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

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

NM OIL CONSERVATION ARTESIA DISTRICT

Form C-141 Revised August 8, 2011

FEB 1 2 2015 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

RECEIVED

NARI	Enda	2/000	Rele	ase Notific	ation	and Co	rrective A	ction		<u> </u>	11 2. JAT - 1 To	(C. 1004.4) 411 1
AA2 1	JUTIO.	79921	_	ase monne					7 rtat.	1 D4		Einal Danast
Name of Co	20404	KI E&P, L	I C	2/1/028/	^	OPERAT	Zack Laird		<u>J Initia</u>	al Report		Final Report
Address				Č, OK 73102			Vo. 405-742-26	506				
Facility Nan			900, OK	C, OK 75102			e : Oil and Gas					
Tacinty Man	ile. RDA	17-17				actifity Typ	c. On and Gas	*** C11				
Surface Own	ner: Federa	al		Mineral C	)wner: F	ederal			API No	. 30-015-3	9845	
				LOCA	ATION	OF REI	LEASE					
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/Wes	st Line	County		
A	17	26S	30E		990 FS	SL		1650FW	L	Eddy		
	Latitude: 32.0379455094502 Longitude: -103.906704631448											
			Datit			2 Longkud OF RELI		731440				
Type of Relea	ase. Produce	ed Water		,			Release: 30Bbls	I	Volum	e Recovered	: 30B	bls
			cause tank	level sensor faile	d to		our of Occurrenc	e		nd Hour of I		
work properly						4	0730hrs MT			5 – 0830hr		
Was Immedia	ate Notice Gi		Yes [	No □ Not R	equired	If YES, To	Whom? Heather	r Patterson	(left VN	I on office l	ine)	
By Whom? Z	ack Laird					Date and F	lour: 02/12/15 – 1	530hrs CT	7			
Was a Watero		ned?	·				lume Impacting t					
			Yes 🗵	No		N/A						İ
If a Watercou	ırse was Imp	acted. Descr	ibe Fully.	' N/A		<u> </u>			<del></del>			
	<b>,</b>	,										
Dagarika Can	af Daabla	ad D	d:=1 A =4:=	. Talaa *								
Describe Cau	ise of Proble	m and Reme	dial Actio	n Taken.*								
Water tanks of	over ran beca	ause tank lev	el gauge/s	witch failed to fur	nction an	d activate tra	nsfer pump, so fl	uid transfe	r did not	occur.		
Turned transf	fer pump on,	repaired swi	itch, recov	ered fluid with va	ic truck a	and will wash	lined secondary	containme	nt.			
Describe Area Affected and Cleanup Action Taken.*												
,Describe Are	a Affecteu a	na Cicanap 7	action 1 ai	cii.								
All fluid rema	ained in seco	ondary contain	inment be	m, 30/30Bbls rec	overed.							
	.*											
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and					ules and							
							nd perform correc					
							arked as "Final R					
							on that pose a three					
or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.												
rederal, state,	or rocar law		arations.	•			OIL CON	SERVA	TION	DIVISI	JN	
			1	1			OIL COIL	DLICVI	/	DIVIGA	<del>)'</del>	
Signature:					. ,	1 /2		,				
Printed Name: Zack Laird  Approved by Environmental Specialist:					_							
Timed Tunic. Zack Dalid												
Title: Sr. EH	S Manager					Approval Da	te: [ ] ] ]	) Ex	piration	Date: N	H	
E-mail Address: ZLaird@rkixp.com  Conditions of Approval:												
-		- 1 · · · · · · ·			Re	mediation	n per O.C.D.	Rules &	Guide	Inettached	Ш	
Date: 02/12/15 Phone: 405-98/-2213				emediation per O.C.D. Rules & Guidelinetsched UBMIT REMEDIATION PROPOSAL NO								
Attach Addit	tional Shee	ts 1f Necess	ary			TER THA		15			n	RP-1813
											1.1	わヤニノカレフ

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	nAB1504834000
District RP	
Facility ID	
Application ID	

## **Release Notification**

### **Responsible Party**

			resp	onsible i ui t	J			
Responsible Party: WPX Energy Permian, LLC OGRI				OGRID: 2	246289			
Contact Name: Jim Raley Contact					Telephone: 575-689-7597			
Contact email: Jim.Raley@dvn.com Incider					# (assigned by OCD): nAB150483400			
Contact mail	ling address:	: 5315 Buena Vista	Drive, Carlsbad N	JM				
			Location	of Release S	ource			
Latitude		32.0379455094502	2	Longitude	ongitude -103.906704631448			
				imal degrees to 5 decir	mal places)			
Site Name: R	DX 17-14			Site Type:	Oil and Gas Well			
Date Release	Discovered	: 02/12/2015		API# (if app	plicable): 30-015-39845			
Unit Letter	Section	Township	Range	Cour	ntv			
N	17	26S	30E	Edo				
Surface Owne		Federal Tr	Nature and	Volume of 1				
Crude Oi		Volume Released		calculations or specific	c justification for the volumes provided below)  Volume Recovered (bbls):			
	Water	Volume Released (bbls): 30			Volume Recovered (bbls): 30			
Is the concentration of dissolved produced water >10,000 mg/l?				nloride in the	X Yes ☐ No			
Condensa	ite	Volume Released (bbls)			Volume Recovered (bbls)			
Natural Gas		Volume Released (Mcf)			Volume Recovered (Mcf)			
Other (describe) Volume/Weight Released (prov		Released (provide	units)	Volume/Weight Recovered (provide units)				
	over ran bec	ımp on, repaired sw saturated	vitch, recovered flu	id with vac truck	evate transfer pump, so fluid transfer did not and will wash lined secondary containment.  Porosity (%) + recovered fluids (bbl)			

Received by OCD: 7/27/2023 1:36:47 PM Form C-141 State of New Mexico Page 2 Oil Conservation Division

te of New Mexico Incident ID nAB1504834000

Incident ID	nAB1504834000
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Was this a major release as defined by	If YES, for what reason(s) does the responsible party consider this a major release?				
19.15.29.7(A) NMAC?	Unauthorized release of a volume, excluding gases, of 25 barrels or more.				
⊠ Yes □ No					
If YES, was immediate no	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?				
Immediate notice was giv	ven by Zach Laird, to "EMNRD" Heather Patterson via phone/voicemail on February 12, 2015.				
	Initial Response				
The responsible	party must undertake the following actions immediately unless they could create a safety hazard that would result in injury				
The source of the rele	ease has been stopped.				
The impacted area ha	as been secured to protect human health and the environment.				
Released materials ha	ave been contained via the use of berms or dikes, absorbent pads, or other containment devices.				
All free liquids and re	ecoverable materials have been removed and managed appropriately.				
If all the actions describe	d above have <u>not</u> been undertaken, explain why:				
	IAC 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 info	rmation 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				
	ment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have gate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In				
addition, OCD acceptance o and/or regulations.	f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws				
Printed Name: Jim Rale					
Signature:	Date:				
email: Jim.Ralev@dvn.	.com Telephone: <u>575-689-7597</u>				
	•				
OCD Only					
Received by:	Date:				

	I uge + oj 1
Incident ID	nAB1504834000
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?	<u>&gt;100</u> (ft bgs)			
Did this release impact groundwater or surface water?	☐ Yes ⊠ No			
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ No			
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ⊠ No			
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ⊠ No			
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ⊠ No			
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ No			
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ No			
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ⊠ No			
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ No			
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ⊠ No			
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ No			
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	☐ Yes ⊠ No			
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.				
Characterization Report Checklist: Each of the following items must be included in the report.				

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

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

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	Page 5 of 1	87
Incident ID	nAB1504834000	
District RP		
Facility ID		
Application ID		

regulations all operators are required to report and/or file certain release no public health or the environment. The acceptance of a C-141 report by the failed to adequately investigate and remediate contamination that pose a thraddition, OCD acceptance of a C-141 report does not relieve the operator of and/or regulations.	tifications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have reat to groundwater, surface water, human health or the environment. In
Printed Name:Jim Raley	Title: Environmental Professional
Signature: fix Ry	Date:
email: Jim.Raley@dvn.com	Telephone: <u>575-689-7597</u>
OCD Only	
Received by: Shelly Wells	Date: <u>7/28/2023</u>

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Incident ID	nAB1504834000
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## Closure

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

Closure Report Attachment Checklist: Each of the following it	ems 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						
may endanger public health or the environment. The acceptance of	nediate contamination that pose a threat to groundwater, surface water, a C-141 report does not relieve the operator of responsibility for tions. The responsible party acknowledges they must substantially additions that existed prior to the release or their final land use in CD when reclamation and re-vegetation are complete.  Title: Environmental Professional					
OCD Only						
Received by: Shelly Wells	Date:					
	of liability should their operations have failed to adequately investigate and vater, human health, or the environment nor does not relieve the responsible or regulations.					
Closure Approved by: Ashley Maxwell Printed Name: Ashley Maxwell	Date: <u>9/26/2023</u>					
Printed Name: Ashley Maxwell	Title: Environmental Specialist					



# **CLOSURE REQUEST ADDENDUM**

**RDX 17-14** 

Eddy County, New Mexico
Incident Number nAB1504834000

Prepared for:

WPX Energy Permian, LLC

Carlsbad • Midland • San Antonio • Lubbock • Hobbs • Lafayette



#### **SYNOPSIS**

In response to a meeting with the New Mexico Oil Conservation Division (NMOCD) for the denial of a Closure Request Addendum (CRA), which addressed the only concern of inadequate determination of depth to groundwater from a denial associated with a previously submitted Closure Report (CR) for the RDX 17-14 (Site). Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of WPX Energy Permian, LLC (WPX), presents the following updated CRA that includes the CR with the complete remediation and laboratory analytical summaries. The previous CR and CRA were denied on March 27, 2023, and June 21, 2023, respectively due to the following reason(s):

#### March 27, 2023

• "The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater."

#### June 21, 2023

• "Closure denied due to incomplete closure report. The following are missing: scaled site map/sampling diagram, description of remediation activities, photographs of the remediated site, and final sampling lab analyses."

Shelly Wells and Ashley Maxwell from NMOCD requested to resubmit this CRA with the updated groundwater determination and specifically the CR as an attachment, due to their inability to reference the CR in the NMOCD permitting files (OCD Permitting - Incidents (nm.gov)). Based on the updated CRA, correspondence and requests from NMOCD, WPX is requesting No Further Action (NFA) for Incident Number nAB1504834000.

#### SITE LOCATION AND BACKGROUND

The Site is located in Unit N, Section 17, Township 26 South, Range 30 East, in Eddy County, New Mexico (32.0379455094502° N, 103.906704631448° W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management. (**Figure 1** in **Appendix A**).

On February 12, 2015, overflow of storage tanks caused approximately 30 barrels (bbls) of produced water to be released into a lined secondary containment. Vacuum trucks were immediately dispatched and recovered approximately 30 bbls of fluid. 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 February 12, 2015, and was subsequently assigned Incident Number nAB1504834000.

#### SITE CHARACTERIZATION AND CLOSURE CRITERIA

Etech characterized the Site according to Table I, 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) considering depth to groundwater and the proximity to:

- Any continuously flowing watercourse or any other significant watercourse;
- Any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark);
- An occupied permanent residence, school, hospital, institution or church;

Closure Request Addendum Incident Number nAB1504834000 RDX 17-14



- A spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes;
- · Any freshwater well or spring;
- Incorporated municipal boundaries or a defined municipal fresh water well field covered under a municipal ordinance;
- A wetland:
- A subsurface mine;
- An unstable area (i.e. high karst potential); and
- A 100-year floodplain.

The nearest permitted water well used in the CR with depth to water data was New Mexico State of the Engineer (NMOSE) well C-01361, located approximately 1.8 miles north of the Site. NMOSE well C-01361 has a reported depth of water 184 feet below ground surface (bgs) from 1953. Due to the distance of the well from the Site and the age of the groundwater measurement (greater than 0.5 miles and greater than 25 yrs old), NMOCD determined the data to be insufficient to assist with the regional groundwater depth estimate at the Site.

Since the submittal of the CR, on December 16, 2020, Talon LPE drilled a soil boring (MW-1), located approximately 0.5 miles east of the Site on the RDX 17 #3 well pad. Using a truck mounted drill rig equipped with hollow stem auger, the soil boring was advanced to a total depth of 107 feet bgs. No fluids were observed throughout the drilling process nor after a 72-hour observation period. Following the observation period, the boring was plugged and abandoned according to the appropriate regulations. Well records for referenced wells and/or soil borings are provided in **Appendix B**.

All other potential receptors are not within the established buffers in NMAC 19.15.29.12. Receptor details from the site characterization are included in **Figure 1** in **Appendix A**.

Based on the results from the desktop review and further supported regional depth to groundwater at the Site, the following Closure Criteria was applied:

Constituents of Concern (COCs)	Laboratory Analytical Method	Closure Criteria
Chloride	(Environmental Protection Agency) EPA 300.0	20,000 milligram per kilogram (mg/kg)
Total Petroleum Hydrocarbon (TPH)	EPA 8015 M/D	2,500 mg/kg
TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO)	EPA 8021B	1,000 mg/kg
Benzene	EPA 8021B	10 mg/kg
Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	EPA 8021B	50 mg/kg

#### **CLOSURE REQUEST**

Following the recent completion of soil boring MW-1, located approximately 0.5 miles from the Site, depth to water determination at the Site has been further supported to be greater than 100 feet bgs. With the supplemental groundwater data, WPX has addressed all concerns in the denial responses from the NMOCD. NFA appears warranted at this time and the Site should be respectfully considered for Closure by the NMOCD. The previously submitted CR can be referenced in **Appendix C**.

If you have any questions or comments, please do not hesitate to contact Joseph Hernandez at (281) 702-2329 or joseph@etechenv.com or Anna Byers at (575) 200-6754 or anna@etechenv.com.

Closure Request Addendum Incident Number nAB1504834000 RDX 17-14



Sincerely,

Etech Environmental and Safety Solutions, Inc.

Anna Byers Senior Geologist

cc: Jim Raley, WPX

New Mexico Oil Conservation Division

Bureau of Land Management

Joseph S. Hernandez Senior Managing Geologist

Joseph Stoly

Appendices:

Appendix A: Figure 1: Site Map

Appendix B: Referenced Well Records

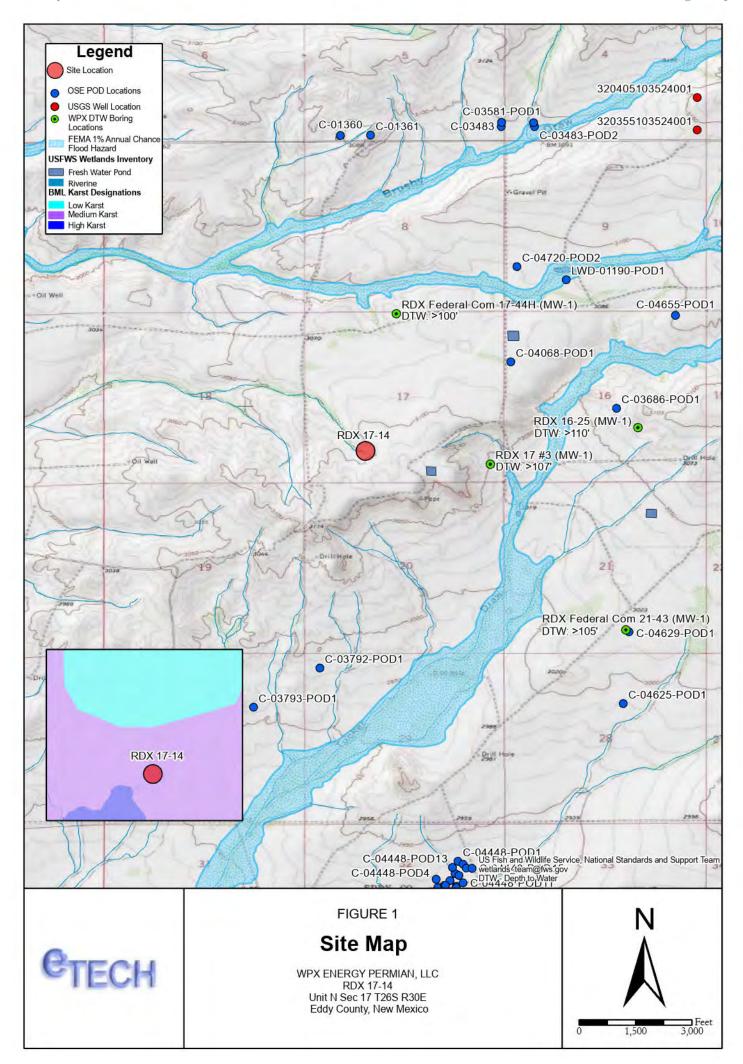
Appendix C: Previously Submitted Closure Request

# **APPENDIX A**

Figure 1: Site Map

P.O. Box 62228 Midland • TX • 79711 • Tel: 432-563-2200 • Fax: 432-563-2213





## **APPENDIX B**

Referenced Well Records

P.O. Box 62228 Midland • TX • 79711 • Tel: 432-563-2200 • Fax: 432-563-2213





## New Mexico Office of the State Engineer

# **Point of Diversion Summary**

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

 Well Tag
 POD Number
 Q64 Q16 Q4 Sec
 Tws Rng

 C 01361
 3 4 3 05 26S 30E

**X Y** 603240 3548157

Driller License: 95 Driller Company: FOLK DRILLING CO.

**Driller Name:** 

**Drill Start Date:** 05/16/1952 **Drill Finish Date:** 06/01/1952 **Plug Date:** 

**Log File Date:** 11/17/1953 **PCW Rcv Date:** Source: Shallow

Pump Type: Pipe Discharge Size: Estimated Yield:

Casing Size: 12.75 Depth Well: 775 feet Depth Water: 184 feet

Water Bearing Stratifications:	Top	Bottom	Description
	195	230	Sandstone/Gravel/Conglomerate
	255	295	Sandstone/Gravel/Conglomerate
	535	570	Sandstone/Gravel/Conglomerate
	695	735	Sandstone/Gravel/Conglomerate
	740	750	Sandstone/Gravel/Conglomerate

<b>Casing Perforations:</b>	Top	Bottom
	145	353
	418	555

Meter Number:16559Meter Make:SIEMENSMeter Serial Number:L1254817Meter Multiplier:100.0000Number of Dials:8Meter Type:Diversion

530

755

Unit of Measure: Gallons Return Flow Percent:

Usage Multiplier: Reading Frequency: Quarterly

#### **Meter Readings (in Acre-Feet)**

Read Date	Year	Mtr Reading	Flag	Rdr Comment	Mtr Amount Online
07/01/2014	2014	432977	A	RPT	0
09/30/2014	2014	542020	A	RPT	33.464
11/20/2014	2014	71523	A	RPT	0
12/31/2014	2014	10869200	A	RPT	33.137
04/01/2015	2015	20528000	A	RPT	29.642
07/01/2015	2015	32166600	A	RPT	35.718
10/02/2019	2019	41391130	A	RPT	2830.904
01/02/2020	2020	44360000	A	RPT	911.113
12/31/2021	2021	53003390	A	WEB	2652.559 X
X Add TOD D. T. C.		¥7			

**YTD Meter Amounts:	Year	Amount
	2014	66.601
	2015	65.360
	2019	2830.904

2020 911.1132021 2652.559

**Meter Number:** 16560 **Meter Make:** MASTERMETER

Meter Serial Number:425026402Meter Multiplier:1.0000Number of Dials:9Meter Type:Diversion

Unit of Measure: Gallons Return Flow Percent:

Usage Multiplier: Reading Frequency: Monthly

#### **Meter Readings (in Acre-Feet)**

Read Date	Year M	Itr Reading	Flag	Rdr	Comment	Mtr Amount Online
01/03/2012	2012	796624	A	RPT		0
04/01/2014	2014	322335	R	RPT	Meter Rollover	161.335
07/01/2014	2014	422977	A	RPT		30.886
10/01/2014	2014	542008	A	RPT		36.529
11/20/2014	2014	597747	A	RPT		17.106
11/21/2014	2014	71523	A	RPT		0
12/31/2014	2014	108692	A	RPT		11.407
02/01/2015	2015	144071	A	RPT		10.857
03/02/2015	2015	177073	A	RPT		10.128
04/01/2015	2015	204100	A	RPT		8.294
04/30/2015	2015	246672	A	RPT		13.065
05/31/2015	2015	286863	A	RPT		12.334
07/01/2015	2015	329411	A	RPT		13.058
08/01/2015	2015	350757	A	RPT		6.551
08/31/2015	2015	384122	A	RPT		10.239
10/01/2015	2015	413202	A	RPT		8.924
10/01/2015	2015	0	A	RPT	Meter Change	0
10/31/2015	2015	2767800	A	RPT		8.494
11/30/2015	2015	5636900	A	RPT		8.805
12/31/2015	2015	7565000	A	RPT		5.917
01/31/2016	2016	9247200	A	RPT		5.162
02/29/2016	2016	12569900	A	RPT		10.197
03/31/2016	2016	14698800	A	RPT		6.533
04/30/2016	2016	16601309	A	RPT		5.839
05/30/2016	2016	19235300	A	RPT		8.083
06/30/2016	2016	22955800	A	RPT		11.418
07/31/2016	2016	26437114	A	RPT		10.684
08/30/2016	2016	30077563	A	RPT		11.172
09/30/2016	2016	32631836	A	RPT		7.839
10/31/2016	2016	35193200	A	RPT		7.861
11/30/2016	2016	37896100	A	RPT		8.295
12/31/2016	2016	41023100	A	RPT		9.596
04/04/2019	2019	99357190	A	RPT		179.021
**YTD Met	er Amounts:	Year		Amount		
		2012		0		
		2014		257.263		
		2015		116.666		
		2016		102.679		

2019

179.021

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

6/2/23 1:56 PM

POINT OF DIVERSION SUMMARY

7		HR							MONITORING W	ELL COMPLETION	N DIAGE	RAM
$\nearrow$			-	IAN	C F		Boring/Well Number: Location: MW-1 RDX 1				#3	
		\$ 0	LIII		N S		Date:			Client:		
Drilling Me	athod:	0 0	Sampling N	Aathod:			Logged By:		3/2020	WPX En	ergy	
	Air Rotar	y	Sampling I		one		Logged By.		nn, PG	Talon L	PE	
Gravel Pacl			Gravel Pac	k Depth Inte			Seal Type:		Seal Depth Interval:	Latitude:		
Casing Typ	0/20 Sar	nd Diameter:		3 B Depth Inter	ags			one al Depth (ft. BC	None None	32.0367 Longitude:	65	
PVC		2-inch		0-102 fe	eet bgs			10	07	-103.895	993	
Screen Typ	e:	Slot:	1.	Diameter:		Interval:	Well Total	Depth (ft. BGS			DTW Date:	2020
PVC		0.010-ii	ncn	2-inch		107 ft		10	) / 	> 107	12/16/2	2020
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	(mdd) QIA	NSCS	Sample ID	Litholog	y/Remarks	We Comple	
5											<u> </u>	
10										•	<del> </del>	
15	NM	L	D	N	N	NM	SP	SP NS Pale orange poorly		ly graded fine sand	<del> </del>	
20										•	<del> </del>	
25										•	<del> </del>	
30	NM	L	D	N	N	NM	SP	NS		th slight increase in		
35	11111	L	D	11	11	11111	51	145	coarse sand	d and gravel		
40	NM	L	D	N	N	NM	SP	NS		ly graded fine sand		
50										, siigiiv siiv		
55	NM	L	D	N	N	NM	SP	NS	Pale orange poor	ly graded fine sand		
60	NM	L	D	N	N	NM	SW	NS	Pale orange well	l graded fine sand	<u> </u>	
65												
70									Dala rad aran a1	ayey silty fine sand	<u> </u>	
75	NM	M	SL M	N	N	NM	SM	NS	_	se sand and gravel	<u> </u>	
80												
85												
90												
95 100	NM	L	SL M	N	N	NM	SP	NS		y sorted fine sand - 97' BGS		
105										•		

# **APPENDIX C**

Previously Submitted Closure Report

P.O. Box 62228 Midland • TX • 79711 • Tel: 432-563-2200 • Fax: 432-563-2213





LT Environmental, Inc.

