.98	61.9	9.98	
TPH by SW8015 Mod	<i>Extracted:</i>	04.16.2020 17:00		04.16.2020 17:00		04.16.2020 17:00		04.16.2020 17:40		04.16.2020 17:40		04.16.2020 17:40	
	<i>Analyzed:</i>	04.17.2020 01:02		04.17.2020 01:22		04.17.2020 01:42		04.17.2020 00:01		04.17.2020 01:02		04.17.2020 01:22	
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	<50.3	50.3	<50.2	50.2	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.0	50.0	
Diesel Range Organics (DRO)	<50.3	50.3	<50.2	50.2	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.0	50.0	
Motor Oil Range Hydrocarbons (MRO)	<50.3	50.3	<50.2	50.2	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.0	50.0	
Total GRO-DRO	<50.3	50.3	<50.2	50.2	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.0	50.0	
Total TPH	<50.3	50.3	<50.2	50.2	<50.0	50.0	<50.1	50.1	<50.2	50.2	<50.0	50.0	

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Jessica Kramer
Project Manager



Certificate of Analytical Results 659086

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW13	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-001	Date Collected: 04.15.2020 14:45	Sample Depth: 0.5 - 7 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.2	9.96	mg/kg	04.17.2020 11:06		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 16:30
Seq Number: 3123293	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.16.2020 21:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.16.2020 21:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.16.2020 21:38	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.16.2020 21:38	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.16.2020 21:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	04.16.2020 21:38	
o-Terphenyl	84-15-1	116	%	70-135	04.16.2020 21:38	



Certificate of Analytical Results 659086

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW13	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-001	Date Collected: 04.15.2020 14:45	Sample Depth: 0.5 - 7 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 06:13	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 06:13	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 06:13	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.18.2020 06:13	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 06:13	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 06:13	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 06:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.18.2020 06:13		
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.18.2020 06:13		



Certificate of Analytical Results 659086

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW23	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-002	Date Collected: 04.15.2020 14:52	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.92	9.92	mg/kg	04.17.2020 12:10	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.16.2020 17:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.16.2020 17:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.16.2020 17:12	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.16.2020 17:12	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.16.2020 17:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	04.16.2020 17:12	
o-Terphenyl	84-15-1	112	%	70-135	04.16.2020 17:12	



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW23	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-002	Date Collected: 04.15.2020 14:52	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.18.2020 06:34	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.18.2020 06:34	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.18.2020 06:34	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.18.2020 06:34	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.18.2020 06:34	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.18.2020 06:34	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.18.2020 06:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.18.2020 06:34		
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.18.2020 06:34		



Certificate of Analytical Results 659086

LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW24	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-003	Date Collected: 04.15.2020 14:55	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	33.0	10.0	mg/kg	04.17.2020 12:15		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.16.2020 19:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.16.2020 19:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.16.2020 19:16	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.16.2020 19:16	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.16.2020 19:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	04.16.2020 19:16	
o-Terphenyl	84-15-1	104	%	70-135	04.16.2020 19:16	



Certificate of Analytical Results 659086

LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW24	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-003	Date Collected: 04.15.2020 14:55	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.18.2020 06:54	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.18.2020 06:54	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.18.2020 06:54	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.18.2020 06:54	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.18.2020 06:54	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.18.2020 06:54	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.18.2020 06:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.18.2020 06:54	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.18.2020 06:54	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW25	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-004	Date Collected: 04.16.2020 08:50	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	48.5	9.96	mg/kg	04.17.2020 12:21		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.16.2020 19:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.16.2020 19:36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.16.2020 19:36	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.16.2020 19:36	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.16.2020 19:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	04.16.2020 19:36	
o-Terphenyl	84-15-1	102	%	70-135	04.16.2020 19:36	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW25	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-004	Date Collected: 04.16.2020 08:50	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 07:14	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 07:14	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 07:14	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.18.2020 07:14	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 07:14	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 07:14	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 07:14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.18.2020 07:14		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.18.2020 07:14		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW26	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-005	Date Collected: 04.15.2020 15:00	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.5	9.92	mg/kg	04.17.2020 12:26		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.16.2020 19:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.16.2020 19:56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.16.2020 19:56	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.16.2020 19:56	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.16.2020 19:56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	04.16.2020 19:56	
o-Terphenyl	84-15-1	103	%	70-135	04.16.2020 19:56	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW26	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-005	Date Collected: 04.15.2020 15:00	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.18.2020 07:35	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.18.2020 07:35	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.18.2020 07:35	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.18.2020 07:35	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.18.2020 07:35	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.18.2020 07:35	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.18.2020 07:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.18.2020 07:35		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.18.2020 07:35		



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **SW27** Matrix: Soil Date Received: 04.16.2020 14:56
 Lab Sample Id: 659086-006 Date Collected: 04.15.2020 11:50 Sample Depth: 0.5 - 6 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.17.2020 07:31 Basis: Wet Weight
 Seq Number: 3123444

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26.0	9.98	mg/kg	04.17.2020 12:43		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.16.2020 17:00 Basis: Wet Weight
 Seq Number: 3123295

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.16.2020 20:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.16.2020 20:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.16.2020 20:17	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.16.2020 20:17	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.16.2020 20:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	04.16.2020 20:17	
o-Terphenyl	84-15-1	98	%	70-135	04.16.2020 20:17	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW27	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-006	Date Collected: 04.15.2020 11:50	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 07:55	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 07:55	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 07:55	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.18.2020 07:55	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 07:55	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 07:55	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 07:55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.18.2020 07:55		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.18.2020 07:55		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW28	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-007	Date Collected: 04.15.2020 15:15	Sample Depth: 0.5 - 7 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	04.17.2020 12:48	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.16.2020 20:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.16.2020 20:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.16.2020 20:37	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.16.2020 20:37	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.16.2020 20:37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	04.16.2020 20:37	
o-Terphenyl	84-15-1	103	%	70-135	04.16.2020 20:37	



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW28	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-007	Date Collected: 04.15.2020 15:15	Sample Depth: 0.5 - 7 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 08:16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 08:16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 08:16	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.18.2020 08:16	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 08:16	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 08:16	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 08:16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	100	%	70-130	04.18.2020 08:16		
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.18.2020 08:16		