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

April 22, 2020

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

**RE:** Closure Request

WPX Energy Permian, LLC RDX 17-14 (2RP-2813) Incident ID NAB1504834000 Eddy County, New Mexico

Dear Mr. Bratcher:

LT Environmental, Inc. (LTE), on behalf of WPX Energy Permian, LLC (WPX), presents the following Closure Request detailing soil sampling and excavation activities at the RDX 17-14 (Site) in Unit N, Section 17, Township 26 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the soil sampling and excavation activities was to investigate and address an area associated with a produced water release contained within a lined earthen berm, following Site decommissioning activities. Based on the excavation activities and results of the soil sampling events, WPX requests no further action (NFA).

#### **BACKGROUND**

On February 12, 2015, failure of a tank level gauge caused the water tanks to overfill, releasing approximately 30 barrels (bbls) of produced water into the lined secondary containment. Vacuum trucks were dispatched and recovered 30 bbls of produced water from the impacted area. WPX reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 (Form C-141) which was received by the NMOCD on February 12, 2015 and was assigned Remediation Permit Number 2RP-2813 and Incident NAB1504834000 (Attachment 1). An updated Form C-141 reflecting the correct Unit, initially reported as Unit A, is also attached.

#### SITE CHARACTERIZATION

LTE characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on known aquifer properties and an identified water well. The nearest permitted water well with depth to water data is New Mexico Office of the State Engineer (NMOSE) water well C-01361 (Carlsbad Basin), located approximately 9,820 feet north of the Site.



Bratcher, M. Page 2

Water well C-01361 has a reported depth to water of 184 feet bgs and is approximately 3 feet higher in elevation than the Site. The closest significant watercourse to the Site is an intermittent stream, identified by United States Geological Survey (USGS) National Hydrography Dataset (NHD) with an Annual Mean Flow of less than 1 cubic feet per second (cfs), located approximately 1,009 feet northwest of the Site. The Site is greater than 300 feet from any 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 1.

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);
- 2,500 mg/kg total petroleum hydrocarbons (TPH);
- 1,000 mg/kg TPH-gasoline range organics (GRO) and TPH-diesel range organics (DRO); and
- 20,000 mg/kg chloride.

Remediation activities were completed in conjunction with P&A reclamation efforts for the Site. As such, LTE applied a reclamation standard for chloride of 600 mg/kg for the top four feet of the subject release area as required under Title 19, Chapter 15, Part 29, Section 13, Subsection D(1) of the NMAC.

#### SITE ASSESSMENT AND DELINEATION SOIL SAMPLING

On March 17, 2020, LTE conducted site investigative activities concurrently with delineation events. Utilizing heavy equipment, six potholes (PH01 through PH06) were advanced within the area of the formerly lined tank battery to verify the absence of impacts associated with the subject release. Field screening was conducted at every 1-foot interval and up to 4-feet bgs for volatile aromatic hydrocarbons using a photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Field screening results and observations for each borehole were logged on lithologic/soil sampling logs, which are included in Attachment 2. The locations of delineation boreholes are presented on Figure 2. Photographic documentation was conducted during the Site visit and a Photographic Log is included in Attachment 3.

#### **EXCAVATION ACTIVITIES**

Between March 18, 2020 and March 26, 2020, LTE was on site to oversee excavation activities within the release area. Excavation activities were directed by field screening soil samples for volatile aromatic hydrocarbons using a PID and chloride using Hach® chloride QuanTab® test



Bratcher, M. Page 3

strips. During excavation activities, five-point composite confirmation soil samples were collected from the floor (labeled as "FS") and sidewalls (samples labeled as "SW") of the excavation area. Each soil sample represented at most 200 square feet. The excavation area and soil sample locations are depicted on Figure 3. The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were shipped at or below 4 degrees Celsius (°C) under strict chain-of custody (COC) procedures to Xenco Laboratories (Xenco) in Midland, Texas, for analysis of BTEX following United States Environmental Protection Agency (USEPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-motor oil range organics (MRO) following USEPA Method 8015M/D; and chloride following USEPA Method 300.0.

Initial laboratory analytical results indicated additional remediation efforts were required in the areas represented by soil samples FS05 at 1 to 2 feet bgs, FS07 at 0.3 to 1 foot bgs, FS11 at 2 to 3 feet bgs and SW01 at 0 to 4 feet bgs. Remediation in these areas was confirmed via laboratory analytical results of soil samples FS05A at 4 feet bgs, FS07A at 0.5 to 2 feet bgs, FS11A at 4 feet bgs and SW06 at 0 to 4 feet bgs, respectively.

Approximately 1,220 cubic yards of impacted soil was removed from the excavation. Generated material was transported to the R360 Halfway Facility in Hobbs, New Mexico for disposal under WPX approved manifests. The excavation area measured a total of approximately 6,986 square feet in area and ranged in depth from 0 to 4 feet bgs. Complete laboratory analytical reports are included in Attachment 4. Additionally, photographic documentation was also conducted throughout the remediation process and is included in Attachment 3.

#### **ANALYTICAL RESULTS**

Laboratory analytical results of all final excavation confirmation soil samples indicate compliance with the Closure Criteria. Laboratory analytical results are summarized in Table 1.

#### **CONCLUSIONS**

Remediation of impacted soils was successfully achieved as demonstrated through soil confirmation sampling. The excavation was backfilled with locally sourced materials and recontoured to match pre-existing conditions. The area was reseeded with a BLM approved seed mix. In addition, the reclamation project will be monitored for vegetation growth by WPX personnel. WPX is requesting an NFA determination and closure of Remediation Permit Number 2RP-2813 and Incident ID NAB1504834000.



Bratcher, M. Page 4

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: Lynda Laumbach, WPX

Robert Hamlet, NMOCD Victoria Venegas, NMOCD

Jim Amos, BLM

#### Attachments:

Figure 1 Site Location Map

Figure 2 Delineation Soil Sample Locations Figure 3 Excavation Soil Sample Locations

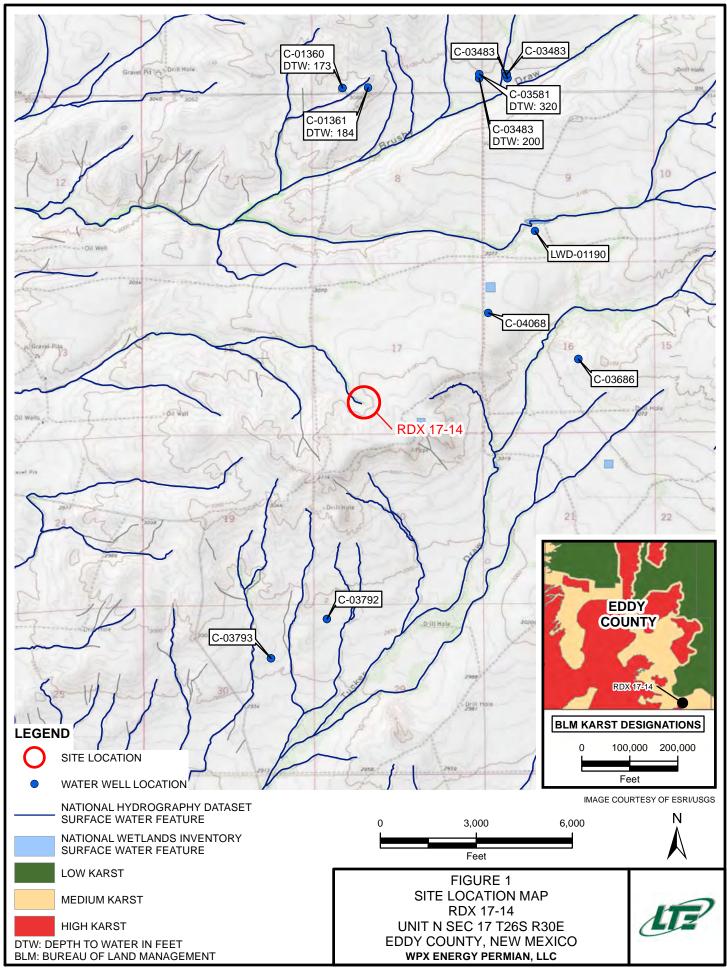
Table 1 Soil Analytical Results

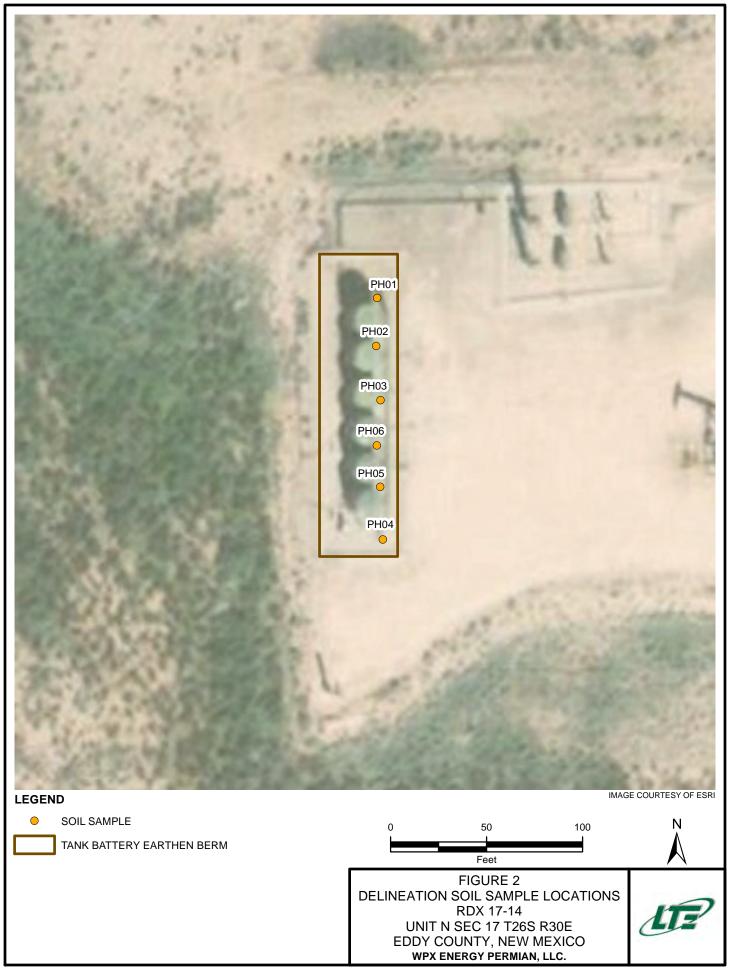
Attachment 1 Form C-141

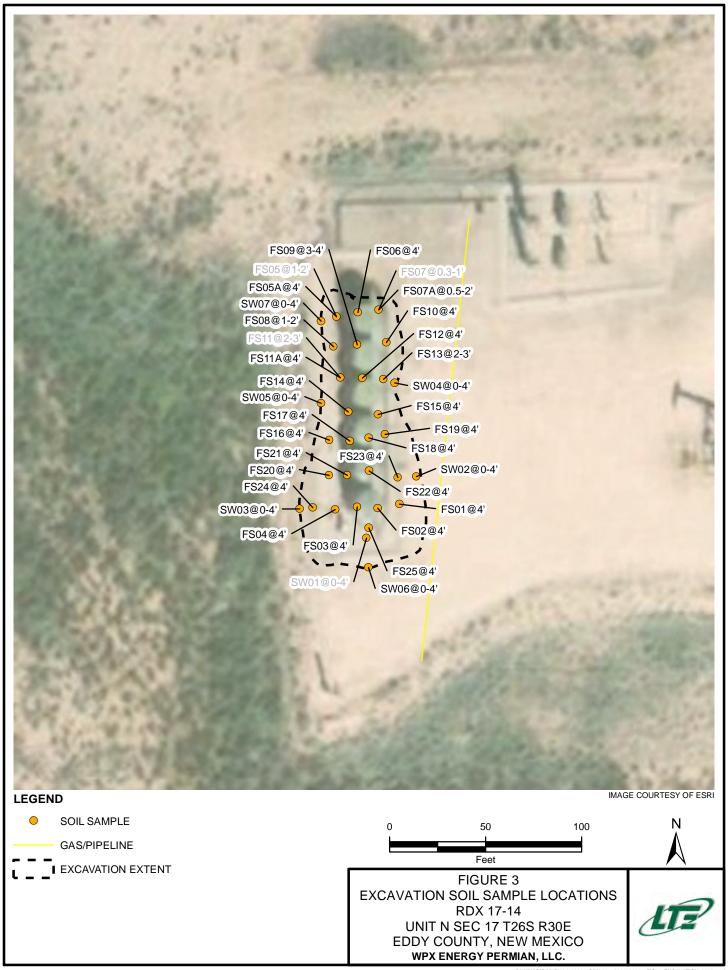
Attachment 2 Lithologic/Soil Sampling Logs

Attachment 3 Photographic Log

Attachment 4 Laboratory Analytical Reports







# TABLE 1 SOIL ANALYTICAL RESULTS

# RDX 17-14 REMEDIATION PERMIT NUMBER 2RP-2813 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
NMOCI	D Table 1 Closure	e Criteria	10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000	
FS01	4	03/23/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	824*	In-situ
FS02	4	03/23/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	307*	In-situ
FS03	4	03/23/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	1,470*	In-situ
FS04	4	03/23/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	7,710*	In-situ
FS05	1 - 2	03/20/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	710*	Excavated
FS05A	4	03/26/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.8	<49.8	<49.8	<49.8	<49.8	974*	In-situ
FS06	1 - 2	03/20/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	212*	In-situ
FS07	0.3 - 1	03/20/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<126	3280	569	3,280	3,850	209*	Excavated
FS07A	0.5 - 2	03/26/2020	< 0.00199	< 0.00199	<0.00199	< 0.00199	< 0.00199	<50.2	267	<50.2	267	267	273*	In-situ
FS08	1 - 2	03/20/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<50.1	155	<50.1	155	155	399*	In-situ
FS09	3 - 4	03/20/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	117	<50.0	117	117	499*	In-situ
FS10	4	03/23/2020	<0.00199	<0.00199	<0.00199	<0.00199	< 0.00199	<50.3	52.2	<50.3	52.2	52.2	572*	In-situ
FS11	2 - 3	03/20/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	98.1	<50.1	98.1	98.1	645*	Excavated
FS11A	4	03/26/2020	< 0.00199	<0.00199	<0.00199	<0.00199	< 0.00199	<50.3	90.7	<50.3	90.7	90.7	388*	In-situ
FS12	4	03/20/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	64.2	<50.2	64.2	64.2	190*	In-situ
FS13	2 - 3	03/20/2020	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<49.9	570	77.1	570	647	274*	In-situ
FS14	4	03/23/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.2	248	<50.2	248	248	188*	In-situ
FS15	4	03/23/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.3	506	74.9	506	581	441*	In-situ
FS16	4	03/23/2020	<0.00199	< 0.00199	<0.00199	< 0.00199	< 0.00199	<50.2	89.4	<50.2	89.4	89.4	575*	In-situ
FS17	4	03/23/2020	<0.00199	< 0.00199	<0.00199	< 0.00199	< 0.00199	<49.8	307	<49.8	307	307	299*	In-situ
FS18	4	03/23/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.8	133	<49.8	133	133	424*	In-situ
FS19	4	03/23/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.1	255	<50.1	255	255	312*	In-situ
FS20	4	03/23/2020	<0.00199	<0.00199	<0.00199	<0.00199	< 0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	1,570*	In-situ
FS21	4	03/23/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<50.2	284	<50.2	284	284	525*	In-situ
FS22	4	03/23/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<49.9	354	55.7	354	410	1,110*	In-situ



# TABLE 1 SOIL ANALYTICAL RESULTS

# RDX 17-14 REMEDIATION PERMIT NUMBER 2RP-2813 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
NMOCI	D Table 1 Closure	<b>Criteria</b>	10	NE	NE	NE	50	NE	NE	NE	1,000	2,500	20,000	
FS23	4	03/23/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	166	<49.9	166	166	3,000*	In-situ
FS24	4	03/26/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	2,050*	In-situ
FS25	4	03/26/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	<50.0	<50.0	<50.0	<50.0	2,940*	In-situ
SW01	0 - 4	03/24/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	648*	Excavated
SW02	0 - 4	03/20/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.0	160	<50.0	160	160	343*	In-situ
SW03	0 - 4	03/26/2020	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<50.1	<50.1	<50.1	<50.1	<50.1	317*	In-situ
SW04	0.3 - 4	03/20/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.8	263	<49.8	263	263	136*	In-situ
SW05	0.3 - 3	03/20/2020	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<50.2	165	<50.2	165	165	420*	In-situ
SW06	0 - 4	03/26/2020	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	193*	In-situ
SW07	0 - 4	03/26/2020	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<50.1	<50.1	<50.1	<50.1	<50.1	439*	In-situ

#### Notes:

bgs - below ground surface

BTEX - benzene, toluene, ethylbenzene, and total xylenes

DRO - diesel range organics

GRO - gasoline range organics

mg/kg - milligrams per kilogram

MRO - motor oil range organics

NMAC - New Mexico Administrative Code

NMOCD - New Mexico Oil Conservation Division

NE - not established

TPH - total petroleum hydrocarbons

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

< - indicates result is below laboratory reporting limits

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

 $\ ^*$  - indicates sample was collected in area to be reclaimed after remediation is complete;

closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg  $\,$ 





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

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	NAB1504834000
District RP	2RP-2813
Facility ID	
Application ID	

## **Release Notification**

### **Responsible Party**

Responsible	Party WPX	CEnergy Permi	an, LLC.	OGRID				
Contact Nan	<sup>ne</sup> Lynd	a Laumbach			Contact Telephone 575-725-1647			
Contact ema	<sup>il</sup> lynda.la	umbach@wp	xenergy.com		Incident # (assigned by OCD)			
Contact mai	ling address	5315 Buena \	/ista Dr., Car	Isbad.	NM 8822	0		
					Release So			
Latitude 32	03794				Tamalanda :	-103.90670		
Latitude <u>52</u>	.00701		(NAD 83 in d	lecimal de	grees to 5 decim	pal places)		
Site Name R	DX 17-14	1			Site Type	Dil and Gas W	ell	
Date Release	Discovered	02/12/2015				licable) 30-015-3		
			D					
Unit Letter	Section	Township	Range		Coun	ty		
N	17	26S	30E	Edd	у			
Surface Owne	er: State	Federal T	ribal Private	(Name:	BLM		)	
			Nature an	nd Vo	lume of F	Release		
	Materia	al(s) Released (Select a	ll that apply and attac	ch calculat	tions or specific	justification for the vol	lumes provided below)	
Crude Oi		Volume Release				Volume Recover		
✓ Produced	Water	Volume Release	ed (bbls) 30 bbls	3		Volume Recover	red (bbls) 30 bbls	
			tion of dissolved	chloride	e in the	☐ Yes ☑ No		
Condensa	ate	Produced water Volume Release				Volume Recover	red (bbls)	
Natural C	Gas	Volume Release	ed (Mcf)			Volume Recover	red (Mcf)	
Other (de	escribe)	Volume/Weight	Released (provi	)	Volume/Weight	Recovered (provide units)		
Cause of Rel	lease Wate	r tanks over ra	an because t	ank le	vel gauge	switch failed	to function and activate	
	trans	fer pump, so f	luid transfer o	did no	t occur.			