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **SW29** Matrix: Soil Date Received: 04.16.2020 14:56
 Lab Sample Id: 659086-008 Date Collected: 04.15.2020 15:12 Sample Depth: 0.5 - 8 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.17.2020 07:31 Basis: Wet Weight
 Seq Number: 3123444

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	04.17.2020 12:54	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.16.2020 17:00 Basis: Wet Weight
 Seq Number: 3123295

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.16.2020 20:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.16.2020 20:58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.16.2020 20:58	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.16.2020 20:58	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.16.2020 20:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	04.16.2020 20:58	
o-Terphenyl	84-15-1	112	%	70-135	04.16.2020 20:58	



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW29	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-008	Date Collected: 04.15.2020 15:12	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.18.2020 08:36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.18.2020 08:36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.18.2020 08:36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.18.2020 08:36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.18.2020 08:36	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.18.2020 08:36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.18.2020 08:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.18.2020 08:36	
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.18.2020 08:36	



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LVP Gathering System

Sample Id: SW30	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-009	Date Collected: 04.15.2020 15:10	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	04.17.2020 12:59	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.16.2020 21:18	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.16.2020 21:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.16.2020 21:18	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.16.2020 21:18	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.16.2020 21:18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	04.16.2020 21:18	
o-Terphenyl	84-15-1	109	%	70-135	04.16.2020 21:18	



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LVP Gathering System

Sample Id: SW30	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-009	Date Collected: 04.15.2020 15:10	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 08:56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 08:56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 08:56	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	04.18.2020 08:56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 08:56	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 08:56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 08:56	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	102	%	70-130	04.18.2020 08:56		
1,4-Difluorobenzene	540-36-3	95	%	70-130	04.18.2020 08:56		



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LVP Gathering System

Sample Id: SW31	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-010	Date Collected: 04.15.2020 15:05	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24.2	9.98	mg/kg	04.17.2020 13:05		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	04.16.2020 21:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	04.16.2020 21:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	04.16.2020 21:38	U	1
Total GRO-DRO	PHC628	<49.8	49.8	mg/kg	04.16.2020 21:38	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	04.16.2020 21:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	04.16.2020 21:38	
o-Terphenyl	84-15-1	107	%	70-135	04.16.2020 21:38	



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW31	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-010	Date Collected: 04.15.2020 15:05	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 09:17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 09:17	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 09:17	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.18.2020 09:17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 09:17	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 09:17	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 09:17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.18.2020 09:17		
1,4-Difluorobenzene	540-36-3	104	%	70-130	04.18.2020 09:17		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW32	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-011	Date Collected: 04.15.2020 15:02	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	104	9.98	mg/kg	04.17.2020 13:11		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.16.2020 21:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.16.2020 21:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.16.2020 21:59	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.16.2020 21:59	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.16.2020 21:59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	04.16.2020 21:59	
o-Terphenyl	84-15-1	111	%	70-135	04.16.2020 21:59	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW32	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-011	Date Collected: 04.15.2020 15:02	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 10:18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 10:18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 10:18	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.18.2020 10:18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 10:18	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 10:18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 10:18	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.18.2020 10:18		
1,4-Difluorobenzene	540-36-3	108	%	70-130	04.18.2020 10:18		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS87	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-012	Date Collected: 04.15.2020 15:18	Sample Depth: 7 - 8.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.1	10.0	mg/kg	04.17.2020 13:29		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.16.2020 22:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.16.2020 22:39	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.16.2020 22:39	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.16.2020 22:39	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.16.2020 22:39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	04.16.2020 22:39	
o-Terphenyl	84-15-1	98	%	70-135	04.16.2020 22:39	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS87	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-012	Date Collected: 04.15.2020 15:18	Sample Depth: 7 - 8.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.18.2020 10:38	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.18.2020 10:38	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.18.2020 10:38	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	04.18.2020 10:38	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.18.2020 10:38	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.18.2020 10:38	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.18.2020 10:38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.18.2020 10:38	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.18.2020 10:38	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS89	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-013	Date Collected: 04.15.2020 15:27	Sample Depth: 8 - 8.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	04.17.2020 13:35	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.16.2020 23:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.16.2020 23:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.16.2020 23:00	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.16.2020 23:00	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.16.2020 23:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	04.16.2020 23:00	
o-Terphenyl	84-15-1	104	%	70-135	04.16.2020 23:00	



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: FS89	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-013	Date Collected: 04.15.2020 15:27	Sample Depth: 8 - 8.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.18.2020 10:59	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.18.2020 10:59	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.18.2020 10:59	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	04.18.2020 10:59	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.18.2020 10:59	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.18.2020 10:59	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.18.2020 10:59	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.18.2020 10:59		
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.18.2020 10:59		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS90	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-014	Date Collected: 04.15.2020 15:30	Sample Depth: 7 - 8.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	04.17.2020 13:53	U	1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.16.2020 23:20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.16.2020 23:20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.16.2020 23:20	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.16.2020 23:20	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.16.2020 23:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	04.16.2020 23:20	
o-Terphenyl	84-15-1	105	%	70-135	04.16.2020 23:20	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS90	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-014	Date Collected: 04.15.2020 15:30	Sample Depth: 7 - 8.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.18.2020 11:19	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.18.2020 11:19	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.18.2020 11:19	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.18.2020 11:19	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.18.2020 11:19	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.18.2020 11:19	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.18.2020 11:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.18.2020 11:19		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.18.2020 11:19		



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS91	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-015	Date Collected: 04.15.2020 15:34	Sample Depth: 0.5 - 8.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	123	10.0	mg/kg	04.17.2020 13:58		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.16.2020 23:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.16.2020 23:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.16.2020 23:41	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.16.2020 23:41	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.16.2020 23:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	04.16.2020 23:41	
o-Terphenyl	84-15-1	106	%	70-135	04.16.2020 23:41	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS91	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-015	Date Collected: 04.15.2020 15:34	Sample Depth: 0.5 - 8.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	04.18.2020 11:40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	04.18.2020 11:40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	04.18.2020 11:40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	04.18.2020 11:40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	04.18.2020 11:40	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	04.18.2020 11:40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	04.18.2020 11:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	04.18.2020 11:40		
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.18.2020 11:40		



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **FS92** Matrix: Soil Date Received: 04.16.2020 14:56
 Lab Sample Id: 659086-016 Date Collected: 04.16.2020 11:47 Sample Depth: 7 - 8 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.17.2020 07:31 Basis: Wet Weight
 Seq Number: 3123444

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	17.7	10.0	mg/kg	04.17.2020 14:04		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.16.2020 17:00 Basis: Wet Weight
 Seq Number: 3123295

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.17.2020 00:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.17.2020 00:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.17.2020 00:01	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.17.2020 00:01	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.17.2020 00:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	04.17.2020 00:01	
o-Terphenyl	84-15-1	104	%	70-135	04.17.2020 00:01	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: **FS92**
 Lab Sample Id: 659086-016

Matrix: Soil
 Date Collected: 04.16.2020 11:47

Date Received: 04.16.2020 14:56
 Sample Depth: 7 - 8 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 04.17.2020 15:31

Basis: Wet Weight

Seq Number: 3123436

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	04.18.2020 12:00	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	04.18.2020 12:00	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	04.18.2020 12:00	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	04.18.2020 12:00	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	04.18.2020 12:00	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	04.18.2020 12:00	U	1
Total BTEX		<0.00198	0.00198	mg/kg	04.18.2020 12:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.18.2020 12:00	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.18.2020 12:00	



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LVP Gathering System

Sample Id: FS93	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-017	Date Collected: 04.16.2020 10:35	Sample Depth: 6 - 2 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	127	9.92	mg/kg	04.17.2020 14:10		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.17.2020 00:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.17.2020 00:21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.17.2020 00:21	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.17.2020 00:21	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.17.2020 00:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	04.17.2020 00:21	
o-Terphenyl	84-15-1	98	%	70-135	04.17.2020 00:21	



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LVP Gathering System

Sample Id: FS93	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-017	Date Collected: 04.16.2020 10:35	Sample Depth: 6 - 2 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 12:21	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 12:21	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 12:21	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.18.2020 12:21	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 12:21	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 12:21	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 12:21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	04.18.2020 12:21	
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.18.2020 12:21	



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LVP Gathering System

Sample Id: FS88	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-018	Date Collected: 04.15.2020 15:24	Sample Depth: 8 - 8.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	42.3	9.92	mg/kg	04.17.2020 14:16		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	04.17.2020 00:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	04.17.2020 00:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	04.17.2020 00:42	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	04.17.2020 00:42	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	04.17.2020 00:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	04.17.2020 00:42	
o-Terphenyl	84-15-1	100	%	70-135	04.17.2020 00:42	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS88	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-018	Date Collected: 04.15.2020 15:24	Sample Depth: 8 - 8.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 12:41	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 12:41	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 12:41	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.18.2020 12:41	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 12:41	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 12:41	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 12:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.18.2020 12:41		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.18.2020 12:41		



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW33	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-019	Date Collected: 04.16.2020 10:10	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 07:31	Basis: Wet Weight
Seq Number: 3123444		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18.1	9.98	mg/kg	04.17.2020 14:22		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	04.17.2020 01:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	04.17.2020 01:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	04.17.2020 01:02	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	04.17.2020 01:02	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	04.17.2020 01:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	04.17.2020 01:02	
o-Terphenyl	84-15-1	97	%	70-135	04.17.2020 01:02	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW33	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-019	Date Collected: 04.16.2020 10:10	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 13:01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 13:01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 13:01	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	04.18.2020 13:01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 13:01	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 13:01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 13:01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.18.2020 13:01		
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.18.2020 13:01		



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **SW34** Matrix: Soil Date Received: 04.16.2020 14:56
 Lab Sample Id: 659086-020 Date Collected: 04.16.2020 13:45 Sample Depth: 0.5 - 8 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.17.2020 07:31 Basis: Wet Weight
 Seq Number: 3123444

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.8	9.96	mg/kg	04.17.2020 14:28		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.16.2020 17:00 Basis: Wet Weight
 Seq Number: 3123295

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.17.2020 01:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.17.2020 01:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.17.2020 01:22	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.17.2020 01:22	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.17.2020 01:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	04.17.2020 01:22	
o-Terphenyl	84-15-1	97	%	70-135	04.17.2020 01:22	



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LVP Gathering System

Sample Id: SW34	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-020	Date Collected: 04.16.2020 13:45	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 15:31	Basis: Wet Weight
Seq Number: 3123436		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.18.2020 13:22	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.18.2020 13:22	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.18.2020 13:22	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.18.2020 13:22	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.18.2020 13:22	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.18.2020 13:22	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.18.2020 13:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.18.2020 13:22		
4-Bromofluorobenzene	460-00-4	96	%	70-130	04.18.2020 13:22		



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LVP Gathering System

Sample Id: SW35	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-021	Date Collected: 04.16.2020 11:52	Sample Depth: 0.5 - 7 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 10:35	Basis: Wet Weight
Seq Number: 3123445		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	71.1	9.94	mg/kg	04.17.2020 15:04		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:00
Seq Number: 3123295	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.17.2020 01:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.17.2020 01:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.17.2020 01:42	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.17.2020 01:42	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.17.2020 01:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	04.17.2020 01:42	
o-Terphenyl	84-15-1	98	%	70-135	04.17.2020 01:42	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW35	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-021	Date Collected: 04.16.2020 11:52	Sample Depth: 0.5 - 7 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 17:42	Basis: Wet Weight
Seq Number: 3123439		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	04.18.2020 16:26	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	04.18.2020 16:26	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	04.18.2020 16:26	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	04.18.2020 16:26	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	04.18.2020 16:26	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	04.18.2020 16:26	U	1
Total BTEX		<0.00201	0.00201	mg/kg	04.18.2020 16:26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	04.18.2020 16:26		
1,4-Difluorobenzene	540-36-3	107	%	70-130	04.18.2020 16:26		