Page 32 of 187

Incident ID	NAB1504834000
District RP	2RP-2813
Facility ID	
Application ID	

	· . , , , , ,			
Was this a major release as defined by	If YES, for what reason(s) does the resport > 25bbls	sible party consider this a major release?		
19.15.29.7(A) NMAC?	> 250015			
, ,				
Yes No				
-2				
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?				
Zach Laird notified Heather Patterson (VM left on office line) on 2/12/2015 @ 15:30 hrs CST				
	Initial Re	esponse		
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury				
✓ The source of the release has been stopped.				
☑ The impacted area has	as been secured to protect human health and	the environment.		
Released materials ha	ave been contained via the use of berms or d	ikes, absorbent pads, or other containment devices.		
	ecoverable materials have been removed and	1		
	d above have <u>not</u> been undertaken, explain v			
Per 19.15.29.8 B. (4) NM	IAC the responsible party may commence re	emediation 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.				
		pest of my knowledge and understand that pursuant to OCD rules and actions 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: Lynda	Laumbach	Title: Environmental Specialist		
Signature:		Date:		
email: lynda.laumbach@wpxenergy.com		Telephone: 575-725-1647		
		•		
OCD Only				
Received by:		Date:		

NAB1504834000

Incident ID District RP 2RP-2813 Facility ID Application ID

## **Site Assessment/Characterization**

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

What is the shallowest depth to groundwater beneath the area affected by the release?	>100 (ft bgs)			
Did this release impact groundwater or surface water?	☐ Yes ☑ No			
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☑ No			
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?				
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☑ No			
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☑ No			
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☑ No			
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☑ No			
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☑ No			
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☑ No			
Are the lateral extents of the release overlying an unstable area such as karst geology?				
Are the lateral extents of the release within a 100-year floodplain?				
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	☐ Yes ☑ No			
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.				
Characterization Report Checklist: Each of the following items must be included in the report.				
Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring well Field data	ls.			
☐ 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				
<ul> <li>✓ Topographic/Aerial maps</li> <li>✓ Laboratory data including chain of custody</li> </ul>				
w Davoratory and morating than or tablety				

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.

Received by OCD: 7/27/2023 1:36:47 PM Form C-141 State of New Mexico Page 4 Oil Conservation Division

	Page 34 of 18	87
Incident ID	NAB1504834000	
District RP	2RP-2813	
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: Lynda Laumbach

Title: Environmental Specialist

Signature:

email: lynda.laumbach@wpxenergy.com

Telephone: 575-725-1647

OCD Only

Received by:

Date:

Dat

Page 35 of 187

Incident ID	NAB1504834000
District RP	2RP-2813
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 it	tems 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				
and regulations all operators are required to report and/or file certain may endanger public health or the environment. The acceptance of	ntions. The responsible party acknowledges they must substantially nditions that existed prior to the release or their final land use in			
Printed Name: Lynda Laumbach	Title: Environmental Specialist			
Signature: Jula Sambach	Date:06/18/2020			
email: lynda.laumbach@wpxenergy.com	Telephone: <u>575-725-1647</u>			
OCD Only				
Received by:	Date:			
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.				
Closure Approved by:	Date:			
Printed Name:	Title:			



<b>II</b>	2			LT Envi	ronmenta	al, Inc.			Identifier: PHOI	Date: 3/17/20
LT Environg	mental, Inc.				st Stevens New Mexic Engineering				Project Name:  ROX 17-14	RP Number: 2 RP - 2813
	-	LITHOI			L SAMP				Logged By: JH	Method: Hand Auger
Lat/Long:		Dittion			Field Scree	ning:			Hole Diameter: Backhoz	Total Depth: 4
Comment	ts:		7	no	111	۸.				
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)		Soil/Rock Type		Lithology/	Remarks
PM	BOL	1.7 30			0.5	-			Well gods (ned-cons) of	soul. No Plashoty. No.
	BOL	1.3			2			0 1	" no great, truck or	gnuc
h	PDr	6.(			3	#		" \	C	
$\bigvee$	DAL	2.0			4			n **	ul grand of earthche	, no organis
					5	#		71	DP 22 4.	6 '
					6	#				
					7					
					8	+				
					9					
					10	#				.988
					11	1				2.305
					12	#				4.5

Released to Imaging 9/26/2023 7.55 51 AV

Lathlang Field Secretary PD, Chloride Piole Diamoger Inch the Comments:  TO C L/, 6 Ct  By By Do	I Environme	3330		50 Carl	08 West sbad, N	onmenta Stevens ew Mexic	Street o 88220			Project Name:	Date: 3/17/10  RP Number:  3 RP - 2 813				
Comments:  70 & U, 6 Ct  autypy  10 (mid d)  10 (mid d			LITHO	LOGIC	/ SOII	SAMPI	ING LO	)G			Method: Hand Auge				
Depth Sample You go at Lithology/Remarks  The BOL 45.0 Y  S.1 Y  Depth Sample You go at Sheen. No. Plat  See No. Plat  No. 5  No. 5  No. 5  No. 60  No. 7  No. 60  No. 7  No. 60  No. 7  No. 60  No. 7   Lat/Long					The state of the s	100				Total Depth: 4-0 feel					
Depth Sample You be surjusted by the sample of the sample	Commen	ts:		71	00										
Steen, No. Plat  Steen, No. Plat  Sheen, No. Plat  "" Ornered organis  SPT SPSC DE. Branch (Em. and) Brane and  SPT SPSC DE. Branch organis  In odor  SPSC Branch (Em.) no oder,  mod plunter, org.  TO P 4.0 CL	Moisture Content	Chloride (ppm)	Vapor (ppm)	77		Depth	Sample	Soil/Rock Type		Litholo	gy/Remarks				
17.1 3 - 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	~	BOL		150		0.5			sw 5	heen. No. Phil	(for med) Brang oder o				
SPSC Brufred (And) no odr. med plushets, org.  7  8  9  10			0.5			2					nd organis, no al				
5 psc Brufred (Ruc) no sour.  med plushets; ong.  7 psc 4.6 cu						3			и	u oder					
7	A	V	2.3			4			5 PSO med	Brufred (Am	a) no odr.				
			7-1			5				70 e	4.0 04				
						6									
						7	1								
						8									
						9									
						10									
						11	#								

LI Environ	-		5	08 Wes	ronmenta st Stevens New Mexic	Street			Identifier: PH0.3 Project Name:	Date: 3/17/20  RP Number:				
2				The sales	ngineering				ROX 77-14	2RP-8813				
		LITHOL	ogic	/SOI	L SAMPI		)G		Logged By: JH	Method: Hand Aug				
Lat/Long:				Field Screening: PID, Chloride					Hole Diameter: beckh- Total Depth:					
Comment	ts:		TRE 40 FC				L							
Moisture	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type		Litholog	gy/Remarks				
m	BOL	113.7			0 ]			LL.	(mod-coard) Odor Sun/ten, Sheon trece organics.					
	BBL	3,3			2				Brom (bute) . (Fine) me traces , shoen					
	80 L	7.4			3	+		SPSC.	Brum (God) Med. Phe	shut, ottanics.				
V	BOL	4,6			4			44 .	Brown red . High	plushed . ergene breen				
					5				70 C	40 f4				
					6	1								
					7	1								
					8	#								
					9									
					10	1								
					11	1				,				
					12	1								

LT Environi	Charton		Can	08 Wes Isbad, I	ironmenta st Stevens New Mexic Engineering	Street co 88220			Identifier: PHOY Project Name: ROX 17-19	Date: 3/17/20  RP Number:  dRP - 3.813
		LITHO	LOGIC	/SOI	L SAMP		)G		Logged By: JH	Method: Hand Auger
Lat/Long:					Field Scree PID, Chlor	_			Hole Diameter: buckhe	Total Depth: 4.0
Comment	S:		70	0	40				12, 300	7.0
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #		Sample	Soil/Rock Type		Lithology/R	emarks
0	150L	10.4	4 4%		0.5				(med-cours-) to	
n	BAL	1.0			2	- - -			(Brown DK.) Fine order	org, wed plat
^	<b>D</b> DL	0.9			3			14	N.	
~	BDL	1.9			4			54	Brown (lat) Fur	e ery, no order
1					5				70e 4	1.05+
Ш					6					
					7	-				
					8					
					9					
					10					
					11					
					12					

1158

-	mental, Inc.		Cal	508 We dsbad,	ironmenta st Stevens New Mexic Engineering	Street co 88220			Identifier: PH05 Project Name: R0 x 17-14	Date: 3/17/10  RP Number:
		LITHO			L SAMPI				Logged By: JH	ARP - 2813  Method: Hand Auge
Lat/Long		Little		7 501	Field Scree	ning:			Hole Diameter: beleloe	Method: Hand Aug
Commen	nts:		70	) 6		8 L	1		C3/ 1.5-2.0°	
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample	Soil/Rock Type		Lithology/Re	emarks
^	424	7.8 1.3	i i		0.5			SUSM Ca SPSA	Brown (coerse)	org. U. Plast
M	556	1,5	ŧ		2			11	n	
M	848	0.4			3			и	4	
м	1872	0.9			4			/1	¥	
				_	5			0	TDE 4.0	<i>C</i> <sub>4</sub>
					6					
	x.				7		X			
					8					
					9					
		4			10					
		1			11 _					
					12					

LT Enviror	mental, Inc.		5 Car	T Enviro 08 West Isbad, Ne	Stevens ew Mexic	Street to 88220			Project Name:		RP Number:		
-		LITHO	7.50	ance · En	1 0 1				RO & I	7-14		Hand Au	
Lat/Long		Limo	Louie	F	Field Screen	ning:				buleh 1.5-1.01	DRP-381  Method: Hand A  Total Depth: 4,0		
Commer	its:		70	0	4.0	Fed							
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining		Depth (ft. bgs.)	Sample Depth	Soil/Rock Type			Lithology/Re	marks		
2 2	360	46.1 6.1	Y N 1		0.6-			susm Spsn	Brown &	(Med)	Oder, org	de, or	
	556	5.6			2			μ	ч				
	664	1.6			3			11	×c				
V	556	1.4	4		4			SL	Boome I red	no oder,	uz. ned	. pust	
					5			7	00	4-0			
					7								
					8	-							
					9								
					10								
					11 _	-							

### PHOTOGRAPHIC LOG



**Photograph 1:** View of the Site facing northeast.



**Photograph 3:** Northeast view of the Site during delineation activities.



**Photograph 2:** View of the Site facing northwest.



**Photograph 4:** Southeast view of the Site during delineation activities.

RDX 17-14 32.03794, -103.90670

Photographs Taken: March 17, 2020 though March 31, 2020

Page 1 of 3



### PHOTOGRAPHIC LOG



**Photograph 5:** Southeast view of the Site during excavation events.



**Photograph 7:** Southwest view of the Site during excavation events.



**Photograph 6:** Northeast view of the Site during excavation events.



**Photograph 8:** North view of the Site during excavation events.

RDX 17-14 32.03794, -103.90670

Photographs Taken: March 17, 2020 though March 31, 2020





Received by OCD: 7/27/2023 1:36:47 PM

### PHOTOGRAPHIC LOG



**Photograph 9:** South view of the Site following excavation events.



**Photograph 11:** Northeast view of the Site following excavation events.



**Photograph 10:** Northwest view of the Site following excavation events.



**Photograph 12:** North view of the Site following excavation events.

RDX 17-14 32.03794, -103.90670

Photographs Taken: March 17, 2020 though March 31, 2020







# **Analytical Report 656468**

for

LT Environmental, Inc.

**Project Manager: Chris McKisson** 

**RDX 17-14** 

034820011

24-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)



24-MAR-20

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

Reference: XENCO Report No(s): 656468

**RDX 17-14** Project Address:

### **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) 656468. 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. 656468 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vramer

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 656468**

# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
FS05	S	03-20-20 14:35	1 - 2 ft	656468-001
FS11	S	03-20-20 11:41	2 - 3 ft	656468-002
FS12	S	03-20-20 14:22	4 ft	656468-003

# **CASE NARRATIVE**

Client Name: LT Environmental, Inc.

Project Name: RDX 17-14

 Project ID:
 034820011
 Report Date:
 24-MAR-20

 Work Order Number(s):
 656468
 Date Received:
 03/23/2020

### Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3120698 BTEX by EPA 8021B

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



# **Certificate of Analysis Summary 656468**

LT Environmental, Inc., Arvada, CO Project Name: RDX 17-14

Date Received in Lab: Mon Mar-23-20 08:25 am

Project Manager: Jessica Kramer

**Report Date:** 24-MAR-20

Project Id: 034820011
Contact: Chris McKisson

**Project Location:** 

							1		
	Lab Id:	656468-0	001	656468-	002	656468-0	003		
Analysis Requested	Field Id:	FS05		FS11		FS12			
muiysis Requesicu	Depth:	1-2 ft		2-3 ft	:	4- ft			
	Matrix:	SOIL	,	SOIL	,	SOIL			
	Sampled:	Mar-20-20	14:35	Mar-20-20	11:41	Mar-20-20 14:22			
BTEX by EPA 8021B	Extracted:	Mar-23-20	10:35	Mar-23-20	10:35	Mar-23-20	10:35		
	Analyzed:	Mar-23-20	12:53	Mar-23-20	12:33	Mar-23-20	13:34		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene	·	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200		
Toluene		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200		
Ethylbenzene		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200		
n,p-Xylenes		< 0.00396	0.00396	< 0.00398	0.00398	< 0.00399	0.00399		
o-Xylene		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200		
Xylenes, Total		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200		
Total BTEX		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00200	0.00200		
Chloride by EPA 300	Extracted:	Mar-23-20	11:09	Mar-23-20	11:09	Mar-23-20	11:09		
	Analyzed:	Mar-23-20	11:47	Mar-23-20	12:04	Mar-23-20	12:10		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		710	9.94	645	9.98	190	10.1		
TPH by SW8015 Mod	Extracted:	Mar-23-20	17:30	Mar-23-20	17:30	Mar-23-20	17:30		
	Analyzed:	Mar-24-20	06:44	Mar-24-20	07:04	Mar-24-20	07:24		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)	·	< 50.2	50.2	< 50.1	50.1	< 50.2	50.2		
Diesel Range Organics (DRO)		< 50.2	50.2	98.1	50.1	64.2	50.2		
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2	< 50.1	50.1	< 50.2	50.2	 	
Total GRO-DRO		<50.2	50.2	98.1	50.1	64.2	50.2	 	
Total TPH		< 50.2	50.2	98.1	50.1	64.2	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 Vramer



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: **FS05** 

Matrix:

Date Received:03.23.20 08.25

Lab Sample Id: 656468-001

Date Collected: 03.20.20 14.35

Sample Depth: 1 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB

MAB Date Prep:

Basis: 03.23.20 11.09

Wet Weight

Seq Number: 3120631

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 03.23.20 11.47 710 9.94 mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech:

Analyst:

DTH DTH

03.23.20 17.30 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.2	50.2		mg/kg	03.24.20 06.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.2	50.2		mg/kg	03.24.20 06.44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	03.24.20 06.44	U	1
Total GRO-DRO	PHC628	< 50.2	50.2		mg/kg	03.24.20 06.44	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	03.24.20 06.44	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	73	%	70-135	03.24.20 06.44		
o-Terphenyl		84-15-1	77	%	70-135	03.24.20 06.44		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS05 Matrix: Soil

Date Received:03.23.20 08.25

Date Collected: 03.20.20 14.35

Date Prep:

Sample Depth: 1 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

Lab Sample Id: 656468-001

% Moisture:

Analyst: MAB

03.23.20 10.35

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	03.23.20 12.53	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	03.23.20 12.53	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	03.23.20 12.53	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396		mg/kg	03.23.20 12.53	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	03.23.20 12.53	U	1
Xylenes, Total	1330-20-7	< 0.00198	0.00198		mg/kg	03.23.20 12.53	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	03.23.20 12.53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	107	%	70-130	03.23.20 12.53		
4-Bromofluorobenzene		460-00-4	99	%	70-130	03.23.20 12.53		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: **FS11** 

Lab Sample Id: 656468-002

Date Received:03.23.20 08.25

Date Collected: 03.20.20 11.41

Sample Depth: 2 - 3 ft

Prep Method: E300P

% Moisture:

MAB Tech:

Analyst: MAB

Date Prep: 03.23.20 11.09

03.23.20 17.30

Basis:

Wet Weight

Seq Number: 3120631

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 03.23.20 12.04 645 9.98 mg/kg 1

Date Prep:

84-15-1

Matrix:

Analytical Method: TPH by SW8015 Mod

Analytical Method: Chloride by EPA 300

DTH

Tech:

Seq Number: 3120700

DTH Analyst:

o-Terphenyl

Prep Method: SW8015P

03.24.20 07.04

70-135

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.1	50.1		mg/kg	03.24.20 07.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	98.1	50.1		mg/kg	03.24.20 07.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	03.24.20 07.04	U	1
Total GRO-DRO	PHC628	98.1	50.1		mg/kg	03.24.20 07.04		1
Total TPH	PHC635	98.1	50.1		mg/kg	03.24.20 07.04		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	76	%	70-135	03.24.20 07.04		

81



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: Matrix: **FS11** Soil

Lab Sample Id: 656468-002 Date Collected: 03.20.20 11.41 Date Received:03.23.20 08.25

Sample Depth: 2 - 3 ft

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

% Moisture:

Tech: MAB Analyst: MAB 03.23.20 10.35 Basis: Wet Weight Date Prep:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.23.20 12.33	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.23.20 12.33	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.23.20 12.33	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.23.20 12.33	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.23.20 12.33	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.23.20 12.33	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.23.20 12.33	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	92	%	70-130	03.23.20 12.33		
1,4-Difluorobenzene		540-36-3	108	%	70-130	03.23.20 12.33		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: FS12

Matrix:

Date Received:03.23.20 08.25

Lab Sample Id: 656468-003

Date Collected: 03.20.20 14.22

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:
Analyst:

MAB MAB

Date Prep:

03.23.20 11.09

Basis:

Wet Weight

Seq Number: 3120631

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 190
 10.1
 mg/kg
 03.23.20 12.10
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep: 03.23.20 17.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2		mg/kg	03.24.20 07.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	64.2	50.2		mg/kg	03.24.20 07.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	03.24.20 07.24	U	1
Total GRO-DRO	PHC628	64.2	50.2		mg/kg	03.24.20 07.24		1
Total TPH	PHC635	64.2	50.2		mg/kg	03.24.20 07.24		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	76	%	70-135	03.24.20 07.24		
o-Terphenyl		84-15-1	80	%	70-135	03.24.20 07.24		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS12

Matrix: Soil

Date Received:03.23.20 08.25

Lab Sample Id: 656468-003 Date

Date Collected: 03.20.20 14.22

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B % Moisture:

Tech: MAB

Analyst:

MAB Date Prep:

03.23.20 10.35 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.23.20 13.34	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.23.20 13.34	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.23.20 13.34	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	03.23.20 13.34	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.23.20 13.34	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	03.23.20 13.34	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.23.20 13.34	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	95	%	70-130	03.23.20 13.34		
1,4-Difluorobenzene		540-36-3	98	%	70-130	03.23.20 13.34		



# 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.

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

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

E300P

E300P

03.23.20

Prep Method:

Prep Method:

Date Prep:



### **QC Summary** 656468

### LT Environmental, Inc.

RDX 17-14

Analytical Method: Chloride by EPA 300

Seq Number: 3120631 Matrix: Solid

7699512-1-BKS LCSD Sample Id: 7699512-1-BSD LCS Sample Id: MB Sample Id: 7699512-1-BLK

MR Spike LCS LCS Limits %RPD RPD Limit Units LCSD LCSD Analysis Flag **Parameter** Result Amount Result %Rec Date %Rec Result

03.23.20 11:36 Chloride <10.0 250 257 103 258 103 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300

E300P Prep Method: Seq Number: 3120631 Matrix: Soil 03.23.20 Date Prep:

Parent Sample Id: 656468-001 MS Sample Id: 656468-001 S MSD Sample Id: 656468-001 SD