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LVP Gathering System

Sample Id: SW36	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-022	Date Collected: 04.16.2020 10:52	Sample Depth: 0.5 - 8 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 10:35	Basis: Wet Weight
Seq Number: 3123445		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	406	10.0	mg/kg	04.17.2020 15:22		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:40
Seq Number: 3123299	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	04.17.2020 00:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	04.17.2020 00:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	04.17.2020 00:01	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	04.17.2020 00:01	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	04.17.2020 00:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	04.17.2020 00:01	
o-Terphenyl	84-15-1	115	%	70-135	04.17.2020 00:01	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: SW36	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-022	Date Collected: 04.16.2020 10:52	Sample Depth: 0.5 - 8 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 17:42	Basis: Wet Weight
Seq Number: 3123439		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.18.2020 17:07	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.18.2020 17:07	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.18.2020 17:07	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	04.18.2020 17:07	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.18.2020 17:07	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.18.2020 17:07	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.18.2020 17:07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	04.18.2020 17:07		
1,4-Difluorobenzene	540-36-3	106	%	70-130	04.18.2020 17:07		



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LVP Gathering System

Sample Id: SW37	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-023	Date Collected: 04.16.2020 13:10	Sample Depth: 0.5 - 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 10:35	Basis: Wet Weight
Seq Number: 3123445		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	25.6	9.98	mg/kg	04.17.2020 15:27		1

Analytical Method: TPH by SW8015 Mod	Prep Method: SW8015P
Tech: DTH	% Moisture:
Analyst: DTH	Date Prep: 04.16.2020 17:40
Seq Number: 3123299	Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	04.17.2020 01:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	04.17.2020 01:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	04.17.2020 01:02	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	04.17.2020 01:02	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	04.17.2020 01:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	04.17.2020 01:02	
o-Terphenyl	84-15-1	109	%	70-135	04.17.2020 01:02	



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: SW37	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-023	Date Collected: 04.16.2020 13:10	Sample Depth: 0.5 - 6 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 17:42	Basis: Wet Weight
Seq Number: 3123439		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	04.18.2020 17:27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	04.18.2020 17:27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	04.18.2020 17:27	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	04.18.2020 17:27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	04.18.2020 17:27	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	04.18.2020 17:27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	04.18.2020 17:27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	98	%	70-130	04.18.2020 17:27		
1,4-Difluorobenzene	540-36-3	108	%	70-130	04.18.2020 17:27		



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LT Environmental, Inc., Arvada, CO LVP Gathering System

Sample Id: **FS 94** Matrix: Soil Date Received: 04.16.2020 14:56
 Lab Sample Id: 659086-024 Date Collected: 04.16.2020 12:47 Sample Depth: 6 - 2 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 04.17.2020 10:35 Basis: Wet Weight
 Seq Number: 3123445

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	61.9	9.98	mg/kg	04.17.2020 15:33		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 04.16.2020 17:40 Basis: Wet Weight
 Seq Number: 3123299

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	04.17.2020 01:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	04.17.2020 01:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	04.17.2020 01:22	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	04.17.2020 01:22	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	04.17.2020 01:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	04.17.2020 01:22	
o-Terphenyl	84-15-1	107	%	70-135	04.17.2020 01:22	



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LT Environmental, Inc., Arvada, CO

LVP Gathering System

Sample Id: FS 94	Matrix: Soil	Date Received: 04.16.2020 14:56
Lab Sample Id: 659086-024	Date Collected: 04.16.2020 12:47	Sample Depth: 6 - 2 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 04.17.2020 17:42	Basis: Wet Weight
Seq Number: 3123439		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	04.18.2020 17:48	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	04.18.2020 17:48	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	04.18.2020 17:48	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	04.18.2020 17:48	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	04.18.2020 17:48	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	04.18.2020 17:48	U	1
Total BTEX		<0.00202	0.00202	mg/kg	04.18.2020 17:48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	108	%	70-130	04.18.2020 17:48		
4-Bromofluorobenzene	460-00-4	99	%	70-130	04.18.2020 17:48		



LT Environmental, Inc.
LVP Gathering System

Analytical Method: Chloride by EPA 300

Seq Number: 3123444
MB Sample Id: 7701479-1-BLK

Matrix: Solid
LCS Sample Id: 7701479-1-BKS

Prep Method: E300P
Date Prep: 04.17.2020
LCSD Sample Id: 7701479-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	264	106	263	105	90-110	0	20	mg/kg	04.17.2020 10:55	

Analytical Method: Chloride by EPA 300

Seq Number: 3123445
MB Sample Id: 7701481-1-BLK

Matrix: Solid
LCS Sample Id: 7701481-1-BKS

Prep Method: E300P
Date Prep: 04.17.2020
LCSD Sample Id: 7701481-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	264	106	265	106	90-110	0	20	mg/kg	04.17.2020 14:52	

Analytical Method: Chloride by EPA 300

Seq Number: 3123444
Parent Sample Id: 659086-001

Matrix: Soil
MS Sample Id: 659086-001 S

Prep Method: E300P
Date Prep: 04.17.2020
MSD Sample Id: 659086-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	10.2	199	214	102	216	103	90-110	1	20	mg/kg	04.17.2020 11:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3123444
Parent Sample Id: 659086-011

Matrix: Soil
MS Sample Id: 659086-011 S

Prep Method: E300P
Date Prep: 04.17.2020
MSD Sample Id: 659086-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	104	200	317	107	311	104	90-110	2	20	mg/kg	04.17.2020 13:17	

Analytical Method: Chloride by EPA 300

Seq Number: 3123445
Parent Sample Id: 659086-021

Matrix: Soil
MS Sample Id: 659086-021 S

Prep Method: E300P
Date Prep: 04.17.2020
MSD Sample Id: 659086-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	71.1	199	286	108	286	108	90-110	0	20	mg/kg	04.17.2020 15:10	

Analytical Method: Chloride by EPA 300

Seq Number: 3123445
Parent Sample Id: 659150-007

Matrix: Soil
MS Sample Id: 659150-007 S

Prep Method: E300P
Date Prep: 04.17.2020
MSD Sample Id: 659150-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	43.7	200	259	108	261	109	90-110	1	20	mg/kg	04.17.2020 16:36	

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123293

MB Sample Id: 7701402-1-BLK

Matrix: Solid

LCS Sample Id: 7701402-1-BKS

Prep Method: SW8015P

Date Prep: 04.16.2020

LCSD Sample Id: 7701402-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	974	97	940	94	70-135	4	35	mg/kg	04.16.2020 12:05	
Diesel Range Organics (DRO)	<50.0	1000	1110	111	1060	106	70-135	5	35	mg/kg	04.16.2020 12:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	91		108		107		70-135	%	04.16.2020 12:05
o-Terphenyl	96		108		120		70-135	%	04.16.2020 12:05

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123295

MB Sample Id: 7701460-1-BLK

Matrix: Solid

LCS Sample Id: 7701460-1-BKS

Prep Method: SW8015P

Date Prep: 04.16.2020

LCSD Sample Id: 7701460-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	885	89	915	92	70-135	3	35	mg/kg	04.16.2020 12:05	
Diesel Range Organics (DRO)	<50.0	1000	984	98	993	99	70-135	1	35	mg/kg	04.16.2020 12:05	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	82		100		116		70-135	%	04.16.2020 12:05
o-Terphenyl	87		97		96		70-135	%	04.16.2020 12:05

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123299

MB Sample Id: 7701472-1-BLK

Matrix: Solid

LCS Sample Id: 7701472-1-BKS

Prep Method: SW8015P

Date Prep: 04.16.2020

LCSD Sample Id: 7701472-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	991	99	950	95	70-135	4	35	mg/kg	04.16.2020 23:20	
Diesel Range Organics (DRO)	<50.0	1000	1160	116	1110	111	70-135	4	35	mg/kg	04.16.2020 23:20	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	93		117		108		70-135	%	04.16.2020 23:20
o-Terphenyl	101		114		108		70-135	%	04.16.2020 23:20

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123293

MB Sample Id: 7701402-1-BLK

Matrix: Solid

MB Sample Id: 7701402-1-BLK

Prep Method: SW8015P

Date Prep: 04.16.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.16.2020 11:45	

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: TPH by SW8015 Mod
Seq Number: 3123295

Matrix: Solid
MB Sample Id: 7701460-1-BLK

Prep Method: SW8015P
Date Prep: 04.16.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.16.2020 11:45	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3123299

Matrix: Solid
MB Sample Id: 7701472-1-BLK

Prep Method: SW8015P
Date Prep: 04.16.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	04.16.2020 23:00	

Analytical Method: TPH by SW8015 Mod
Seq Number: 3123293
Parent Sample Id: 658990-008

Matrix: Soil
MS Sample Id: 658990-008 S

Prep Method: SW8015P
Date Prep: 04.16.2020
MSD Sample Id: 658990-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	973	97	1040	104	70-135	7	35	mg/kg	04.16.2020 13:28	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	1130	113	70-135	0	35	mg/kg	04.16.2020 13:28	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		119		70-135	%	04.16.2020 13:28
o-Terphenyl	112		118		70-135	%	04.16.2020 13:28

Analytical Method: TPH by SW8015 Mod
Seq Number: 3123295
Parent Sample Id: 659086-002

Matrix: Soil
MS Sample Id: 659086-002 S

Prep Method: SW8015P
Date Prep: 04.16.2020
MSD Sample Id: 659086-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	1120	112	1060	105	70-135	6	35	mg/kg	04.16.2020 17:33	
Diesel Range Organics (DRO)	<50.1	1000	1140	114	1060	105	70-135	7	35	mg/kg	04.16.2020 17:33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	123		120		70-135	%	04.16.2020 17:33
o-Terphenyl	123		117		70-135	%	04.16.2020 17:33

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: TPH by SW8015 Mod

Seq Number: 3123299

Parent Sample Id: 659086-022

Matrix: Soil

MS Sample Id: 659086-022 S

Prep Method: SW8015P

Date Prep: 04.16.2020

MSD Sample Id: 659086-022 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	1020	102	1010	101	70-135	1	35	mg/kg	04.17.2020 00:21	
Diesel Range Organics (DRO)	<50.0	999	1210	121	1180	118	70-135	3	35	mg/kg	04.17.2020 00:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		115		70-135	%	04.17.2020 00:21
o-Terphenyl	119		116		70-135	%	04.17.2020 00:21

Analytical Method: BTEX by EPA 8021B

Seq Number: 3123436

MB Sample Id: 7701517-1-BLK

Matrix: Solid

LCS Sample Id: 7701517-1-BKS

Prep Method: SW5030B

Date Prep: 04.17.2020

LCSD Sample Id: 7701517-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.108	108	0.106	106	70-130	2	35	mg/kg	04.18.2020 04:31	
Toluene	<0.00200	0.100	0.101	101	0.0994	99	70-130	2	35	mg/kg	04.18.2020 04:31	
Ethylbenzene	<0.00200	0.100	0.0938	94	0.0923	92	71-129	2	35	mg/kg	04.18.2020 04:31	
m,p-Xylenes	<0.00400	0.200	0.192	96	0.189	95	70-135	2	35	mg/kg	04.18.2020 04:31	
o-Xylene	<0.00200	0.100	0.0987	99	0.0973	97	71-133	1	35	mg/kg	04.18.2020 04:31	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		105		104		70-130	%	04.18.2020 04:31
4-Bromofluorobenzene	96		91		92		70-130	%	04.18.2020 04:31

Analytical Method: BTEX by EPA 8021B

Seq Number: 3123439

MB Sample Id: 7701557-1-BLK

Matrix: Solid

LCS Sample Id: 7701557-1-BKS

Prep Method: SW5030B

Date Prep: 04.17.2020

LCSD Sample Id: 7701557-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0996	100	0.108	108	70-130	8	35	mg/kg	04.18.2020 14:44	
Toluene	<0.00200	0.100	0.0943	94	0.101	101	70-130	7	35	mg/kg	04.18.2020 14:44	
Ethylbenzene	<0.00200	0.100	0.0875	88	0.0932	93	71-129	6	35	mg/kg	04.18.2020 14:44	
m,p-Xylenes	<0.00400	0.200	0.178	89	0.190	95	70-135	7	35	mg/kg	04.18.2020 14:44	
o-Xylene	<0.00200	0.100	0.0917	92	0.0980	98	71-133	7	35	mg/kg	04.18.2020 14:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		104		105		70-130	%	04.18.2020 14:44
4-Bromofluorobenzene	95		94		92		70-130	%	04.18.2020 14:44