MS MS %RPD RPD Limit Units Parent Spike **MSD MSD** Limits Analysis Flag **Parameter** Result Date Result Amount %Rec Result %Rec

Chloride 710 199 908 99 911 101 90-110 0 20 mg/kg 03.23.20 11:53

Analytical Method: Chloride by EPA 300

3120631 Matrix: Soil 03.23.20 Seq Number: Date Prep:

MSD Sample Id: 656472-006 SD 656472-006 S MS Sample Id: Parent Sample Id: 656472-006

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits **Analysis** Flag **Parameter** Result Date Result %Rec Amount Result %Rec Chloride 848 199 1040 96 1040 96 90-110 0 20 03.23.20 13:20 mg/kg

Analytical Method: TPH by SW8015 Mod

SW8015P Prep Method: 3120700 Matrix: Solid Seq Number: Date Prep: 03.23.20

7699591-1-BKS 7699591-1-BSD 7699591-1-BLK LCS Sample Id: LCSD Sample Id: MB Sample Id:

%RPD RPD Limit Units MB Spike LCS LCS Limits Analysis LCSD LCSD Flag **Parameter** Result %Rec Date Result Amount %Rec Result Gasoline Range Hydrocarbons (GRO) 878 88 70-135 9 03.24.20 00:20 < 50.0 1000 957 96 35 mg/kg 03.24.20 00:20 778 78 70-135 7 35 Diesel Range Organics (DRO) 1000 834 83 < 50.0 mg/kg

LCS MB MB LCS LCSD LCSD Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1-Chlorooctane 93 101 123 70-135 % 03.24.20 00:20 03.24.20 00:20 o-Terphenyl 102 104 113 70-135 %

Analytical Method: TPH by SW8015 Mod

Prep Method: Seq Number: 3120700 Matrix: Solid Date Prep: 03.23.20

MB Sample Id: 7699591-1-BLK

MB Units Analysis Flag **Parameter** Result Date 03.24.20 00:00 Motor Oil Range Hydrocarbons (MRO) < 50.0 mg/kg

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

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result = MS/LCS Result = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

SW8015P

Flag

Flag

SW8015P

03.23.20

SW5030B

SW5030B

Prep Method:



### **QC Summary** 656468

### LT Environmental, Inc.

RDX 17-14

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120700 Matrix: Soil Date Prep:

MS Sample Id: 656458-024 S MSD Sample Id: 656458-024 SD Parent Sample Id: 656458-024

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lin	nit Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	< 50.0	1000	857	86	838	84	70-135	2	35	mg/kg	03.24.20 01:21	
Diesel Range Organics (DRO)	< 50.0	1000	753	75	756	76	70-135	0	35	mg/kg	03.24.20 01:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		86		70-135	%	03.24.20 01:21
o-Terphenyl	84		84		70-135	%	03.24.20 01:21

Analytical Method: BTEX by EPA 8021B

Prep Method: Seq Number: 3120698 Matrix: Solid Date Prep: 03.23.20

LCS Sample Id: 7699586-1-BKS LCSD Sample Id: 7699586-1-BSD MB Sample Id: 7699586-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date
Benzene	< 0.00200	0.100	0.108	108	0.121	121	70-130	11	35	mg/kg	03.23.20 11:11
Toluene	< 0.00200	0.100	0.103	103	0.115	115	70-130	11	35	mg/kg	03.23.20 11:11
Ethylbenzene	< 0.00200	0.100	0.0968	97	0.108	108	71-129	11	35	mg/kg	03.23.20 11:11
m,p-Xylenes	< 0.00400	0.200	0.199	100	0.221	111	70-135	10	35	mg/kg	03.23.20 11:11
o-Xylene	< 0.00200	0.100	0.102	102	0.112	112	71-133	9	35	mg/kg	03.23.20 11:11

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	%	03.23.20 11:11
4-Bromofluorobenzene	95		97		95		70-130	%	03.23.20 11:11

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120698 Matrix: Soil Date Prep: 03.23.20 MS Sample Id: 656468-001 S MSD Sample Id: 656468-001 SD Parent Sample Id:

656468-001 Limits %RPD RPD Limit Units **Parent** Spike MS MS **MSD MSD** Analysis **Parameter** 

1 ul ulliovol	Result	Amount	Result	%Rec	Result	%Rec					Date	
Benzene	< 0.00198	0.0992	0.124	125	0.118	119	70-130	5	35	mg/kg	03.23.20 11:52	
Toluene	< 0.00198	0.0992	0.120	121	0.113	114	70-130	6	35	mg/kg	03.23.20 11:52	
Ethylbenzene	< 0.00198	0.0992	0.114	115	0.107	108	71-129	6	35	mg/kg	03.23.20 11:52	
m,p-Xylenes	< 0.00397	0.198	0.235	119	0.222	112	70-135	6	35	mg/kg	03.23.20 11:52	
o-Xylene	< 0.00198	0.0992	0.117	118	0.109	110	71-133	7	35	mg/kg	03.23.20 11:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		109		70-130	%	03.23.20 11:52
4-Bromofluorobenzene	93		95		70-130	%	03.23.20 11:52

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

[D] = 100\*(C-A) / BRPD = 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

Prep Method:

XENCO
LABORATORIES

Project Manager: Chris Mckisson

Address:

LT Environmental, Inc., 820 Megan Ave, Unit B

Address:

LT Environmental 820 Megan Ave, Unit B

Program: UST/PST
State of Project:

Work Order Comments

□RP □rownfields □RC

\* perfund

Bill to: (if different)

Company Name:

Chris Mckisson

Company Name:

# Chain of Custody

Work Order No: Light 4/08

www.xenco.com

of

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334

Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296

Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Revised Date 051418 Rev. 2018.1		Ö					
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Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Received	/: (Signature)	Relinquished by: (Signature)
	d terms and conditions ances beyond the control viously negotiated.	lotice: 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.	n client company in losses or expersion Xeno	itutes a valid purchase order fron t assume any responsibility for a d a charge of \$5 for each sample	shment of samples const t of samples and shall no applied to each project ar	document and relinqualiable only for the costarge of \$75.00 will be	otice: Signature of this f service. Xenco will be f Xenco. A minimum ch
Na Sr TI Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg	Mo Ni K Se Ag SiO2	Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti L	1 Al Sb As Ba CRA Sb As Ba	8RCRA 13PPM Texas 11 <i>F</i> TCLP / SPLP 6010: 8RCRA		otal 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	Circle Method(s) a
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			_	1141 3-3'	<i>σ</i>		FSII
compent	0.0	XX	- ×	1435 1-2	s 3/00/10		FSOS
Sample Comments	S	BTEX (I	Number TPH (EF	Time Depth	Matrix Sampled	ntification	Sample Identification
lab, if received by 4:30pm	lat		PA 80	Total Containers: 3	) N/A		Sample Custody Seals
TAT starts the day recevied by the	TAT st	_	15)	Correction Factor: ~ 0~ 7	NA	ils: Yes No	Cooler Custody Seals:
				Thermometer ID		3-	Temperature (°C):
			s	Wet Ice: (Yes) No	Temp Blank: (Yes) No	V	SAMPLE RECEIPT
				Due Date: カンタン	Jeremy Hill		Sampler's Name:
				Rush: 24 hr	3	118E-078	P.O. Number:
				Routine []	1	110068480	Project Number:
Work Order Notes		ANALYSIS REQUEST		Turn Around	17-14	ROX 17	Project Name:
Other:	Deliverables: EDD ADaPT		om, cmckisson	Email: Jhill@ltenv.com, cmckisson@ltenv.com		970-285-9985	Phone:
RP U≱vel IV	Reporting:Level II	Rifle, CO 81650 Repo		City, State ZIP:		Rifle, CO 81650	City, State ZIP:

### **XENCO Laboratories**

# Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.23.2020 08.25.00 AM

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

Work Order #: 656468

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 conta	iner/ 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 relinquish	ned/ received?	Yes	
#10 Chain of Custody agrees with sample I	abels/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 headsp	pace?	N/A	

Must be completed fo	r after-hours deliver	y of samples	prior to placin	g in the refrigerator

PH Device/Lot#:

Analyst:

Checklist completed by:

Elizabeth McClellan

Checklist reviewed by: Jessica Warner

Date: <u>03.24.2020</u>

Date: 03.23.2020

# **Analytical Report 656473**

for

LT Environmental, Inc.

**Project Manager: Chris McKisson** 

**RDX 17-14** 

034820011

25-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)



25-MAR-20

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

Reference: XENCO Report No(s): 656473

**RDX 17-14** Project Address:

### 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) 656473. 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. 656473 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vramer

Project Manager

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

Certified and approved by numerous States and Agencies.

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# **Sample Cross Reference 656473**

# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
SW02	S	03-20-20 09:06	0 - 4 ft	656473-001
FS06	S	03-20-20 14:32	1 - 2 ft	656473-002
FS07	S	03-20-20 10:19	0.3 - 1.0 ft	656473-003
FS08	S	03-20-20 10:23	1 - 2.0 ft	656473-004
FS09	S	03-20-20 14:29	3 - 4 ft	656473-005
SW04	S	03-20-20 11:26	0.3 - 4 ft	656473-006
SW05	S	03-20-20 11:35	0.3 - 3 ft	656473-007
FS13	S	03-20-20 11:49	2 - 3 ft	656473-008

# **CASE NARRATIVE**

Client Name: LT Environmental, Inc.

Project Name: RDX 17-14

 Project ID:
 034820011
 Report Date:
 25-MAR-20

 Work Order Number(s):
 656473
 Date Received:
 03/23/2020

### Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3120698 BTEX by EPA 8021B

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

# Received by OCD: 7/27/2023 1:36:47 PM XENCO LABORATORIES

**Certificate of Analysis Summary 656473** 

LT Environmental, Inc., Arvada, CO Project Name: RDX 17-14

**Date Received in Lab:** Mon Mar-23-20 08:25 am

**Report Date:** 25-MAR-20 **Project Manager:** Jessica Kramer

Project Id: 034820011 Contact: Chris McKisson

**Project Location:** 

	Lab Id:	656473-001		656473-002		656473-003		656473-004		656473-005		656473-006		
4 7 . 5 . 7	Field Id:	SW02	2	FS06		FS07		FS08		FS09		SW04	1	
Analysis Requested	Depth:	0-4 ft		1-2 ft		0.3-1.0 ft		1-2.0 ft		3-4 ft		0.3-4 ft		
	Matrix:	SOIL												
	Sampled:	Mar-20-20 09:06		Mar-20-20 14:32		Mar-20-20 10:19		Mar-20-20 10:23		Mar-20-20 14:29		Mar-20-20 11:26		
BTEX by EPA 8021B	Extracted:	Mar-23-20	Mar-23-20 10:35		Mar-23-20 10:35									
	Analyzed:	Mar-23-20	Mar-23-20 16:53		Mar-23-20 17:14		Mar-23-20 16:36		Mar-23-20 17:55		Mar-23-20 18:15		Mar-23-20 18:35	
	Units/RL:	mg/kg	RL											
Benzene		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00198	0.00198	< 0.00200	0.00200	
Toluene		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00198	0.00198	< 0.00200	0.00200	
Ethylbenzene		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00198	0.00198	< 0.00200	0.00200	
m,p-Xylenes		< 0.00396	0.00396	< 0.00398	0.00398	< 0.00398	0.00398	< 0.00403	0.00403	< 0.00396	0.00396	< 0.00401	0.00401	
o-Xylene		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00198	0.00198	< 0.00200	0.00200	
Xylenes, Total		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00198	0.00198	< 0.00200	0.00200	
Total BTEX		< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00202	0.00202	< 0.00198	0.00198	< 0.00200	0.00200	
Chloride by EPA 300	Extracted:	Mar-23-20	11:09	Mar-23-20 11:09		Mar-23-20 11:09		Mar-23-20 11:09		Mar-23-20 11:09		Mar-23-20	11:09	
	Analyzed:	Mar-23-20	13:32	Mar-23-20 13:39		Mar-23-20 13:57		Mar-23-20 14:03		Mar-23-20 14:09		Mar-23-20 14:15		
	Units/RL:	mg/kg	RL											
Chloride	·	343	49.7	212	10.1	209	10.0	399	10.1	499	9.94	136	9.98	
TPH by SW8015 Mod	Extracted:	Mar-23-20	17:30	Mar-23-20 17:30										
	Analyzed:	Mar-24-20	03:22	Mar-24-20 03:42		Mar-24-20 06:24		Mar-24-20 05:23		Mar-24-20 05:44		Mar-24-20 06:03		
	Units/RL:	mg/kg	RL											
Gasoline Range Hydrocarbons (GRO)		< 50.0	50.0	< 50.0	50.0	<126	126	< 50.1	50.1	< 50.0	50.0	<49.8	49.8	
Diesel Range Organics (DRO)		160	50.0	< 50.0	50.0	3280	251	155	50.1	117	50.0	263	49.8	
Motor Oil Range Hydrocarbons (MRO)		< 50.0	50.0	< 50.0	50.0	569	251	< 50.1	50.1	< 50.0	50.0	<49.8	49.8	
Total GRO-DRO		160	50.0	< 50.0	50.0	3280	126	155	50.1	117	50.0	263	49.8	
Total TPH		160	50.0	<50.0	50.0	3850	126	155	50.1	117	50.0	263	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.

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Version: 1.%

Jessica Kramer Project Manager

fession Weamer



**Certificate of Analysis Summary 656473** 

LT Environmental, Inc., Arvada, CO Project Name: RDX 17-14

**Date Received in Lab:** Mon Mar-23-20 08:25 am

**Report Date:** 25-MAR-20 **Project Manager:** Jessica Kramer

Project Id: 034820011 Contact: Chris McKisson

**Project Location:** 

Analusia Domisetad	Lab Id:	656473-007	656473-008		
	Field Id:	SW05	FS13		
Analysis Requested	Depth:	0.3-3 ft	2-3 ft		
	Matrix:	SOIL	SOIL		
	Sampled:	Mar-20-20 11:35	Mar-20-20 11:49		
BTEX by EPA 8021B	Extracted:	Mar-23-20 10:35	Mar-23-20 10:35		
	Analyzed:	Mar-23-20 18:56	Mar-23-20 19:16		
	Units/RL:	mg/kg RL	mg/kg RL		
Benzene		< 0.00201 0.00201	<0.00202 0.00202		
Toluene		< 0.00201 0.00201	<0.00202 0.00202		
Ethylbenzene		< 0.00201 0.00201	<0.00202 0.00202		
m,p-Xylenes		< 0.00402 0.00402	<0.00403 0.00403		
o-Xylene		< 0.00201 0.00201	<0.00202 0.00202		
Xylenes, Total		< 0.00201 0.00201	<0.00202 0.00202		
Total BTEX		< 0.00201 0.00201	<0.00202 0.00202		
Chloride by EPA 300	Extracted:	Mar-23-20 11:09	Mar-23-20 11:09		
	Analyzed:	Mar-23-20 14:21	Mar-23-20 14:27		
	Units/RL:	mg/kg RL	mg/kg RL		
Chloride		420 10.1	274 10.0		
TPH by SW8015 Mod	Extracted:	Mar-23-20 17:30	Mar-23-20 17:30		
	Analyzed:	Mar-24-20 06:44	Mar-24-20 07:04		
	Units/RL:	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<49.9 49.9		
Diesel Range Organics (DRO)		165 50.2	570 49.9		
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	77.1 49.9		
Total GRO-DRO		165 50.2	570 49.9		
Total TPH		165 50.2	647 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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Version: 1.%

Jessica Kramer Project Manager

fession Weamer



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **SW02**  Matrix:

Result

343

Date Prep:

Cas Number

16887-00-6

Date Received:03.23.20 08.25

Lab Sample Id: 656473-001

Soil Date Collected: 03.20.20 09.06

Sample Depth: 0 - 4 ft

**Analysis Date** 

03.23.20 13.32

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

MAB

RL

49.7

Wet Weight

Analyst:

Parameter

Chloride

MAB Seq Number: 3120631 Date Prep: 03.23.20 11.09 Basis:

Units

mg/kg

Dil

5

Flag

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

03.23.20 17.30 Basis:

% Moisture:

Wet Weight

DTH Analyst: Seq Number: 3120748

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	03.24.20 03.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	160	50.0		mg/kg	03.24.20 03.22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	03.24.20 03.22	U	1
Total GRO-DRO	PHC628	160	50.0		mg/kg	03.24.20 03.22		1
Total TPH	PHC635	160	50.0		mg/kg	03.24.20 03.22		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	110	%	70-135	03.24.20 03.22		
o-Terphenyl		84-15-1	114	%	70-135	03.24.20 03.22		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: **SW02** 

Date Received:03.23.20 08.25

Lab Sample Id: 656473-001 Date Collected: 03.20.20 09.06

Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

MAB

Prep Method: SW5030B

Tech: MAB

Date Prep:

Matrix:

% Moisture: 03.23.20 10.35 Basis:

Wet Weight

Analyst: Seq Number: 3120698

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	03.23.20 16.53	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	03.23.20 16.53	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	03.23.20 16.53	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396		mg/kg	03.23.20 16.53	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	03.23.20 16.53	U	1
Xylenes, Total	1330-20-7	< 0.00198	0.00198		mg/kg	03.23.20 16.53	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	03.23.20 16.53	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	103	%	70-130	03.23.20 16.53		
4-Bromofluorobenzene		460-00-4	98	%	70-130	03.23.20 16.53		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS06

Matrix:

Soil

Date Received:03.23.20 08.25

Lab Sample Id: 656473-002

Date Collected: 03.20.20 14.32

Sample Depth: 1 - 2 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

Tech:
Analyst:

MAB MAB

Date Prep:

03.23.20 11.09

Basis:

Wet Weight

Seq Number: 3120631

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 212
 10.1
 mg/kg
 03.23.20 13.39
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: Analyst: DTH DTH

Date Prep:

03.23.20 17.30

Basis:

% Moisture:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	03.24.20 03.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	03.24.20 03.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	03.24.20 03.42	U	1
Total GRO-DRO	PHC628	< 50.0	50.0		mg/kg	03.24.20 03.42	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	03.24.20 03.42	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	109	%	70-135	03.24.20 03.42		
o-Terphenyl		84-15-1	112	%	70-135	03.24.20 03.42		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS06 Matrix: Soil

Date Received:03.23.20 08.25

Lab Sample Id: 656473-002 Date Collected: 03.20.20 14.32

Sample Depth: 1 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.23.20 10.35

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.23.20 17.14	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.23.20 17.14	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.23.20 17.14	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.23.20 17.14	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.23.20 17.14	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.23.20 17.14	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.23.20 17.14	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	99	%	70-130	03.23.20 17.14		
1,4-Difluorobenzene		540-36-3	109	%	70-130	03.23.20 17.14		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

03.23.20 11.09

Sample Id: FS07

S07

Matrix: Soil

Date Received:03.23.20 08.25

Lab Sample Id: 656473-003

Date Collected: 03.20.20 10.19

Sample Depth: 0.3 - 1.0 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

Tech: Analyst: MAB MAB

Date Prep:

Basis:

Wet Weight

Seq Number: 3120631

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 209
 10.0
 mg/kg
 03.23.20 13.57
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: Analyst: DTH DTH

Date Prep: 03.23.20 17.30

% Moisture: Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<126	126		mg/kg	03.24.20 06.24	U	5
Diesel Range Organics (DRO)	C10C28DRO	3280	251		mg/kg	03.24.20 06.24		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	569	251		mg/kg	03.24.20 06.24		5
Total GRO-DRO	PHC628	3280	126		mg/kg	03.24.20 06.24		5
Total TPH	PHC635	3850	126		mg/kg	03.24.20 06.24		5
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	111	%	70-135	03.24.20 06.24		
o-Terphenyl		84-15-1	115	%	70-135	03.24.20 06.24		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **FS07** 

Matrix: Soil

Date Received:03.23.20 08.25

Lab Sample Id: 656473-003

Date Collected: 03.20.20 10.19

Sample Depth: 0.3 - 1.0 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

70-130

Analyst: MAB

Seq Number: 3120698

4-Bromofluorobenzene

Date Prep: 03.23.20 10.35

96

Basis: Wet Weight

03.23.20 16.36

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.23.20 16.36	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.23.20 16.36	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.23.20 16.36	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.23.20 16.36	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.23.20 16.36	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.23.20 16.36	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.23.20 16.36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	111	%	70-130	03.23.20 16.36		

460-00-4



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS08

Matrix:

Soil

Date Received:03.23.20 08.25

Lab Sample Id: 656473-004

Date Collected: 03.20.20 10.23

Sample Depth: 1 - 2.0 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:
Analyst:

MAB MAB

Date Prep:

03.23.20 11.09

Basis:

Wet Weight

Seq Number: 3120631

**.** 

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 399
 10.1
 mg/kg
 03.23.20 14.03
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep: 03.23.20 17.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1		mg/kg	03.24.20 05.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	155	50.1		mg/kg	03.24.20 05.23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	03.24.20 05.23	U	1
Total GRO-DRO	PHC628	155	50.1		mg/kg	03.24.20 05.23		1
Total TPH	PHC635	155	50.1		mg/kg	03.24.20 05.23		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	105	%	70-135	03.24.20 05.23		
o-Terphenyl		84-15-1	107	%	70-135	03.24.20 05.23		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: FS08 Matrix:

Date Received:03.23.20 08.25

Lab Sample Id: 656473-004 Date Collected: 03.20.20 10.23

Sample Depth: 1 - 2.0 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.23.20 10.35

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	03.23.20 17.55	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	03.23.20 17.55	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	03.23.20 17.55	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	03.23.20 17.55	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	03.23.20 17.55	U	1
Xylenes, Total	1330-20-7	< 0.00202	0.00202		mg/kg	03.23.20 17.55	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	03.23.20 17.55	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	75	%	70-130	03.23.20 17.55		
1,4-Difluorobenzene		540-36-3	109	%	70-130	03.23.20 17.55		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **FS09** Lab Sample Id: 656473-005

Matrix: Soil Date Received:03.23.20 08.25

Date Collected: 03.20.20 14.29

Sample Depth: 3 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

Analyst:

MAB MAB

Date Prep:

03.23.20 11.09

Basis:

Wet Weight

Seq Number: 3120631

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 03.23.20 14.09 499 9.94 mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst:

DTH DTH

Date Prep:

03.23.20 17.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	03.24.20 05.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	117	50.0		mg/kg	03.24.20 05.44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	03.24.20 05.44	U	1
Total GRO-DRO	PHC628	117	50.0		mg/kg	03.24.20 05.44		1
Total TPH	PHC635	117	50.0		mg/kg	03.24.20 05.44		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	111	%	70-135	03.24.20 05.44		
o-Terphenyl		84-15-1	113	%	70-135	03.24.20 05.44		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS09 Matrix: So

ix: Soil Date Received:03.23.20 08.25

Lab Sample Id: 656473-005 Date Collected: 03.20.20 14.29

Sample Depth: 3 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.23.20 10.35

Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	03.23.20 18.15	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	03.23.20 18.15	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	03.23.20 18.15	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396		mg/kg	03.23.20 18.15	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	03.23.20 18.15	U	1
Xylenes, Total	1330-20-7	< 0.00198	0.00198		mg/kg	03.23.20 18.15	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	03.23.20 18.15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	108	%	70-130	03.23.20 18.15		
4-Bromofluorobenzene		460-00-4	104	%	70-130	03.23.20 18.15		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: **SW04**  Matrix:

Date Received:03.23.20 08.25

Lab Sample Id: 656473-006

Date Collected: 03.20.20 11.26

Sample Depth: 0.3 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

MAB

Wet Weight

Analyst:

MAB

Date Prep:

03.23.20 11.09

Basis:

Seq Number: 3120631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	136	9.98	mg/kg	03.23.20 14.15		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

DTH Analyst:

03.23.20 17.30 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	03.24.20 06.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	263	49.8		mg/kg	03.24.20 06.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	03.24.20 06.03	U	1
Total GRO-DRO	PHC628	263	49.8		mg/kg	03.24.20 06.03		1
Total TPH	PHC635	263	49.8		mg/kg	03.24.20 06.03		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	121	%	70-135	03.24.20 06.03		
o-Terphenyl		84-15-1	127	%	70-135	03.24.20 06.03		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: SW04 Matrix:

Date Received:03.23.20 08.25

Lab Sample Id: 656473-006 Date Collected: 03.20.20 11.26

Sample Depth: 0.3 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.23.20 10.35

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.23.20 18.35	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.23.20 18.35	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.23.20 18.35	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	03.23.20 18.35	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.23.20 18.35	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	03.23.20 18.35	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.23.20 18.35	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	109	%	70-130	03.23.20 18.35		
4-Bromofluorobenzene		460-00-4	92	%	70-130	03.23.20 18.35		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **SW05**  Matrix:

Date Received:03.23.20 08.25

Lab Sample Id: 656473-007

Soil Date Collected: 03.20.20 11.35

Sample Depth: 0.3 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: Analyst: MAB MAB

Date Prep:

Basis: 03.23.20 11.09

% Moisture:

Wet Weight

Seq Number: 3120631

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 10.1 03.23.20 14.21 420 mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst:

DTH DTH

03.23.20 17.30 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.2	50.2		mg/kg	03.24.20 06.44	U	1
Diesel Range Organics (DRO)	C10C28DRO	165	50.2		mg/kg	03.24.20 06.44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	03.24.20 06.44	U	1
Total GRO-DRO	PHC628	165	50.2		mg/kg	03.24.20 06.44		1
Total TPH	PHC635	165	50.2		mg/kg	03.24.20 06.44		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	119	%	70-135	03.24.20 06.44		
o-Terphenyl		84-15-1	121	%	70-135	03.24.20 06.44		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: SW05

Analytical Method: BTEX by EPA 8021B

Lab Sample Id: 656473-007

Matrix: Soil

Date Received:03.23.20 08.25

Date Collected: 03.20.20 11.35

Sample Depth: 0.3 - 3 ft

Prep Method: SW5030B

% Moisture:

Tech: MAB

Analyst: MAB

Date Prep: 03.23.20 10.35

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	03.23.20 18.56	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	03.23.20 18.56	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	03.23.20 18.56	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	03.23.20 18.56	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	03.23.20 18.56	U	1
Xylenes, Total	1330-20-7	< 0.00201	0.00201		mg/kg	03.23.20 18.56	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	03.23.20 18.56	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	93	%	70-130	03.23.20 18.56		
1,4-Difluorobenzene		540-36-3	107	%	70-130	03.23.20 18.56		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: **FS13** 

Matrix:

Date Received:03.23.20 08.25

Lab Sample Id: 656473-008

Date Collected: 03.20.20 11.49

Sample Depth: 2 - 3 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB MAB

Date Prep:

03.23.20 11.09

Basis:

Wet Weight

Seq Number: 3120631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	274	10.0	mg/kg	03.23.20 14.27		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

DTH Analyst:

03.23.20 17.30 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	03.24.20 07.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	570	49.9		mg/kg	03.24.20 07.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	77.1	49.9		mg/kg	03.24.20 07.04		1
Total GRO-DRO	PHC628	570	49.9		mg/kg	03.24.20 07.04		1
Total TPH	PHC635	647	49.9		mg/kg	03.24.20 07.04		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	108	%	70-135	03.24.20 07.04		
o-Terphenyl		84-15-1	109	%	70-135	03.24.20 07.04		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS13

Matrix: Soil

Date Received:03.23.20 08.25

Lab Sample Id: 656473-008

Date Collected: 03.20.20 11.49

Sample Depth: 2 - 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MA

MAB

% Moisture:

Analyst: MAB

Date Prep:

03.23.20 10.35

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	03.23.20 19.16	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	03.23.20 19.16	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	03.23.20 19.16	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	03.23.20 19.16	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	03.23.20 19.16	U	1
Xylenes, Total	1330-20-7	< 0.00202	0.00202		mg/kg	03.23.20 19.16	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	03.23.20 19.16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	104	%	70-130	03.23.20 19.16		
4-Bromofluorobenzene		460-00-4	92	%	70-130	03.23.20 19.16		



# **Flagging Criteria**

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

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

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.



Seq Number:

**Parameter** 

Chloride

#### **QC Summary** 656473

## LT Environmental, Inc.

RDX 17-14

Analytical Method: Chloride by EPA 300

3120631 Matrix: Solid

Spike

250

Amount

LCS Sample Id: MB Sample Id: 7699512-1-BLK

MR

Result

Result

<10.0

7699512-1-BKS

LCSD

Result

258

LCSD

%Rec

103

E300P Prep Method:

20

Date Prep: 03.23.20 LCSD Sample Id: 7699512-1-BSD

%RPD RPD Limit Units Analysis Flag Date

03.23.20 11:36 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3120631

Matrix: Soil

MS Sample Id: 656468-001 S

LCS

103

%Rec

E300P Prep Method: Date Prep:

03.23.20

Parent Sample Id: 656468-001 MSD Sample Id: 656468-001 SD

LCS

257

Result

MS MS Parent Spike **MSD Parameter** 

Amount

**MSD** Limits Result %Rec Result %Rec

%RPD RPD Limit Units

Analysis Flag Date

Flag

Flag

Flag

Chloride 710 199 908 99 911 101 90-110 0 20 mg/kg 03.23.20 11:53

Analytical Method: Chloride by EPA 300

3120631 Seq Number:

Matrix: Soil

Limits

90-110

0

E300P

Prep Method: 03.23.20 Date Prep:

MS Sample Id: 656472-006 S Parent Sample Id: 656472-006

MSD Sample Id: 656472-006 SD

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis **Parameter** Result Date Result %Rec Amount Result %Rec 0 20 03.23.20 13:20 mg/kg

Chloride 848 199 1040 96 1040 96 90-110

Analytical Method: TPH by SW8015 Mod

3120748 Seq Number:

MB Sample Id:

7699618-1-BLK

MB

121

Matrix: Solid

Spike

Prep Method:

%RPD RPD Limit Units

SW8015P

Date Prep: 03.23.20

Limits

7699618-1-BKS LCS Sample Id:

LCSD

LCSD Sample Id: 7699618-1-BSD

**Parameter** Result %Rec Date Result Amount %Rec Result Gasoline Range Hydrocarbons (GRO) 859 86 834 70-135 3 < 50.0 1000 83 35 mg/kg 03.24.20 00:20 Diesel Range Organics (DRO) 1000 855 86 828 < 50.0 mg/kg

LCS

LCS

109

LCS

70-135 83

105

LCSD

3 35

70-135

03.24.20 00:20

Analysis

03.24.20 00:20

LCSD MB MB LCS LCSD Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1-Chlorooctane 131 128 125 70-135 % 03.24.20 00:20

Analytical Method: TPH by SW8015 Mod

Seq Number:

3120748

Matrix: Solid

Prep Method:

SW8015P

MB Sample Id: 7699618-1-BLK

**Parameter** 

o-Terphenyl

MB Result

Date Prep: 03.23.20

%

Analysis Date

Motor Oil Range Hydrocarbons (MRO)

< 50.0

Units mg/kg

03.24.20 00:00

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

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result = MS/LCS Result

B = Spike Added D = MSD/LCSD % Rec

MS = Matrix Spike

Final 1.000

= MSD/LCSD Result

Flag

Flag

03.23.20

Prep Method: SW5030B



Seq Number:

#### **QC Summary** 656473

## LT Environmental, Inc.

RDX 17-14

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P 3120748 Matrix: Soil Date Prep:

MS Sample Id: 656472-002 S MSD Sample Id: 656472-002 SD Parent Sample Id: 656472-002

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	< 50.0	999	996	100	1090	109	70-135	9	35	mg/kg	03.24.20 01:21	
Diesel Range Organics (DRO)	< 50.0	999	1040	104	1150	115	70-135	10	35	mø/kø	03.24.20 01:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	114		126		70-135	%	03.24.20 01:21
o-Terphenyl	113		122		70-135	%	03.24.20 01:21

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120698 Matrix: Solid Date Prep: 03.23.20 LCS Sample Id: 7699586-1-BKS LCSD Sample Id: 7699586-1-BSD MB Sample Id: 7699586-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00200	0.100	0.108	108	0.121	121	70-130	11	35	mg/kg	03.23.20 11:11
Toluene	< 0.00200	0.100	0.103	103	0.115	115	70-130	11	35	mg/kg	03.23.20 11:11
Ethylbenzene	< 0.00200	0.100	0.0968	97	0.108	108	71-129	11	35	mg/kg	03.23.20 11:11
m,p-Xylenes	< 0.00400	0.200	0.199	100	0.221	111	70-135	10	35	mg/kg	03.23.20 11:11
o-Xylene	< 0.00200	0.100	0.102	102	0.112	112	71-133	9	35	mg/kg	03.23.20 11:11

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	%	03.23.20 11:11
4-Bromofluorobenzene	95		97		95		70-130	%	03.23.20 11:11

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B Seq Number: 3120698 Matrix: Soil Date Prep: 03.23.20 MS Sample Id: 656468-001 S MSD Sample Id: 656468-001 SD Parent Sample Id: 656468-001

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00198	0.0992	0.124	125	0.118	119	70-130	5	35	mg/kg	03.23.20 11:52
Toluene	< 0.00198	0.0992	0.120	121	0.113	114	70-130	6	35	mg/kg	03.23.20 11:52
Ethylbenzene	< 0.00198	0.0992	0.114	115	0.107	108	71-129	6	35	mg/kg	03.23.20 11:52
m,p-Xylenes	< 0.00397	0.198	0.235	119	0.222	112	70-135	6	35	mg/kg	03.23.20 11:52
o-Xylene	< 0.00198	0.0992	0.117	118	0.109	110	71-133	7	35	mg/kg	03.23.20 11:52

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		109		70-130	%	03.23.20 11:52
4-Bromofluorobenzene	93		95		70-130	%	03.23.20 11:52

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

[D] = 100\*(C-A) / BRPD = 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 SpikeB = Spike Added D = MSD/LCSD % Rec

Company Name: Project Manager: \ddress: 820 Megan Ave, Unit B LT Environmental, Inc., Chris Mckisson ORATORIES OF

City, State ZIP:

Rifle, CO 81650

820 Megan Ave, Unit B

Address:

Company Name: Bill to: (if different)

LT Environmental Chris Mckisson

Program: UST/PST ☐RP ☐rownfields ☐RC

\$\_perfund

www.xenco.com

Work Order Comments

State of Project:

# Chain of Custody

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296

Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Work Order No:

ate LIF.	Kille, CO 81650		C	City, State ZIP:	Rifle, CO 81650	Reporting:Level II   PT/UST	TRP Ubvel IV
Phone: 9	970-285-9985		Email: Jh	nill@ltenv.com	Email: Jhill@ltenv.com, cmckisson@ltenv.com		
Project Name:	17-14 XOS		Turn	Turn Around	ANA		
Project Number:	110068480		Routine	7	AWAL TO STREET OF STREET	JEST THE STATE OF	Work Order Notes
P.O. Number:	284-2813		Rush:				
Sampler's Name:	Jeremy Hill	H	Due Date:	te:			
SAMPLE RECEIPT	Ter	(Yes) No	Wet Ice:	Yes No			
Temperature (°C):	1.0		5 L	1	ers		
Received Intact:	(Yes) No	,	TUN 000		1)		
Cooler Custody Seals:	Yes (No N/A	Correcti	Correction Factor:	0.7	5)		
Sample Custody Seals:	Yes (No) N/A	Total C	Total Containers:	Ø	A 80°	ТАТ	TAT starts the day recevied by the
Sample Identification	ication Matrix	Date Sampled s	Time Sampled	Depth	TPH (EP		Sample Comments
tows	s	3/20/20		0-4	×		
FS06	s	1		1-21	-		Composite
FSO7	s			0.3-1.01			
F508	S	1	1003	1-2,01			
F509	S	1	1439	3-4'			
SWOH	S			0.3-4"			
Swas	S		1135 0,	0.3-3'			
1-50-13	S	1	1149	2-3' Y	* * * * * * * * * * * * * * * * * * * *		8
	S	/	1	\			
0.14	s	H					
Circle Method(s) a	Total 200.7 / 6010 200.8 / 6020:  Circle Method(s) and Metal(s) to be analyzed	8RCRA lyzed <b>TCLP</b>	RCRA 13PPM Texas 11 A	Texas 11 <b>010</b> : 8RCR	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn A Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag	g SiO2	Na Sr Ti Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Ho
service. Xenco will be liable Kenco. A minimum charge	ment and relinquishment of se only for the cost of sample of \$75.00 will be applied to e	samples constitute s and shall not ass ach project and a c	s a valid purchas ume any respons charge of \$5 for e	se order from cl sibility for any l each sample sul	service. Squarter or 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 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 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)	ignature)	Received by: (Signature	(Signature)		Date/Time Relinquished by: (Signature)	re) Received by: (Signature)	Date/Time
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ceive		-		1	٥		
Ke							Revised Date 051418 Rev. 2018.1

Revised Date 051418 Rev. 2018.1

# **XENCO Laboratories**

# Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 03.23.2020 08.25.00 AM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 656473

Temperature Measuring device used: T-NM-007

Sample Receipt Checklist	t	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 r	ofriaorator	

PH Device/Lot#

Checklist completed by:

Elizabeth McClellan

Checklist reviewed by:

Jessica Wamer Date: 03.23.2020

Date: 03.24.2020

# **Analytical Report 656558**

for

LT Environmental, Inc.

**Project Manager: Chris McKisson** 

**RDX 17-14** 

034820011

27-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)



27-MAR-20

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

Reference: XENCO Report No(s): 656558

**RDX 17-14** Project Address:

#### **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) 656558. 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. 656558 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vramer

Project Manager

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

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# **Sample Cross Reference 656558**

# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
FS10	S	03-23-20 09:41	4 ft	656558-001
FS14	S	03-23-20 10:20	4 ft	656558-002
FS15	S	03-23-20 10:24	4 ft	656558-003
FS16	S	03-23-20 10:28	4 ft	656558-004
FS17	S	03-23-20 10:32	4 ft	656558-005
FS18	S	03-23-20 10:37	4 ft	656558-006
FS19	S	03-23-20 10:42	4 ft	656558-007
FS20	S	03-23-20 11:26	4 ft	656558-008
FS21	S	03-23-20 11:29	4 ft	656558-009
FS22	S	03-23-20 11:33	4 ft	656558-010
FS23	S	03-23-20 11:36	4 ft	656558-011
FS01	S	03-23-20 12:19	4 ft	656558-012
FS02	S	03-23-20 12:21	4 ft	656558-013
FS03	S	03-23-20 12:27	4 ft	656558-014
FS04	S	03-23-20 12:30	4 ft	656558-015

# **CASE NARRATIVE**

Client Name: LT Environmental, Inc.

Project Name: RDX 17-14

 Project ID:
 034820011
 Report Date:
 27-MAR-20

 Work Order Number(s):
 656558
 Date Received:
 03/23/2020

# Sample receipt non conformances and comments:

## Sample receipt non conformances and comments per sample:

None

### **Analytical non conformances and comments:**

Batch: LBA-3120699 BTEX by EPA 8021B

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

Batch: LBA-3120724 BTEX by EPA 8021B

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

Batch: LBA-3120922 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by

re-analysis.

Samples affected are: 656558-015.

# Received by OCD: 7/27/2023 1:36:47 PM

Certificate of Analysis Summary 656558

LT Environmental, Inc., Arvada, CO

**Project Name: RDX 17-14** 

**Date Received in Lab:** Mon Mar-23-20 03:40 pm

**Report Date: 27-MAR-20** Project Manager: Jessica Kramer

**Project Id:** 034820011 **Contact:** Chris McKisson

**Project Location:** 

	Lab Id:	656558-	001	656558-	002	656558-0	003	656558-	004	656558-	005	656558-	006
A 7 . D T	Field Id:	FS10	)	FS14		FS15		FS16		FS17	,	FS18	
Analysis Requested	Depth:	4- ft		4- ft		4- ft		4- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL	,	SOIL		SOIL	,
	Sampled:	Mar-23-20	09:41	Mar-23-20	10:20	Mar-23-20	10:24	Mar-23-20 10:28		Mar-23-20 10:32		Mar-23-20	10:37
BTEX by EPA 8021B	Extracted:	Mar-23-20	Mar-23-20 18:00		18:00	Mar-23-20	18:00	Mar-23-20	18:00	Mar-23-20	Mar-23-20 18:00		18:00
	Analyzed:	Mar-24-20	04:47	Mar-24-20	05:08	Mar-24-20	05:28	Mar-24-20	05:49	Mar-23-20	21:15	Mar-23-20	21:35
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
Toluene		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
Ethylbenzene		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
m,p-Xylenes		< 0.00398	0.00398	< 0.00397	0.00397	< 0.00400	0.00400	< 0.00398	0.00398	< 0.00398	0.00398	< 0.00398	0.00398
o-Xylene		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
Xylenes, Total		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
Total BTEX		< 0.00199	0.00199	< 0.00198	0.00198	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
Chloride by EPA 300	Extracted:	Mar-24-20	10:00	Mar-24-20 10:00		Mar-24-20 10:00		Mar-24-20	10:00	Mar-24-20 10:00		Mar-24-20	10:00
	Analyzed:	Mar-24-20	11:41	Mar-24-20	11:59	Mar-24-20 12:18		Mar-24-20 12:24		Mar-24-20 12:30		Mar-24-20 12:36	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		572	9.94	188	9.88	441	10.1	575	10.1	299	10.1	424	9.94
TPH by SW8015 Mod	Extracted:	Mar-24-20	17:20	Mar-24-20	17:20	Mar-24-20	17:20	Mar-24-20	17:30	Mar-24-20	09:00	Mar-24-20	17:30
	Analyzed:	Mar-24-20	23:08	Mar-24-20	23:28	Mar-24-20	23:48	Mar-25-20	10:10	Mar-24-20	23:48	Mar-25-20	02:10
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		< 50.3	50.3	< 50.2	50.2	< 50.3	50.3	< 50.2	50.2	<49.8	49.8	<49.8	49.8
Diesel Range Organics (DRO)		52.2	50.3	248	50.2	506	50.3	89.4	50.2	307	49.8	133	49.8
Motor Oil Range Hydrocarbons (MRO)		< 50.3	50.3	< 50.2	50.2	74.9	50.3	< 50.2	50.2	<49.8	49.8	<49.8	49.8
Total GRO-DRO		52.2	50.3	248	50.2	506	50.3	89.4	50.2	307	49.8	133	49.8
Total TPH		52.2	50.3	248	50.2	581	50.3	89.4	50.2	307	49.8	133	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.