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

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

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

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



LT Environmental, Inc.
LVP Gathering System

Analytical Method: BTEX by EPA 8021B

Seq Number: 3123436
Parent Sample Id: 659086-001

Matrix: Soil
MS Sample Id: 659086-001 S

Prep Method: SW5030B
Date Prep: 04.17.2020
MSD Sample Id: 659086-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.100	99	0.0913	90	70-130	9	35	mg/kg	04.18.2020 05:12	
Toluene	<0.00202	0.101	0.0915	91	0.0825	82	70-130	10	35	mg/kg	04.18.2020 05:12	
Ethylbenzene	<0.00202	0.101	0.0858	85	0.0755	75	71-129	13	35	mg/kg	04.18.2020 05:12	
m,p-Xylenes	<0.00403	0.202	0.175	87	0.152	76	70-135	14	35	mg/kg	04.18.2020 05:12	
o-Xylene	<0.00202	0.101	0.112	111	0.0881	87	71-133	24	35	mg/kg	04.18.2020 05:12	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		70-130	%	04.18.2020 05:12
4-Bromofluorobenzene	91		94		70-130	%	04.18.2020 05:12

Analytical Method: BTEX by EPA 8021B

Seq Number: 3123439
Parent Sample Id: 659086-021

Matrix: Soil
MS Sample Id: 659086-021 S

Prep Method: SW5030B
Date Prep: 04.17.2020
MSD Sample Id: 659086-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.103	103	0.0789	78	70-130	26	35	mg/kg	04.19.2020 05:01	
Toluene	<0.00200	0.100	0.0972	97	0.0972	96	70-130	0	35	mg/kg	04.19.2020 05:01	
Ethylbenzene	<0.00200	0.100	0.0898	90	0.0891	88	71-129	1	35	mg/kg	04.19.2020 05:01	
m,p-Xylenes	<0.00401	0.200	0.183	92	0.183	91	70-135	0	35	mg/kg	04.19.2020 05:01	
o-Xylene	<0.00200	0.100	0.0938	94	0.0723	72	71-133	26	35	mg/kg	04.19.2020 05:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		106		70-130	%	04.19.2020 05:01
4-Bromofluorobenzene	92		95		70-130	%	04.19.2020 05:01

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



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Chain of Custody

Work Order No: 1059084

Project Manager: Chris McElissom
 Company Name: IT Environmental
 Address: 810 Meagan Ave, Unit B
 City, State, ZIP: Ripke, CO 81650
 Phone: 970 285 9985
 Email: emcissom@itenv.com & abayes@itenv.com

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

Project Name: LVP Gathering System
 Project Number: 102720001
 Project Location: Eddy County
 Sampler's Name: Anna Bayes
 Quote #:
 Turn Around: Routine Rush
 Wet Ice: Yes No
 Thermometer ID: T-200-007
 Correction Factor: -0.2
 Total Containers: 40 24 16

Temp: 44
 Received Intact: Yes No
 Cooler Cus Body Seals: Yes No
 Sample Cus Body Seals: Yes NO
 TAT starts the day received by the lab, received by 4:00pm

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Preservative Codes	Sample Comments
SW13		S	4/15/20	1445	0.5-7'	1	TH (EPA 8015)	MeOH: Me	
SW23				1452	0.5-8'	1	BTEX (EPA 8021)	None: NO	
SW24				1455	0.5-8'	1	Chloride (EPA 300.0)	HNO3: HN	
SW25			4/16/20	0850	0.5-8'	1		H2SO4: H2	
SW26			4/16/20	1500	0.5-8'	1		HCL: HL	
SW27				1150	0.5-6.5'	1		NaOH: Na	
SW28				1516	0.5-7'	1		Zn Acetate+ NaOH: Zn	
SW29				1512	0.5-8'	1			
SW30				1510	0.5-8'	1			
SW31				1505	0.5-8'	1			

Total 20 1/6010 200.8 / 6020: 8RCRA 13PPM Texas 11 AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb 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 Service: Xenco is 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) Anna Bayes
 Received by: (Signature) [Signature]
 Date/Time: 4/16/20 1454
 Relinquished by: (Signature)
 Received by: (Signature)
 Date/Time



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
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 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

Chain of Custody

Work Order No: 659086

Project Manager:	Chris McKisson	Bill to: (if different)	→
Company Name:	LT Environmental	Company Name:	→
Address:	820 Megan Ave, Unit B	Address:	
City, State ZIP:	Rifle, CO 81650	City, State ZIP:	
Phone:	970 285 9985	Email:	cmckisson@ltenv.com + labyers@ltenv.com

Project Name:	LVP Gathering System	Turn Around	<input checked="" type="checkbox"/>
Project Number:	02720001	Routine	<input checked="" type="checkbox"/>
Project Location:	Eddy County	Rush:	
Sampler's Name:	Anna Byers	Due Date:	
PO #:		Quote #:	

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

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Preservative Codes
SW32		S	4/15/20	1502	0.5-8'	1	TPH (EPA 8015) BTEX (EPA 8021) Chloride (EPA 300.0)	MeOH: Me None: NO HNO3: HN H2SO4: H2 HCL: HL NaOH: Na Zn Acetate+ NaOH: Zn
FS87				1518	7-8.5'	1		
FS89				1524	8-8.5'	1		
FS90				1530		1		
FS91				1534		1		
FS92				1147	7-8'	1		
FS93				1035	6-2'	1		
FS88				1524	8-8.5'	1		
SW33				1010	0.5-8'	1		
SW34				1345	0.5-8'	1		

Total 2007 / 6010 2008 / 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
<i>Anna Byers</i>	<i>[Signature]</i>	4/16/20 14:50			



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Chain of Custody

Work Order No: 1659080

Page 3 of 3

Project Manager: Chris McKisson
 Company Name: LT Environmental
 Address: 820 Megan Ave, Unit B
 City, State ZIP: Rifle CO 81650
 Phone: 970 285 9985
 Email: cmckisson@ltenv.com
 City, State ZIP: _____