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Version: 1.%

Jessica Kramer Project Manager

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# Received by OCD: 7/27/2023 1:36:47 PM XENCO LABORATORIES

# Certificate of Analysis Summary 656558

LT Environmental, Inc., Arvada, CO Project Name: RDX 17-14

**Date Received in Lab:** Mon Mar-23-20 03:40 pm

**Report Date:** 27-MAR-20 **Project Manager:** Jessica Kramer

Project Id: 034820011 Contact: Chris McKisson

**Project Location:** 

	Lab Id:	656558-	007	656558-	008	656558-0	000	656558-	010	656558-	011	656558-0	012
	Field Id:	FS19		FS20		FS21		FS22		FS23		FS01	
Analysis Requested	Depth:	4- ft		4- ft		4- ft		4- ft		4- ft		4- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Mar-23-20	10:42	Mar-23-20	11:26	Mar-23-20	11:29	Mar-23-20	11:33	Mar-23-20 11:36		Mar-23-20	12:19
BTEX by EPA 8021B	Extracted:	Mar-23-20	Mar-23-20 18:00		18:00	Mar-23-20	18:00	Mar-23-20	18:00	Mar-23-20	18:00	Mar-23-20	18:00
	Analyzed:	Mar-23-20	21:55	Mar-23-20	22:16	Mar-23-20	22:36	Mar-23-20	22:57	Mar-23-20	23:17	Mar-23-20	23:37
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Toluene		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Ethylbenzene		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
m,p-Xylenes	Xylenes		0.00400	< 0.00398	0.00398	< 0.00399	0.00399	< 0.00398	0.00398	< 0.00400	0.00400	< 0.00400	0.00400
o-Xylene		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Xylenes, Total		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Total BTEX		< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00199	0.00199	< 0.00200	0.00200	< 0.00200	0.00200
Chloride by EPA 300	Extracted:	Mar-24-20	10:00	Mar-24-20	10:00	Mar-24-20	10:00	Mar-24-20	10:00	Mar-24-20	10:00	Mar-24-20	10:00
	Analyzed:	Mar-24-20	12:42	Mar-24-20	12:48	Mar-24-20 12:55		Mar-24-20 13:01		Mar-24-20 13:07		Mar-24-20 13:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		312	10.0	1570	49.9	525	9.98	1110	50.1	3000	49.0	824	10.0
TPH by SW8015 Mod	Extracted:	Mar-24-20	17:30	Mar-24-20	17:30	Mar-24-20	17:30	Mar-24-20	17:30	Mar-24-20	17:30	Mar-24-20	17:30
	Analyzed:	Mar-25-20	04:32	Mar-25-20	02:31	Mar-25-20	04:53	Mar-25-20	05:13	Mar-25-20	04:12	Mar-25-20	02:51
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		< 50.1	50.1	< 50.3	50.3	< 50.2	50.2	<49.9	49.9	<49.9	49.9	<49.9	49.9
Diesel Range Organics (DRO)		255	50.1	< 50.3	50.3	284	50.2	354	49.9	166	49.9	<49.9	49.9
Motor Oil Range Hydrocarbons (MRO)		< 50.1	50.1	< 50.3	50.3	< 50.2	50.2	55.7	49.9	<49.9	49.9	<49.9	49.9
Total GRO-DRO		255	50.1	< 50.3	50.3	284	50.2	354	49.9	166	49.9	<49.9	49.9
Total TPH		255	50.1	<50.3	50.3	284	50.2	410	49.9	166	49.9	<49.9	49.9

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Jessica Kramer Project Manager

fession Weamer

# Received by OCD: 7/27/2023 1:36:47 PM XENCO LABORATORIES

Certificate of Analysis Summary 656558

LT Environmental, Inc., Arvada, CO Project Name: RDX 17-14

**Date Received in Lab:** Mon Mar-23-20 03:40 pm

**Report Date:** 27-MAR-20 **Project Manager:** Jessica Kramer

Project Id: 034820011 Contact: Chris McKisson

**Project Location:** 

			1						
	Lab Id:	656558-0	)13	656558-0	)14	656558-0	)15		
Analysis Requested	Field Id:	FS02		FS03		FS04			
Analysis Requesieu	Depth:	4- ft		4- ft		4- ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Mar-23-20	Mar-23-20 12:21		12:27	Mar-23-20	12:30		
BTEX by EPA 8021B	Extracted:	Mar-23-20	18:00	Mar-23-20	18:00	Mar-23-20	18:00		
	Analyzed:	Mar-23-20	23:58	Mar-24-20	00:18	Mar-24-20	01:40		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00201	0.00201		
Toluene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00201	0.00201		
Ethylbenzene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00201	0.00201		
,p-Xylenes		< 0.00398	0.00398	< 0.00400	0.00400	< 0.00402	0.00402		
Xylene		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00201	0.00201		
Xylenes, Total		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00201	0.00201		
Total BTEX		< 0.00199	0.00199	< 0.00200	0.00200	< 0.00201	0.00201		
Chloride by EPA 300	Extracted:	Mar-24-20	10:00	Mar-24-20	10:00	Mar-24-20	10:00		
	Analyzed:	Mar-24-20	13:44	Mar-24-20	13:50	Mar-24-20	13:56		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		307	9.96	1470	49.4	7710	50.2		
TPH by SW8015 Mod	Extracted:	Mar-24-20	17:30	Mar-24-20	17:30	Mar-24-20	17:30		
	Analyzed:	Mar-25-20	03:11	Mar-25-20	03:31	Mar-25-20	03:52		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		< 50.3	50.3	< 50.2	50.2	< 50.2	50.2		
Diesel Range Organics (DRO)		<50.3	50.3	<50.2	50.2	<50.2	50.2		
Motor Oil Range Hydrocarbons (MRO)		<50.3	50.3	< 50.2	50.2	< 50.2	50.2		
Total GRO-DRO		<50.3	50.3	< 50.2	50.2	< 50.2	50.2		
Total TPH		< 50.3	50.3	< 50.2	50.2	< 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.

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Version: 1.%

Jessica Kramer Project Manager

fession Weamer



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS10

Matrix:

Soil

Date Received:03.23.20 15.40

Lab Sample Id: 656558-001

Date Collected: 03.23.20 09.41

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB MAB

Date Prep:

03.24.20 10.00

Basis:

Wet Weight

Seq Number: 3120845

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 572
 9.94
 mg/kg
 03.24.20 11.41
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep:

03.24.20 17.20

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3		mg/kg	03.24.20 23.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	52.2	50.3		mg/kg	03.24.20 23.08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.3	50.3		mg/kg	03.24.20 23.08	U	1
Total GRO-DRO	PHC628	52.2	50.3		mg/kg	03.24.20 23.08		1
Total TPH	PHC635	52.2	50.3		mg/kg	03.24.20 23.08		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	108	%	70-135	03.24.20 23.08		
o-Terphenyl		84-15-1	114	%	70-135	03.24.20 23.08		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: **FS10** 

Matrix:

Date Received:03.23.20 15.40

Lab Sample Id: 656558-001 Date Collected: 03.23.20 09.41

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

% Moisture:

Tech: MAB

MAB Analyst:

03.23.20 18.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.24.20 04.47	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.24.20 04.47	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.24.20 04.47	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.24.20 04.47	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.24.20 04.47	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.24.20 04.47	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.24.20 04.47	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	96	%	70-130	03.24.20 04.47		
1,4-Difluorobenzene		540-36-3	110	%	70-130	03.24.20 04.47		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: FS14

Matrix:

Date Received:03.23.20 15.40

Lab Sample Id: 656558-002 Date Collected: 03.23.20 10.20

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 03.24.20 10.00

% Moisture: Basis:

Wet Weight

Seq Number: 3120845

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 188
 9.88
 mg/kg
 03.24.20 11.59
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech:
Analyst:

DTH DTH

Date Prep: 03.24.20 17.20

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2		mg/kg	03.24.20 23.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	248	50.2		mg/kg	03.24.20 23.28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	03.24.20 23.28	U	1
Total GRO-DRO	PHC628	248	50.2		mg/kg	03.24.20 23.28		1
Total TPH	PHC635	248	50.2		mg/kg	03.24.20 23.28		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	109	%	70-135	03.24.20 23.28		
o-Terphenyl		84-15-1	116	%	70-135	03.24.20 23.28		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS14

Matrix: Soil

Date Received:03.23.20 15.40

Lab Sample Id: 656558-002

Date Collected: 03.23.20 10.20

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

70-130

Analyst: MAB

Date Prep: 03.23.20 18.00

94

Basis: Wet Weight

03.24.20 05.08

Seq Number: 3120699

4-Bromofluorobenzene

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	03.24.20 05.08	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	03.24.20 05.08	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	03.24.20 05.08	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	03.24.20 05.08	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	03.24.20 05.08	U	1
Xylenes, Total	1330-20-7	< 0.00198	0.00198		mg/kg	03.24.20 05.08	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	03.24.20 05.08	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	109	%	70-130	03.24.20 05.08		

460-00-4



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **FS15** 

Matrix:

Date Received:03.23.20 15.40

Lab Sample Id: 656558-003

Soil Date Collected: 03.23.20 10.24

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: Analyst: MAB MAB

Date Prep:

% Moisture: Basis: 03.24.20 10.00

Wet Weight

Seq Number: 3120845

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 441 10.1 03.24.20 12.18 mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

DTH Analyst:

03.24.20 17.20 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3		mg/kg	03.24.20 23.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	506	50.3		mg/kg	03.24.20 23.48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	74.9	50.3		mg/kg	03.24.20 23.48		1
Total GRO-DRO	PHC628	506	50.3		mg/kg	03.24.20 23.48		1
Total TPH	PHC635	581	50.3		mg/kg	03.24.20 23.48		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	110	%	70-135	03.24.20 23.48		
o-Terphenyl		84-15-1	119	%	70-135	03.24.20 23.48		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: FS15

Matrix:

Date Received:03.23.20 15.40

Lab Sample Id: 656558-003

Date Collected: 03.23.20 10.24

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech:

MAB

% Moisture:

Analyst: MAB

Date Prep: 03.23.20 18.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.24.20 05.28	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.24.20 05.28	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.24.20 05.28	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	03.24.20 05.28	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.24.20 05.28	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	03.24.20 05.28	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.24.20 05.28	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	95	%	70-130	03.24.20 05.28		
1,4-Difluorobenzene		540-36-3	111	%	70-130	03.24.20 05.28		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: **FS16** 

Matrix:

Date Received:03.23.20 15.40

Lab Sample Id: 656558-004

Date Collected: 03.23.20 10.28

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: Analyst: MAB MAB

Date Prep: 03.24.20 10.00 % Moisture: Basis:

Wet Weight

Seq Number: 3120845

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 10.1 03.24.20 12.24 575 mg/kg 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst:

DTH DTH

Date Prep:

03.24.20 17.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.2	50.2		mg/kg	03.25.20 10.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	89.4	50.2		mg/kg	03.25.20 10.10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	03.25.20 10.10	U	1
Total GRO-DRO	PHC628	89.4	50.2		mg/kg	03.25.20 10.10		1
Total TPH	PHC635	89.4	50.2		mg/kg	03.25.20 10.10		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	116	%	70-135	03.25.20 10.10		
o-Terphenyl		84-15-1	119	%	70-135	03.25.20 10.10		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: FS16 Matrix:

Date Received:03.23.20 15.40

Lab Sample Id: 656558-004 Date Collected: 03.23.20 10.28

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB Date Prep: 03.23.20 18.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.24.20 05.49	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.24.20 05.49	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.24.20 05.49	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.24.20 05.49	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.24.20 05.49	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.24.20 05.49	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.24.20 05.49	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	98	%	70-130	03.24.20 05.49		
1,4-Difluorobenzene		540-36-3	111	%	70-130	03.24.20 05.49		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: **FS17** 

Matrix:

Date Received:03.23.20 15.40

Lab Sample Id: 656558-005

Date Collected: 03.23.20 10.32

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

Parameter

Chloride

MAB MAB

Date Prep:

Basis: 03.24.20 10.00

03.24.20 12.30

Prep Method: SW8015P

Wet Weight

Analyst:

Seq Number: 3120845

299

Result

Cas Number

16887-00-6

Units **Analysis Date** 

mg/kg

Flag Dil 1

Analytical Method: TPH by SW8015 Mod

DTH

Tech: DTH Analyst:

03.24.20 09.00 Date Prep:

RL

10.1

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	03.24.20 23.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	307	49.8		mg/kg	03.24.20 23.48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	03.24.20 23.48	U	1
Total GRO-DRO	PHC628	307	49.8		mg/kg	03.24.20 23.48		1
Total TPH	PHC635	307	49.8		mg/kg	03.24.20 23.48		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	112	%	70-135	03.24.20 23.48		
o-Terphenyl		84-15-1	119	%	70-135	03.24.20 23.48		



Lab Sample Id: 656558-005

# **Certificate of Analytical Results 656558**

# LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: Matrix: **FS17** 

Date Received:03.23.20 15.40

Date Collected: 03.23.20 10.32

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

MAB

% Moisture:

Tech: MAB Analyst:

03.23.20 18.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.23.20 21.15	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.23.20 21.15	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.23.20 21.15	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.23.20 21.15	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.23.20 21.15	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.23.20 21.15	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.23.20 21.15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	116	%	70-130	03.23.20 21.15		
4-Bromofluorobenzene		460-00-4	93	%	70-130	03.23.20 21.15		



# LT Environmental, Inc., Arvada, CO

RDX 17-14

03.24.20 10.00

Sample Id: FS18

S18

Matrix: Soil

Date Received:03.23.20 15.40

Lab Sample Id: 656558-006

Date Collected: 03.23.20 10.37

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

Analyst:

MAB MAB

Date Prep:

% Moisture: Basis:

Wet Weight

Seq Number: 3120845

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 424
 9.94
 mg/kg
 03.24.20 12.36
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

03.25.20 02.10

70-135

% Moisture:

Tech:

DTH

Analyst: DTH

o-Terphenyl

Seq Number: 3120922

Date Prep: 03.24.20 17.30

119

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	03.25.20 02.10	U	1
Diesel Range Organics (DRO)	C10C28DRO	133	49.8		mg/kg	03.25.20 02.10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	03.25.20 02.10	U	1
Total GRO-DRO	PHC628	133	49.8		mg/kg	03.25.20 02.10		1
Total TPH	PHC635	133	49.8		mg/kg	03.25.20 02.10		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	110	%	70-135	03.25.20 02.10		

84-15-1



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

03.23.20 18.00

Sample Id: **FS18**  Matrix: Soil Date Received:03.23.20 15.40

Lab Sample Id: 656558-006 Date Collected: 03.23.20 10.37

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Basis:

Analyst:

MAB Date Prep:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.23.20 21.35	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.23.20 21.35	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.23.20 21.35	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.23.20 21.35	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.23.20 21.35	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.23.20 21.35	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.23.20 21.35	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	92	%	70-130	03.23.20 21.35		
1,4-Difluorobenzene		540-36-3	117	%	70-130	03.23.20 21.35		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **FS19** 

Matrix: Soil Date Received:03.23.20 15.40

Lab Sample Id: 656558-007

Date Collected: 03.23.20 10.42

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

% Moisture:

MAB Tech:

Analyst:

MAB

Date Prep: 03.24.20 10.00

10.0

Basis:

Wet Weight

Seq Number: 3120845

Parameter Cas Number 16887-00-6 Chloride

Result RL

312

Units 03.24.20 12.42 mg/kg

**Analysis Date** Flag Dil 1

Analytical Method: TPH by SW8015 Mod

Tech:

DTH

DTH Analyst:

Date Prep:

03.24.20 17.30

% Moisture:

Basis: Wet Weight

Prep Method: SW8015P

Parameter	Cas Number	Result	$\mathbf{RL}$		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1		mg/kg	03.25.20 04.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	255	50.1		mg/kg	03.25.20 04.32		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	03.25.20 04.32	U	1
Total GRO-DRO	PHC628	255	50.1		mg/kg	03.25.20 04.32		1
Total TPH	PHC635	255	50.1		mg/kg	03.25.20 04.32		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	119	%	70-135	03.25.20 04.32		
o-Terphenyl		84-15-1	127	%	70-135	03.25.20 04.32		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **FS19** 

Lab Sample Id: 656558-007

Analytical Method: BTEX by EPA 8021B

MAB

MAB

Matrix: Soil

Date Received:03.23.20 15.40

Date Collected: 03.23.20 10.42

Sample Depth: 4 ft

Prep Method: SW5030B

% Moisture:

03.23.20 18.00

Basis: Wet Weight

Seq Number: 3120724

Tech:

Analyst:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.23.20 21.55	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.23.20 21.55	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.23.20 21.55	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	03.23.20 21.55	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.23.20 21.55	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	03.23.20 21.55	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.23.20 21.55	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	93	%	70-130	03.23.20 21.55		
1,4-Difluorobenzene		540-36-3	117	%	70-130	03.23.20 21.55		

Date Prep:



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **FS20**  Matrix:

Date Received:03.23.20 15.40

Lab Sample Id: 656558-008

Soil Date Collected: 03.23.20 11.26

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB MAB

Date Prep:

03.24.20 10.00

Basis:

Wet Weight

Seq Number: 3120845

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 03.24.20 12.48 5 1570 49.9 mg/kg

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

DTH Analyst:

03.24.20 17.30 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3		mg/kg	03.25.20 02.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.3	50.3		mg/kg	03.25.20 02.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.3	50.3		mg/kg	03.25.20 02.31	U	1
Total GRO-DRO	PHC628	< 50.3	50.3		mg/kg	03.25.20 02.31	U	1
Total TPH	PHC635	<50.3	50.3		mg/kg	03.25.20 02.31	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	109	%	70-135	03.25.20 02.31		
o-Terphenyl		84-15-1	117	%	70-135	03.25.20 02.31		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS20 Matrix: Soil Date Received:03.23.20 15.40

Lab Sample Id: 656558-008 Date Collected: 03.23.20 11.26 Sample Depth: 4 ft

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

Tech: MAB % Moisture:

Analyst: MAB Date Prep: 03.23.20 18.00 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.23.20 22.16	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.23.20 22.16	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.23.20 22.16	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.23.20 22.16	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.23.20 22.16	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.23.20 22.16	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.23.20 22.16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	95	%	70-130	03.23.20 22.16		
1,4-Difluorobenzene		540-36-3	117	%	70-130	03.23.20 22.16		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS21

Matrix:

Soil

Date Received:03.23.20 15.40

Lab Sample Id: 656558-009

Date Collected: 03.23.20 11.29

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB MAB

Date Prep:

03.24.20 10.00

Basis:

Wet Weight

Seq Number: 3120845

....