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

Project Name: LVP Retaining System
 Project Number: 102720001
 Project Location: Eddy County
 Sampler's Name: Anna Byers
 PO #: _____
 Turn Around: Routine
 Rush: _____
 Due Date: _____

SAMPLE RECEIPT
 Temperature (°C): _____
 Received Intact: Yes No
 Cooler Custody seals: Yes No
 Sample Custody seals: Yes No
 Total Containers: _____
 Wet Ice: Yes No
 Thermometer ID: _____

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Preservative Codes	Sample Comments
SW35		S	4/16/20	1152	0.5-7'	1	X	X	X			
SW36		S	4/16/20	1025	0.5-8'	1	X	X	X			
SW37		S		1310	0.5-6'	2	X	X	X			
FS94		S		1247	6-2'	2	X	X	X			
SW38												

Total **200.7 / 010** 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 **(Methods) 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

Relinquished by: Signature Anna Byers Received by: Signature _____ Date/Time 4/16/20 1456
 Relinquished by: Signature _____ Received by: Signature _____ Date/Time _____

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 able 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.

Revised Date 02/25/19 Rev: 2019.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 04.16.2020 02.56.00 PM

Work Order #: 659086

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T-NM-007


Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.4
#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?	Yes
#6*Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 04.16.2020

Checklist reviewed by:


Jessica Kramer

Date: 04.17.2020



Certificate of Analysis Summary 672069

LT Environmental, Inc., Arvada, CO

Project Name: WPX LVP

Project Id: 012720001
Contact: Joseph Hernandez
Project Location: NM

Date Received in Lab: Wed 09.09.2020 10:39
Report Date: 09.10.2020 11:12
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	672069-001				
	Field Id:	CH01				
	Depth:	7- ft				
	Matrix:	SOIL				
	Sampled:	09.08.2020 12:00				
BTEX by EPA 8021B	Extracted:	09.09.2020 14:16				
	Analyzed:	09.09.2020 16:37				
	Units/RL:	mg/kg RL				
	Benzene	<0.00199 0.00199				
	Toluene	<0.00199 0.00199				
	Ethylbenzene	<0.00199 0.00199				
	m,p-Xylenes	<0.00398 0.00398				
	o-Xylene	<0.00199 0.00199				
Total Xylenes	<0.00199 0.00199					
Total BTEX	<0.00199 0.00199					
Chloride by EPA 300	Extracted:	09.09.2020 14:16				
	Analyzed:	09.09.2020 14:56				
	Units/RL:	mg/kg RL				
Chloride	47.1 9.98					
TPH by SW8015 Mod	Extracted:	09.09.2020 11:30				
	Analyzed:	09.09.2020 12:51				
	Units/RL:	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<50.2 50.2				
	Diesel Range Organics (DRO)	<50.2 50.2				
	Motor Oil Range Hydrocarbons (MRO)	<50.2 50.2				
Total TPH	<50.2 50.2					

BRL - Below Reporting Limit

Jessica Kramer

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



Analytical Report 672069

for

LT Environmental, Inc.

Project Manager: Joseph Hernandez

WPX LVP

012720001

09.10.2020

Collected By: Client

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

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



09.10.2020

Project Manager: **Joseph Hernandez**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **672069**

WPX LVP

Project Address: NM

Joseph Hernandez:

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 Eurofins Xenco, LLC Report Number(s) 672069. 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 Eurofins Xenco, LLC. 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. 672069 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 Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer". The signature is written in a cursive, slightly slanted style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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



Sample Cross Reference 672069

LT Environmental, Inc., Arvada, CO

WPX LVP

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
CH01	S	09.08.2020 12:00	7 ft	672069-001



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: WPX LVP

Project ID: 012720001
Work Order Number(s): 672069

Report Date: 09.10.2020
Date Received: 09.09.2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 672069

LT Environmental, Inc., Arvada, CO WPX LVP

Sample Id: **CH01** Matrix: Soil Date Received: 09.09.2020 10:39
 Lab Sample Id: 672069-001 Date Collected: 09.08.2020 12:00 Sample Depth: 7 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 09.09.2020 14:16 Basis: Wet Weight
 Seq Number: 3136730

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	47.1	9.98	mg/kg	09.09.2020 14:56		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 09.09.2020 11:30 Basis: Wet Weight
 Seq Number: 3136684

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	09.09.2020 12:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	09.09.2020 12:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	09.09.2020 12:51	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	09.09.2020 12:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	09.09.2020 12:51	
o-Terphenyl	84-15-1	123	%	70-135	09.09.2020 12:51	



Certificate of Analytical Results 672069

LT Environmental, Inc., Arvada, CO WPX LVP

Sample Id: CH01	Matrix: Soil	Date Received: 09.09.2020 10:39
Lab Sample Id: 672069-001	Date Collected: 09.08.2020 12:00	Sample Depth: 7 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5035A
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 09.09.2020 14:16	Basis: Wet Weight
Seq Number: 3136727		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.09.2020 16:37	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.09.2020 16:37	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.09.2020 16:37	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.09.2020 16:37	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.09.2020 16:37	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.09.2020 16:37	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.09.2020 16:37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	83	%	70-130	09.09.2020 16:37	
1,4-Difluorobenzene	540-36-3	96	%	70-130	09.09.2020 16:37	



LT Environmental, Inc.
WPX LVP

Analytical Method: Chloride by EPA 300

Seq Number: 3136730
MB Sample Id: 7711008-1-BLK

Matrix: Solid
LCS Sample Id: 7711008-1-BKS

Prep Method: E300P
Date Prep: 09.09.2020
LCSD Sample Id: 7711008-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	251	100	252	101	90-110	0	20	mg/kg	09.09.2020 14:28	

Analytical Method: Chloride by EPA 300

Seq Number: 3136730
Parent Sample Id: 672074-001

Matrix: Soil
MS Sample Id: 672074-001 S

Prep Method: E300P
Date Prep: 09.09.2020
MSD Sample Id: 672074-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	72.0	200	275	102	276	101	90-110	0	20	mg/kg	09.09.2020 14:44	