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 525
 9.98
 mg/kg
 03.24.20 12.55
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

Analyst: DTH

Date Prep: 03.24.20 17.30

Basis: W

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2		mg/kg	03.25.20 04.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	284	50.2		mg/kg	03.25.20 04.53		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	03.25.20 04.53	U	1
Total GRO-DRO	PHC628	284	50.2		mg/kg	03.25.20 04.53		1
Total TPH	PHC635	284	50.2		mg/kg	03.25.20 04.53		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	114	%	70-135	03.25.20 04.53		
o-Terphenyl		84-15-1	122	%	70-135	03.25.20 04.53		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: Matrix: **FS21** Soil

> Date Collected: 03.23.20 11.29 Sample Depth: 4 ft

> > 03.23.20 18.00

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Date Received:03.23.20 15.40

Tech: MAB % Moisture:

MAB

Analyst:

Basis: Wet Weight

Seq Number: 3120724

Lab Sample Id: 656558-009

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.23.20 22.36	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.23.20 22.36	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.23.20 22.36	U	1
m,p-Xylenes	179601-23-1	< 0.00399	0.00399		mg/kg	03.23.20 22.36	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.23.20 22.36	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	03.23.20 22.36	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.23.20 22.36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	93	%	70-130	03.23.20 22.36		
1,4-Difluorobenzene		540-36-3	117	%	70-130	03.23.20 22.36		

Date Prep:



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **FS22** 

Matrix: Soil Date Received:03.23.20 15.40

Lab Sample Id: 656558-010

Date Collected: 03.23.20 11.33

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: Analyst: MAB

MAB

Date Prep: 03.24.20 10.00 % Moisture: Basis:

Wet Weight

Seq Number: 3120845

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 03.24.20 13.01 5 1110 50.1 mg/kg

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst:

DTH DTH

Date Prep:

03.24.20 17.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	03.25.20 05.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	354	49.9		mg/kg	03.25.20 05.13		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	55.7	49.9		mg/kg	03.25.20 05.13		1
Total GRO-DRO	PHC628	354	49.9		mg/kg	03.25.20 05.13		1
Total TPH	PHC635	410	49.9		mg/kg	03.25.20 05.13		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	111	%	70-135	03.25.20 05.13		
o-Terphenyl		84-15-1	115	%	70-135	03.25.20 05.13		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS22 Matrix: Soil

Date Received:03.23.20 15.40

Lab Sample Id: 656558-010

Date Collected: 03.23.20 11.33

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 03.23.20 18.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.23.20 22.57	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.23.20 22.57	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.23.20 22.57	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.23.20 22.57	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.23.20 22.57	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.23.20 22.57	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.23.20 22.57	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	117	%	70-130	03.23.20 22.57		
4-Bromofluorobenzene		460-00-4	92	%	70-130	03.23.20 22.57		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **FS23** 

Lab Sample Id: 656558-011

Analytical Method: Chloride by EPA 300

Date Received:03.23.20 15.40

Soil Date Collected: 03.23.20 11.36

Sample Depth: 4 ft

Prep Method: E300P

% Moisture:

MAB

Tech:

Analyst:

MAB

Date Prep:

Date Prep:

Matrix:

03.24.20 10.00

03.24.20 17.30

Basis:

Wet Weight

Seq Number: 3120845

Parameter Cas Number Result RLUnits **Analysis Date** Flag Dil 16887-00-6 Chloride 03.24.20 13.07 3000 49.0 mg/kg 5

Analytical Method: TPH by SW8015 Mod

DTH

Tech: Analyst:

DTH

Seq Number: 3120922

Prep Method: SW8015P

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	03.25.20 04.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	166	49.9		mg/kg	03.25.20 04.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	03.25.20 04.12	U	1
Total GRO-DRO	PHC628	166	49.9		mg/kg	03.25.20 04.12		1
Total TPH	PHC635	166	49.9		mg/kg	03.25.20 04.12		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	112	%	70-135	03.25.20 04.12		
o-Terphenyl		84-15-1	120	%	70-135	03.25.20 04.12		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **FS23** 

Lab Sample Id: 656558-011

MAB

MAB

Analytical Method: BTEX by EPA 8021B

Matrix: Soil

Date Received:03.23.20 15.40

Date Collected: 03.23.20 11.36

Sample Depth: 4 ft

Prep Method: SW5030B

% Moisture:

03.23.20 18.00

Basis: Wet Weight

Seq Number: 3120724

Tech:

Analyst:

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.23.20 23.17	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.23.20 23.17	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.23.20 23.17	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	03.23.20 23.17	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.23.20 23.17	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	03.23.20 23.17	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.23.20 23.17	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	95	%	70-130	03.23.20 23.17		
1,4-Difluorobenzene		540-36-3	118	%	70-130	03.23.20 23.17		

Date Prep:



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS01

Matrix:

Soil

Date Received:03.23.20 15.40

Lab Sample Id: 656558-012

Date Collected: 03.23.20 12.19

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB MAB

Date Prep: 03.24.20 10.00

Basis:

Wet Weight

Seq Number: 3120845

seq rumber. 3120043

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	824	10.0	mg/kg	03.24.20 13.38		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep: 03.24.20 17.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	03.25.20 02.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	03.25.20 02.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	03.25.20 02.51	U	1
Total GRO-DRO	PHC628	<49.9	49.9		mg/kg	03.25.20 02.51	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	03.25.20 02.51	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	111	%	70-135	03.25.20 02.51		
o-Terphenyl		84-15-1	120	%	70-135	03.25.20 02.51		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS01

Matrix: Soil

Date Received:03.23.20 15.40

Lab Sample Id: 656558-012 Date Collected: 03.23.20 12.19

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

03.23.20 18.00

Basis: Wet Weight

Seq Number: 3120724

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.23.20 23.37	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.23.20 23.37	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.23.20 23.37	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	03.23.20 23.37	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.23.20 23.37	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	03.23.20 23.37	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.23.20 23.37	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	116	%	70-130	03.23.20 23.37		
4-Bromofluorobenzene		460-00-4	94	%	70-130	03.23.20 23.37		

Date Prep:



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: FS02 Lab Sample Id: 656558-013

;

Date Received:03.23.20 15.40

Date Collected: 03.23.20 12.21

Matrix:

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: MAB

Analyst: MAB

Date Prep: 03.24.20 10.00

% Moisture: Basis:

Wet Weight

Seq Number: 3120845

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 307
 9.96
 mg/kg
 03.24.20 13.44
 1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech:

Analyst:

DTH DTH

Date Prep: 03.24.20 17.30

Basis: We

Wet Weight

Parameter	Cas Number	Result	RL	RL		Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3		mg/kg	03.25.20 03.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3		mg/kg	03.25.20 03.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.3	50.3		mg/kg	03.25.20 03.11	U	1
Total GRO-DRO	PHC628	< 50.3	50.3		mg/kg	03.25.20 03.11	U	1
Total TPH	PHC635	<50.3	50.3		mg/kg	03.25.20 03.11	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	110	%	70-135	03.25.20 03.11		
o-Terphenyl		84-15-1	118	%	70-135	03.25.20 03.11		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS02 Matrix: Soil Date Received:03.23.20 15.40

Lab Sample Id: 656558-013 Date Collected: 03.23.20 12.21 Sample Depth: 4 ft

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

Tech: MAB % Moisture:

Analyst: MAB Date Prep: 03.23.20 18.00 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.23.20 23.58	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.23.20 23.58	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.23.20 23.58	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.23.20 23.58	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.23.20 23.58	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.23.20 23.58	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.23.20 23.58	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	93	%	70-130	03.23.20 23.58		
1,4-Difluorobenzene		540-36-3	116	%	70-130	03.23.20 23.58		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **FS03** 

Lab Sample Id: 656558-014

Date Received:03.23.20 15.40

Soil Date Collected: 03.23.20 12.27

Sample Depth: 4 ft

Prep Method: E300P

% Moisture:

Analyst: MAB Seq Number: 3120845

Tech:

Date Prep:

Date Prep:

84-15-1

Matrix:

03.24.20 10.00

03.24.20 17.30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1470	49.4	mg/kg	03.24.20 13.50		5

Analytical Method: TPH by SW8015 Mod

Analytical Method: Chloride by EPA 300

MAB

DTH

Tech: Analyst:

o-Terphenyl

DTH

Seq Number: 3120922

Prep Method: SW8015P

03.25.20 03.31

70-135

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.2	50.2		mg/kg	03.25.20 03.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.2	50.2		mg/kg	03.25.20 03.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	03.25.20 03.31	U	1
Total GRO-DRO	PHC628	< 50.2	50.2		mg/kg	03.25.20 03.31	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	03.25.20 03.31	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	111	%	70-135	03.25.20 03.31		

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#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS03 Matrix: Soil Date Received:03.23.20 15.40

Lab Sample Id: 656558-014 Date Collected: 03.23.20 12.27 Sample Depth: 4 ft

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

Tech: MAB % Moisture:

Analyst: MAB Date Prep: 03.23.20 18.00 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.24.20 00.18	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.24.20 00.18	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.24.20 00.18	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400		mg/kg	03.24.20 00.18	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.24.20 00.18	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	03.24.20 00.18	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.24.20 00.18	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	91	%	70-130	03.24.20 00.18		
1,4-Difluorobenzene		540-36-3	116	%	70-130	03.24.20 00.18		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS04

Matrix:

Soil

03.24.20 10.00

Date Received:03.23.20 15.40

Lab Sample Id: 656558-015

Date Collected: 03.23.20 12.30

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB MAB

Date Prep:

Basis:

Wet Weight

Seq Number: 3120845

Seq 1 tumoeti = ==== t

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 7710
 50.2
 mg/kg
 03.24.20 13.56
 5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech:

DTH

% Moisture:

Analyst: DTH

Date Prep: 03.24.20 17.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.2	50.2		mg/kg	03.25.20 03.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.2	50.2		mg/kg	03.25.20 03.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	03.25.20 03.52	U	1
Total GRO-DRO	PHC628	< 50.2	50.2		mg/kg	03.25.20 03.52	U	1
Total TPH	PHC635	< 50.2	50.2		mg/kg	03.25.20 03.52	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	130	%	70-135	03.25.20 03.52		
o-Terphenyl		84-15-1	138	%	70-135	03.25.20 03.52	**	



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS04 Matrix: Soil

Date Received:03.23.20 15.40

Date Collected: 03.23.20 12.30

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

% Moisture:

Tech: MAB

Analyst:

Lab Sample Id: 656558-015

Date Prep: 03.23.20 18.00

Basis: Wet Weight

Seq Number: 3120724

MAB

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00201	0.00201		mg/kg	03.24.20 01.40	U	1
Toluene	108-88-3	< 0.00201	0.00201		mg/kg	03.24.20 01.40	U	1
Ethylbenzene	100-41-4	< 0.00201	0.00201		mg/kg	03.24.20 01.40	U	1
m,p-Xylenes	179601-23-1	< 0.00402	0.00402		mg/kg	03.24.20 01.40	U	1
o-Xylene	95-47-6	< 0.00201	0.00201		mg/kg	03.24.20 01.40	U	1
Xylenes, Total	1330-20-7	< 0.00201	0.00201		mg/kg	03.24.20 01.40	U	1
Total BTEX		< 0.00201	0.00201		mg/kg	03.24.20 01.40	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene		460-00-4	94	%	70-130	03.24.20 01.40		
1,4-Difluorobenzene		540-36-3	116	%	70-130	03.24.20 01.40		



# **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.

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

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.



Seq Number:

#### **QC Summary** 656558

#### LT Environmental, Inc.

RDX 17-14

Analytical Method: Chloride by EPA 300

3120845 Matrix: Solid

LCS Sample Id: 7699604-1-BKS MB Sample Id: 7699604-1-BLK

MR

E300P Prep Method:

Date Prep:

03.24.20

LCSD Sample Id: 7699604-1-BSD

Spike Limits %RPD RPD Limit Units LCSD LCSD Analysis Flag **Parameter** Result Amount Result %Rec Date %Rec Result

03.24.20 11:10 Chloride <10.0 250 262 105 262 105 90-110 0 20 mg/kg

LCS

Analytical Method: Chloride by EPA 300

Seq Number: 3120845

Matrix: Soil

Prep Method: Date Prep:

E300P

03.24.20

Parent Sample Id: 656558-001 MS Sample Id: 656558-001 S MSD Sample Id: 656558-001 SD

LCS

Spike MS MS %RPD RPD Limit Units Parent **MSD MSD** Limits Analysis Flag **Parameter** Result Date Result Amount %Rec Result %Rec

Chloride 572 200 778 103 773 101 90-110 20 mg/kg 03.24.20 11:47

Analytical Method: Chloride by EPA 300

Seq Number:

3120845

Matrix: Soil

Prep Method:

Date Prep:

E300P

03.24.20

Flag

Flag

MS Sample Id: 656558-011 S 656558-011 Parent Sample Id:

MS Parent Spike MS Limits Units Analysis **Parameter** Result Date Result %Rec Amount 03.24.20 13:13 Chloride 3000 200 3200 100 90-110 mg/kg 03.24.20 13:31 Chloride 3000 3210 105 90-110 200 mg/kg

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120790

MB Sample Id:

7699643-1-BLK

Matrix: Solid

LCS Sample Id:

7699643-1-BKS

Prep Method:

SW8015P

Date Prep: 03.24.20

LCSD Sample Id: 7699643-1-BSD

LCS LCS Limits %RPD RPD Limit Units MB Spike LCSD LCSD Analysis **Parameter** Result Amount Result %Rec Date Result %Rec 03.24.20 13:44 Gasoline Range Hydrocarbons (GRO) 1070 107 1030 70-135 4 < 50.0 1000 103 35 mg/kg 03.24.20 13:44 Diesel Range Organics (DRO) < 50.0 1000 1130 113 1090 109 70-135 4 35 mg/kg

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag Date %Rec Flag %Rec Flag 03.24.20 13:44 1-Chlorooctane 101 125 120 70-135 % 121 70-135 03.24.20 13:44 o-Terphenyl 104 126 %

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

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

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

Flag



#### QC Summary 656558

#### LT Environmental, Inc.

RDX 17-14

Analytical Method:TPH by SW8015 ModPrep Method:SW8015PSeq Number:3120791Matrix:SolidDate Prep:03.24.20

MB Sample Id: 7699645-1-BLK LCS Sample Id: 7699645-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	t Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	< 50.0	1000	1010	101	1050	105	70-135	4	35	mg/kg	03.24.20 13:44	
Diesel Range Organics (DRO)	< 50.0	1000	1100	110	1140	114	70-135	4	35	mg/kg	03.24.20 13:44	
	140	MD		aa T	CCC	- ~~	- 1.00	D 7	,	TT .*4	A 7	

MB MB LCS LCS LCSD LCSD Limits Units Analysis **Surrogate** Date %Rec Flag %Rec Flag %Rec Flag 1-Chlorooctane 99 124 128 70-135 % 03.24.20 13:44 o-Terphenyl 105 121 127 70-135 % 03.24.20 13:44

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Seq Number:3120922Matrix:SolidDate Prep:03.24.20MB Sample Id:7699702-1-BLKLCS Sample Id:7699702-1-BKSLCSD Sample Id:7699702-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date
Gasoline Range Hydrocarbons (GRO)	< 50.0	1000	984	98	992	99	70-135	1	35	mg/kg	03.25.20 09:25
Diesel Range Organics (DRO)	< 50.0	1000	1090	109	1090	109	70-135	0	35	mg/kg	03.25.20 09:25
Cumacata	MB	MB	L	CS 1	LCS	LCSI	D LCS	D I	Limits	Units	Analysis

**Surrogate** Flag Flag Date %Rec Flag %Rec %Rec 1-Chlorooctane 123 70-135 03.25.20 09:25 108 123 % o-Terphenyl 112 121 122 70-135 % 03.25.20 09:25

Analytical Method:TPH by SW8015 ModPrep Method:SW8015PSeq Number:3120925Matrix:SolidDate Prep:03.24.20

 Seq Number:
 3120925
 Matrix:
 Solid
 Date Prep:
 03.24.20

 MB Sample Id:
 7699704-1-BLK
 LCS Sample Id:
 7699704-1-BKS
 LCSD Sample Id:
 7699704-1-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	1020	102	1040	104	70-135	2	35	mg/kg	03.25.20 09:25	
Diesel Range Organics (DRO)	< 50.0	1000	1110	111	1120	112	70-135	1	35	mg/kg	03.25.20 09:25	
	3.4D	140	-	<b>0</b> 0 <b>T</b>	CC	- ~~	- I 00		,	<b>T</b> T •		

MB MB LCS LCS LCSD LCSD Limits Units Analysis Surrogate Flag Flag %Rec Date %Rec Flag %Rec 1-Chlorooctane 88 126 128 03.25.20 09:25 70-135 % 89 123 70-135 03.25.20 09:25 o-Terphenyl 122 %

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Seq Number: 3120790 Matrix: Solid Date Prep: 03.24.20

MB Sample Id: 7699643-1-BLK

MS/MSD Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference RPD = 200\*|(C-E)/(C+E)|LCS/LCSD Recovery [D] = 100\*(C)/[B]Log Difference Log(Sample Dupli

[D] = 100 \* (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample) 
$$\begin{split} LCS &= Laboratory \ Control \ Sample \\ A &= Parent \ Result \\ C &= MS/LCS \ Result \\ E &= MSD/LCSD \ Result \end{split}$$

MS = Matrix Spike B = Spike AddedD = MSD/LCSD % Rec

SW8015P

SW8015P

SW8015P

Flag

Prep Method:

Prep Method:



#### **QC Summary** 656558

#### LT Environmental, Inc.

RDX 17-14

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120791 Matrix: Solid Date Prep: 03.24.20

MB Sample Id: 7699645-1-BLK

MB Units **Analysis** Flag **Parameter** Result Date

Motor Oil Range Hydrocarbons (MRO) < 50.0 03.24.20 13:24 mg/kg

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120922 Matrix: Solid Date Prep: 03.24.20

MB Sample Id: 7699702-1-BLK

MB Units Analysis Flag **Parameter** Result Date

Motor Oil Range Hydrocarbons (MRO) < 50.0 03.25.20 14:56 mg/kg

Analytical Method: TPH by SW8015 Mod

Prep Method: Seq Number: 3120925 Matrix: Solid 03.24.20 Date Prep:

MB Sample Id: 7699704-1-BLK

MB Units Analysis Flag **Parameter** Result Date

03.25.20 14:56 Motor Oil Range Hydrocarbons (MRO) < 50.0 mg/kg

Analytical Method: TPH by SW8015 Mod

SW8015P Prep Method: Seq Number: 3120790 Matrix: Soil Date Prep: 03.24.20 MSD Sample Id: 656458-121 SD Parent Sample Id: MS Sample Id: 656458-121 S 656458-121

MS %RPD RPD Limit Units Parent Spike MS **MSD** MSD Limits Analysis **Parameter** Result %Rec Date Result Amount Result %Rec

03.24.20 15:24 Gasoline Range Hydrocarbons (GRO) < 50.1 1000 1020 102 935 70-135 9 93 35 mg/kg 03.24.20 15:24 70-135 13 Diesel Range Organics (DRO) < 50.1 1000 1170 117 1030 102 35 mg/kg

MSD MS MS **MSD** Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag Date 1-Chlorooctane 124 115 70-135 % 03.24.20 15:24 03.24.20 15:24 o-Terphenyl 127 112 70-135 %

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

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

= MS/LCS Result E = MSD/LCSD Result

A = Parent Result B = Spike Added D = MSD/LCSD % Rec

MS = Matrix Spike

SW8015P

03.24.20

SW8015P

Flag

Prep Method:

Prep Method:



Seq Number:

#### **QC Summary** 656558

#### LT Environmental, Inc.

RDX 17-14

Analytical Method: TPH by SW8015 Mod

3120791 Matrix: Soil Date Prep:

MS Sample Id: 656458-132 S MSD Sample Id: 656458-132 SD Parent Sample Id: 656458-132

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lin	nit Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	< 50.1	1000	965	97	904	90	70-135	7	35	mg/kg	03.24.20 15:24	
Diesel Range Organics (DRO)	< 50.1	1000	1130	113	1030	103	70-135	9	35	mg/kg	03.24.20 15:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		116		70-135	%	03.24.20 15:24
o-Terphenyl	121		111		70-135	%	03.24.20 15:24

Analytical Method: TPH by SW8015 Mod

Seq Number: 3120922 Matrix: Soil Date Prep: 03.24.20 MS Sample Id: 656666-001 S MSD Sample Id: 656666-001 SD 656666-001 Parent Sample Id:

%RPD RPD Limit Units MS MS **Parent** Spike Limits Analysis **MSD** MSD **Parameter** Date Result Amount Result %Rec %Rec Result Gasoline Range Hydrocarbons (GRO) < 50.1 1000 1010 101 912 70-135 10 35 03.25.20 10:50 mg/kg 03.25.20 10:50 Diesel Range Organics (DRO) < 50.1 1000 1150 115 1030 103 70-135 35 11 mg/kg

MS MS **MSD** MSD Limits Units Analysis **Surrogate** Flag %Rec Flag Date %Rec 1-Chlorooctane 126 119 70-135 % 03.25.20 10:50 o-Terphenyl 128 121 70-135 % 03.25.20 10:50

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P Seq Number: 3120925 Matrix: Soil Date Prep: 03.24.20 MS Sample Id: 656558-004 S MSD Sample Id: 656558-004 SD Parent Sample Id: 656558-004

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lin	nit Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	< 50.2	1000	851	85	781	78	70-135	9	35	mg/kg	03.25.20 10:50	
Diesel Range Organics (DRO)	89.4	1000	960	87	856	77	70-135	11	35	mg/kg	03.25.20 10:50	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		97		70-135	%	03.25.20 10:50
o-Terphenyl	100		89		70-135	%	03.25.20 10:50

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

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result = MS/LCS Result

E = MSD/LCSD Result

MS = Matrix Spike B = Spike AddedD = MSD/LCSD % Rec

03.23.20 20:58

Flag

Flag



4-Bromofluorobenzene

95

#### QC Summary 656558

#### LT Environmental, Inc.

RDX 17-14

92

70-130

Analytical Method:BTEX by EPA 8021BPrep Method:SW5030BSeq Number:3120699Matrix:SolidDate Prep:03.23.20

MB Sample Id: 7699587-1-BLK LCS Sample Id: 7699587-1-BKS LCSD Sample Id: 7699587-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RP	D RPD Limi	t Units	Analysis Date	Flag
Benzene	< 0.00200	0.100	0.107	107	0.105	105	70-130	2	35	mg/kg	03.23.20 20:58	
Toluene	< 0.00200	0.100	0.102	102	0.100	100	70-130	2	35	mg/kg	03.23.20 20:58	
Ethylbenzene	< 0.00200	0.100	0.0981	98	0.0952	95	71-129	3	35	mg/kg	03.23.20 20:58	
m,p-Xylenes	< 0.00400	0.200	0.202	101	0.196	98	70-135	3	35	mg/kg	03.23.20 20:58	
o-Xylene	< 0.00200	0.100	0.102	102	0.0988	99	71-133	3	35	mg/kg	03.23.20 20:58	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSI %Re			Limits	Units	Analysis Date	
1,4-Difluorobenzene	109		1	08		108			70-130	%	03.23.20 20:58	