Analytical Method: Chloride by EPA 300

Seq Number: 3136730
Parent Sample Id: 672167-003

Matrix: Soil
MS Sample Id: 672167-003 S

Prep Method: E300P
Date Prep: 09.09.2020
MSD Sample Id: 672167-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	158	200	362	102	362	102	90-110	0	20	mg/kg	09.09.2020 17:46	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3136684
MB Sample Id: 7711004-1-BLK

Matrix: Solid
LCS Sample Id: 7711004-1-BKS

Prep Method: SW8015P
Date Prep: 09.09.2020
LCSD Sample Id: 7711004-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	898	90	860	86	70-135	4	35	mg/kg	09.09.2020 10:12	
Diesel Range Organics (DRO)	<50.0	1000	1010	101	973	97	70-135	4	35	mg/kg	09.09.2020 10:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		122		115		70-135	%	09.09.2020 10:12
o-Terphenyl	101		117		112		70-135	%	09.09.2020 10:12

Analytical Method: TPH by SW8015 Mod

Seq Number: 3136684

Matrix: Solid
MB Sample Id: 7711004-1-BLK

Prep Method: SW8015P
Date Prep: 09.09.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	09.09.2020 09:51	

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

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

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

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



LT Environmental, Inc.
WPX LVP

Analytical Method: TPH by SW8015 Mod

Seq Number: 3136684
Parent Sample Id: 672074-001

Matrix: Soil
MS Sample Id: 672074-001 S

Prep Method: SW8015P
Date Prep: 09.09.2020
MSD Sample Id: 672074-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	899	90	897	90	70-135	0	35	mg/kg	09.09.2020 12:11	
Diesel Range Organics (DRO)	<50.1	1000	1030	103	997	100	70-135	3	35	mg/kg	09.09.2020 12:11	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	131		127		70-135	%	09.09.2020 12:11
o-Terphenyl	127		133		70-135	%	09.09.2020 12:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136727
MB Sample Id: 7711007-1-BLK

Matrix: Solid
LCS Sample Id: 7711007-1-BKS

Prep Method: SW5035A
Date Prep: 09.09.2020
LCSD Sample Id: 7711007-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0965	97	0.0997	100	70-130	3	35	mg/kg	09.09.2020 14:34	
Toluene	<0.00200	0.100	0.0953	95	0.0983	98	70-130	3	35	mg/kg	09.09.2020 14:34	
Ethylbenzene	<0.00200	0.100	0.0900	90	0.0926	93	71-129	3	35	mg/kg	09.09.2020 14:34	
m,p-Xylenes	<0.00400	0.200	0.181	91	0.186	93	70-135	3	35	mg/kg	09.09.2020 14:34	
o-Xylene	<0.00200	0.100	0.0901	90	0.0924	92	71-133	3	35	mg/kg	09.09.2020 14:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		99		70-130	%	09.09.2020 14:34
4-Bromofluorobenzene	88		89		87		70-130	%	09.09.2020 14:34

Analytical Method: BTEX by EPA 8021B

Seq Number: 3136727
Parent Sample Id: 672074-001

Matrix: Soil
MS Sample Id: 672074-001 S

Prep Method: SW5035A
Date Prep: 09.09.2020
MSD Sample Id: 672074-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.123	123	0.114	115	70-130	8	35	mg/kg	09.09.2020 15:19	
Toluene	<0.00200	0.0998	0.121	121	0.112	113	70-130	8	35	mg/kg	09.09.2020 15:19	
Ethylbenzene	<0.00200	0.0998	0.114	114	0.105	106	71-129	8	35	mg/kg	09.09.2020 15:19	
m,p-Xylenes	<0.00399	0.200	0.229	115	0.211	106	70-135	8	35	mg/kg	09.09.2020 15:19	
o-Xylene	<0.00200	0.0998	0.112	112	0.103	104	71-133	8	35	mg/kg	09.09.2020 15:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		70-130	%	09.09.2020 15:19
4-Bromofluorobenzene	89		90		70-130	%	09.09.2020 15:19

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

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 09.09.2020 10.39.00 AM

Work Order #: 672069

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : T_NM_007

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

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

Analyst:


PH Device/Lot#:

Checklist completed by: Cloe Clifton Date: 09.09.2020

Checklist reviewed by: Jessica Kramer Date: 09.09.2020

ATTACHMENT 5: LITHOLOGIC/SOIL SAMPLING LOG



 LT Environmental, Inc. 508 West Stevens Street Carlsbad, New Mexico 88220 A proud member of WSP Compliance · Engineering · Remediation		Soil Sample Name:	Date:					
		CH01	9/8/2020					
		Site Name: LVP SWD 1						
		RP or Incident Number: NRM200855443						
		LTE Job Number: 102720001						
LITHOLOGIC / SOIL SAMPLING LOG								
Lat/Long: 32.340599, -104.035703		Field Screening: Volatile aromatic hydrocarbons and chloride	Logged By: Ben Belill Hole Diameter: 1.75" Method: Shaw Core Drill Total Depth: 7'					
Chlorides tests utilized a 40% correction factor								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
D			N		0		SW	0-1' SAND, brown-light brown, dry well graded, fine-medium grain, some sub angular pebble and cobble, no stain, no odor
					1			
D	640	0.2	N			1.5	CHCE	1'- CALICHE, dry,tan-light pink, well consolidated, trace pebbles, some silt and clay laminations (7mm)
D	820	0.0	N		2	2		
D	820	0.0	N		3	3		3- 4.5' moderately consolidated, medium to coarse grain, silt and clay laminations absent
					4			Could not retrieve sample @ 4' due to poor consolidation
					5	5		4.5 - 6.5' poorly consolidated, moist
M	347	0.2	N		6			
M	258	0.2	N	CH01	7	7	SW-SM	6.5 - 7' Silty SAND, Reddish brown, moist, well graded, fine medium grained, trace silt, trace pebble, no stain, no odor
TD @ 7'								

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 10417

CONDITIONS OF APPROVAL

Operator:	WPX ENERGY PERMIAN, LLC	3500 One Williams Center	Tulsa, OK74172	OGRID:	246289	Action Number:	10417	Action Type:	C-141
OCD Reviewer									Condition
ceads									None