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

94

Seq Number:3120724Matrix:SolidDate Prep:03.23.20MB Sample Id:7699590-1-BLKLCS Sample Id:7699590-1-BKSLCSD Sample Id:7699590-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date
Benzene	< 0.00200	0.100	0.125	125	0.126	126	70-130	1	35	mg/kg	03.23.20 19:12
Toluene	< 0.00200	0.100	0.114	114	0.116	116	70-130	2	35	mg/kg	03.23.20 19:12
Ethylbenzene	< 0.00200	0.100	0.106	106	0.108	108	71-129	2	35	mg/kg	03.23.20 19:12
m,p-Xylenes	< 0.00400	0.200	0.208	104	0.211	106	70-135	1	35	mg/kg	03.23.20 19:12
o-Xylene	< 0.00200	0.100	0.106	106	0.107	107	71-133	1	35	mg/kg	03.23.20 19:12

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	117		110		110		70-130	%	03.23.20 19:12
4-Bromofluorobenzene	93		87		88		70-130	%	03.23.20 19:12

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

 Seq Number:
 3120699
 Matrix:
 Soil
 Date Prep:
 03.23.20

 Parent Sample Id:
 656545-003
 MS Sample Id:
 656545-003 SD
 MSD Sample Id:
 656545-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date
Benzene	< 0.00200	0.100	0.0874	87	0.109	109	70-130	22	35	mg/kg	03.23.20 21:39
Toluene	< 0.00200	0.100	0.0839	84	0.102	102	70-130	19	35	mg/kg	03.23.20 21:39
Ethylbenzene	< 0.00200	0.100	0.0795	80	0.0950	95	71-129	18	35	mg/kg	03.23.20 21:39

82

82

0.194

0.0986

Surrogate	MS MS %Rec Flag	MSD MSD %Rec Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108	109	70-130	%	03.23.20 21:39
4-Bromofluorobenzene	97	90	70-130	%	03.23.20 21:39

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

m,p-Xylenes o-Xylene

$$\begin{split} [D] &= 100*(C\text{-A}) \, / \, B \\ RPD &= 200* \mid (C\text{-E}) \, / \, (C\text{+E}) \mid \\ [D] &= 100*(C) \, / \, [B] \end{split}$$

< 0.00401

< 0.00200

0.200

0.100

0.163

0.0815

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

17

19

35

35

mg/kg

mg/kg

C = MS/LCS Result E = MSD/LCSD Result

70-135

71-133

99

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

03.23.20 21:39

03.23.20 21:39



Seq Number:

#### **QC Summary** 656558

#### LT Environmental, Inc.

RDX 17-14

Analytical Method: BTEX by EPA 8021B

3120724 Matrix: Soil Prep Method: SW5030B Date Prep: 03.23.20

MSD Sample Id: 656558-005 SD

Parent Sample Id:	656558-005		MS Sar	nple Id:	656558-0	05 S		M	SD Sample	Id: 656	558-005 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPI	RPD Limit	Units	Analysis Date	Flag
Benzene	< 0.00198	0.0992	0.118	119	0.114	114	70-130	3	35	mg/kg	03.23.20 19:53	
Toluene	< 0.00198	0.0992	0.106	107	0.101	101	70-130	5	35	mg/kg	03.23.20 19:53	
Ethylbenzene	< 0.00198	0.0992	0.0964	97	0.0894	89	71-129	8	35	mg/kg	03.23.20 19:53	
m,p-Xylenes	< 0.00397	0.198	0.185	93	0.172	86	70-135	7	35	mg/kg	03.23.20 19:53	
o-Xylene	< 0.00198	0.0992	0.0938	95	0.0899	90	71-133	4	35	mg/kg	03.23.20 19:53	
Surrogate				AS Rec	MS Flag	MSD %Re		-	Limits	Units	Analysis Date	
1,4-Difluorobenzene			1	11		112		•	70-130	%	03.23.20 19:53	
4-Bromofluorobenzene			;	34		88		-	70-130	%	03.23.20 19:53	

Received by OED: METERS 1:36, 47 PM	Page 135 of 1
ppera leeived ler Culpile Culp	Project N Company Address: City, Stat Phone: Project N Project N Project N Sampler's

# **Chain of Custody**

Work Order No: 456558

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334 Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296

		Hobbs, NM (575-392-7550) Phoenix A7 (4)	80_355_0000\ Attacts CA (770 440 0000) =	
t Manager:	Chris Mckisson	Bill to:	Rill to: (# 4#5-park) Auditid, GA (770-449-8800)   lampa, FL (	(813-620-2000) www.xenco.com Page of
		Dim to: (ii dillelent)	Chris Mckisson	Work Order Commonts
any Name:	any Name: LT Environmental, Inc.	Company	+ 1	Sillalling Countries
		Company Name: L1 Environmental	L i Environmental	Program: UST/PST PRP Programatical Po
SS:	820 Megan Ave, Unit B	Address:	820 Megan Ave Unit B	State of Paris Circumstates Inc. 4 Denund
tate ZIP	Biffo CO 816E0		ore megan ave, out o	State of Project:
rate ZII.	Mile, CO 81650	City, State ZIP:	Rifle, CO 81650	Reporting   evel     Pavel     Pavel
	970-285-9985	Email: Ihill@Hon.com		PI/OSI LIRE LEVELIV
		Email: grini@iteriv.com, crifckisson@iteriv.com	ickisson@itenv.com	Deliverables: EDD ADAPT TO Other
Name.	000			
Traditio.	1	Turn Arana		

	o h	uished by: (Signature)	enco will be liable only for th minimum charge of \$75,00 wi	e Method(s) and Metal(s) to be analyzed ature of this document and relinquishment of samples (sense will be 15 to 15.	200.7 / 6010 200.8	Sau	23	15 90	F519	FS18	C217	FSIG	FSIS	FSIN	1510	Sample Identification	Custody Seals: Yes	Custody Seals: Yes	d Intact:	ature (°C):	PLE RECEIPT	r's Name:	umber: みんねー	Number: 0 3	Name: Rox	970-285-9985	tate ZIP: Rifle, CO 81650	820 Meg
	1	Rec	il be applied to each p	(s) to be analyze	200.8 / 6020:	s	S	Ø	Ø	Ø	S	S	s	s 3	TE cele s		s (NO) N/A	s (NO N/A	Yes No	26	Temp Blank: Y	Jeremy Hill	P-2813	~	H-11 >	9985	81650	820 Megan Ave, Unit B
7	0	Received by: (Signature)	shall not assume any project and a charge of	d TCLP / SF	8RCRA	1133	11139	7611	1649	1637	6801	8491		0101 Oc/E+/E	1450 Oc/24E	Date Time Sampled Sampled	Total Containers:	Correction Factor:	七四	Ther	Yes No Wet Ice:		R	Z)		En		
	3	ure)	responsibility for any I	TCLP / SPLP 6010: 8RCRA	13PPM Texas 11	3								-	141	d Depth		or: -0-7	007		ce: (Yes) No	Due Date:	Rush:	Routine	Turn Around	nail: Jhill@Itenv.co	City, State ZIP:	Address:
	373/20 15:40	Date/Time	osses or expenses incurre omitted to Xenco, but not a	A Sb As Ba Be	Texas 11 Al Sb As Ba Be	1 1 2								-	×	Numbe TPH (EP BTEX (E	A 801 PA 0=	(5) =802	1)	ers						Email: Jhill@ltenv.com, cmckisson@ltenv.com		820 Megan Ave, Unit B
4	2	Relinguished by: (Signature)	tenco 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 conditional 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.	Cd Cr Co Cu Pb Mn Mo	B Cd Ca Cr Co Cu Fe										3				,					ANALYSIS RE		com	0	e. Unit B
		nature) Received by	kenco 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 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.	e 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  ature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. If accions the first contractors is a science of the contractors and subcontractors.	Db Ma Ma Ma Nii 17 Ca																			EQUEST	L	_		State of Project:
	received by: (Signature)	V. (Cianatana)	<u>o</u>	g SiO2										Con		Sa	TAT sta							-	ADari	ADD T		
	Date/Time	1		Na Sr Tl Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg	8	_		-			-		-	Compassion		Sample Comments	TAT starts the day recevied by the							Work Order Notes	Other:	LAN HEVEL IV		D. Chauma

Revised Date 051418 Rev. 2018.1

Page	BORATORIES	Midland, IX (432-704-5440) EL Paso, IX (315)565-5443 EUDDOCK, IX (606)734-1256 Hobbs,NM (575-392-7556) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)	Midland, I.X. (432-704-3440) EL Pass, I.A. (919)363-3443 EUDDOCK, I.A. (609)784-1259 75-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (8	(915)585-3443 LUDUUK 0) Atlanta,GA (770-449-8	800) Tampa,FL (813-620-	W	Page of
⊃roject Manager:	Chris Mckisson	Bill to	Bill to: (if different) Chris Mckisson	kisson		Work Order Comments	mments
	LT Environmental, Inc.,	Comp	75.	LT Environmental	Pro	Program: UST/PST ☐RP ☐rownfields	ids IRC Operfund
	820 Megan Ave, Unit B	Address:		820 Megan Ave, Unit B			
e ZIP:	Rifle, CO 81650	City,	te ZIP:	81650	Re	Reporting:Level II  \$T/UST	ST BRP Pulle [
	970-285-9985	Email: Jhill@	n, cm	ltenv.com	De	Deliverables: EDD ADaPT	Other:
Project Name:	アロメ ノフーレ	Turn Around	ound	Α	ANALYSIS REQUEST		Work Order Notes
Project Number:	11008 HSO	Routine					
P.O. Number:	2186-0813	Rush:					
Sampler's Name:	Jeremy Hill	Due Date:					
SAMPLE RECEIPT	Temp Blank:	Yes No Wet Ice: Yes	No				
Temperature (°C):	ned to	Thermometer I	iners	-			
Received Intact:	Nes No		)				
Cooler Custody-Seals:	∜es No	Correction Factor:	8015				TAT starts the day recevied by the
Sample Custody Seals:	IS: Yes No N/A	Total Containers.	PA				in the second se
Sample Identification	Matrix	Date Time Do	Numb	BTEX (			Sample Comments
FS23	s 3/	7811 sofee/8	×	•			Corpork
PSO!		5141					
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P503	S	1507					
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Total 200.7 / 6010	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	SiO2 Na Sr Tl Sn U V Zn
March	Circle Method(s) and Metal(s) to be analyzed	ZED ICLP/SPLP BUTU: BRUKA	10: 8RCRA SD AS	Ba be cd cr co c	Cu FD WIII MO NI GE AG II G		
. (2)	voltce: 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 fance. 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.	nples constitutes a valid purchase nd shall not assume any responsi h project and a charge of \$5 for ea	order from client company t bility for any losses or expen ch sample submitted to Xeno	o Xenco, its affiliates and susses incurred by the client if no, but not analyzed. These	ubcontractors. It assigns states it assigns states it asses are due to circusterms will be enforced unless	ndard terms and conditions mstances beyond the control previously negotiated.	
Relir	(Signature) R	Received by: (Signature)	Date/Time	me Relinqu	Relinquished by: (Signature)	Received by: (Signature)	) Date/Time
D. F.		D	3/23/20 1	40 2			
			07100				

#### **XENCO Laboratories**

#### Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 03.23.2020 03.40.00 PM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 656558

Temperature Measuring device used: T-NM-007

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		2.6	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	ner/ 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 relinquish	ned/ received?	Yes	
#10 Chain of Custody agrees with sample la	abels/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 headsp	ace?	N/A	

* Must be completed for after-hours deliver	v of sam	ples prior t	o placing ir	the refrigerator
made be completed for ditor medic deliver	, c. ca	p.00 p0	p	. tilo i oli igolato.

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan

Date: 03.23.2020

Checklist reviewed by: Jessica Warner

Date: 03.24.2020

# **Analytical Report 656687**

for

LT Environmental, Inc.

**Project Manager: Chris McKisson** 

**RDX 17-14** 

034820011

25-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)



25-MAR-20

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

Reference: XENCO Report No(s): 656687

**RDX 17-14** Project Address:

#### **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) 656687. 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. 656687 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vramer

Project Manager

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

Certified and approved by numerous States and Agencies.

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



# **Sample Cross Reference 656687**

# LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
SW01	S	03-24-20 11:00	0 - 4 ft	656687-001
FS25 (Hold)	S	03-24-20 12:04	4 ft	Not Analyzed

Version: 1.%

#### **CASE NARRATIVE**

Client Name: LT Environmental, Inc.

Project Name: RDX 17-14

 Project ID:
 034820011
 Report Date:
 25-MAR-20

 Work Order Number(s):
 656687
 Date Received:
 03/24/2020

#### Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3120853 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 656687

LT Environmental, Inc., Arvada, CO **Project Name: RDX 17-14** 

Date Received in Lab: Tue Mar-24-20 02:25 pm

Report Date: 25-MAR-20 Project Manager: Jessica Kramer

**Project Id:** 034820011 **Contact:** Chris McKisson

**Project Location:** 

	Lab Id:	656687-001			
Analysis Paguested	Field Id:	SW01			
Analysis Requested	Depth:	0-4 ft			
	Matrix:	SOIL			
	Sampled:	Mar-24-20 11:00			
BTEX by EPA 8021B	Extracted:	Mar-24-20 14:37			
	Analyzed:	Mar-24-20 22:16			
	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:	Mar-24-20 14:51			
	Analyzed:	Mar-24-20 17:43			
	Units/RL:	mg/kg RL			
Chloride		648 49.9			
TPH by SW8015 Mod	Extracted:	Mar-24-20 17:30			
	Analyzed:	Mar-25-20 11:51			
	Units/RL:	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)	·	<49.9 49.9			
Diesel Range Organics (DRO)		<49.9 49.9			
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9			
Total GRO-DRO		<49.9 49.9	_		
Total TPH		<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

Version: 1.%

Jessica Kramer Project Manager

fession Weamer



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: **SW01**  Matrix:

Result

648

Date Received:03.24.20 14.25

Lab Sample Id: 656687-001

Date Collected: 03.24.20 11.00

Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech:

MAB

Basis:

Wet Weight

Analyst:

Parameter

Chloride

Tech:

MAB Seq Number: 3120867 Date Prep: 03.24.20 14.51

RL

49.9

Units

mg/kg

Dil

5

Flag

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

**Analysis Date** 

03.24.20 17.43

Cas Number

16887-00-6

DTH

% Moisture:

DTH Analyst:

03.24.20 17.30 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	03.25.20 11.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	03.25.20 11.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	03.25.20 11.51	U	1
Total GRO-DRO	PHC628	<49.9	49.9		mg/kg	03.25.20 11.51	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	03.25.20 11.51	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	108	%	70-135	03.25.20 11.51		
o-Terphenyl		84-15-1	113	%	70-135	03.25.20 11.51		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: SW01 Matrix: Soil Date Received:03.24.20 14.25

Lab Sample Id: 656687-001 Date Collected: 03.24.20 11.00 Sample Depth: 0 - 4 ft

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

Tech: MAB % Moisture:

Analyst: MAB Date Prep: 03.24.20 14.37 Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200		mg/kg	03.24.20 22.16	U	1
Toluene	108-88-3	< 0.00200	0.00200		mg/kg	03.24.20 22.16	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200		mg/kg	03.24.20 22.16	U	1
m,p-Xylenes	179601-23-1	< 0.00401	0.00401		mg/kg	03.24.20 22.16	U	1
o-Xylene	95-47-6	< 0.00200	0.00200		mg/kg	03.24.20 22.16	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200		mg/kg	03.24.20 22.16	U	1
Total BTEX		< 0.00200	0.00200		mg/kg	03.24.20 22.16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	110	%	70-130	03.24.20 22.16		
4-Bromofluorobenzene		460-00-4	97	%	70-130	03.24.20 22.16		



### Flagging Criteria

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

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

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.



Seq Number:

#### **QC Summary** 656687

#### LT Environmental, Inc.

RDX 17-14

Limits

Limits

Limits

Analytical Method: Chloride by EPA 300

3120867 Matrix: Solid

Spike

MB Sample Id: 7699626-1-BLK

MR

Parent

LCS Sample Id: 7699626-1-BKS

LCSD

**MSD** 

LCSD

**MSD** 

Date Prep: 03.24.20 LCSD Sample Id: 7699626-1-BSD

Prep Method:

%RPD RPD Limit Units Analysis

E300P

Flag **Parameter** Result Amount Result %Rec Date %Rec Result 03.24.20 15:38 Chloride <10.0 250 256 102 263 105 90-110 3 20 mg/kg

LCS

Analytical Method: Chloride by EPA 300

Seq Number: 3120867

Matrix: Soil

MS

Prep Method: Date Prep:

E300P 03.24.20

Parent Sample Id: 656666-001 MS Sample Id: 656666-001 S

MS

LCS

MSD Sample Id: 656666-001 SD %RPD RPD Limit Units

Analysis

Flag

**Parameter** Result Date Result Amount %Rec Result %Rec Chloride 688 200 892 102 876 96 90-110 2 20 mg/kg 03.24.20 15:55

Analytical Method: Chloride by EPA 300

3120867 Seq Number:

Matrix: Soil

Spike

Spike

Prep Method: E300P

Date Prep:

03.24.20

MSD Sample Id: 656670-008 SD 656670-008 S MS Sample Id: Parent Sample Id: 656670-008

%RPD RPD Limit Units

MS Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result Date Result %Rec Amount Result %Rec Chloride 2150 201 2350 100 2350 90-110 0 20 03.24.20 17:14 100 mg/kg

Analytical Method: TPH by SW8015 Mod

Prep Method:

SW8015P

3120922 Matrix: Solid Seq Number: Date Prep: 03.24.20

7699702-1-BKS 7699702-1-BSD LCS Sample Id: LCSD Sample Id: MB Sample Id: 7699702-1-BLK

MB **Parameter** 

LCS LCS

LCSD

LCSD

%RPD RPD Limit Units Analysis Flag

Result %Rec Date Result Amount %Rec Result Gasoline Range Hydrocarbons (GRO) 984 98 992 70-135 03.25.20 09:25 < 50.0 1000 99 35 1 mg/kg 03.25.20 09:25 1090 109 70-135 35 Diesel Range Organics (DRO) 1000 1090 109 0 < 50.0 mg/kg

LCS MB MB LCS LCSD Limits Units Analysis LCSD **Surrogate** %Rec Flag %Rec Flag Flag Date %Rec 1-Chlorooctane 108 123 123 70-135 % 03.25.20 09:25 03.25.20 09:25 o-Terphenyl 112 121 122 70-135 %

Analytical Method: TPH by SW8015 Mod

Seg Number: 3120922 Matrix: Solid

Prep Method:

SW8015P

MB Sample Id: 7699702-1-BLK

MB

Date Prep: 03.24.20

**Parameter** 

Result

Analysis Date

Motor Oil Range Hydrocarbons (MRO)

< 50.0

mg/kg

Units

03.25.20 14:56

Flag

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

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result = MS/LCS Result

B = Spike Added D = MSD/LCSD % Rec

MS = Matrix Spike

= MSD/LCSD Result



Seq Number:

**Parameter** 

#### **QC Summary** 656687

#### LT Environmental, Inc.

RDX 17-14

**MSD** 

**MSD** 

Limits

Analytical Method: TPH by SW8015 Mod

3120922 Matrix: Soil

MS

MS Sample Id: 656666-001 S Parent Sample Id: 656666-001

Parent

Spike

SW8015P Prep Method:

MSD Sample Id: 656666-001 SD

Date Prep: 03.24.20

%RPD RPD Limit Units Analysis Flag Date

SW5030B

SW5030B

Prep Method:

Flag

Flag

Result Amount Result %Rec %Rec Result Gasoline Range Hydrocarbons (GRO) 70-135 03.25.20 10:50 < 50.1 1000 1010 101 912 91 10 35 mg/kg Diesel Range Organics (DRO) 1030 70-135 35 03.25.20 10:50 < 50.1 1000 1150 115 103 11 mg/kg

MS

MS MS **MSD MSD** Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag Date 03.25.20 10:50 1-Chlorooctane 126 119 70-135 % o-Terphenyl 128 121 70-135 % 03.25.20 10:50

Analytical Method: BTEX by EPA 8021B

Prep Method: Seq Number: 3120853 Matrix: Solid Date Prep: 03.24.20

LCS Sample Id: 7699625-1-BKS LCSD Sample Id: 7699625-1-BSD MB Sample Id: 7699625-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date
Benzene	< 0.00200	0.100	0.113	113	0.114	114	70-130	1	35	mg/kg	03.24.20 15:48
Toluene	< 0.00200	0.100	0.108	108	0.110	110	70-130	2	35	mg/kg	03.24.20 15:48
Ethylbenzene	< 0.00200	0.100	0.102	102	0.104	104	71-129	2	35	mg/kg	03.24.20 15:48
m,p-Xylenes	< 0.00400	0.200	0.210	105	0.215	108	70-135	2	35	mg/kg	03.24.20 15:48
o-Xylene	< 0.00200	0.100	0.105	105	0.108	108	71-133	3	35	mg/kg	03.24.20 15:48

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	%	03.24.20 15:48
4-Bromofluorobenzene	95		88		91		70-130	%	03.24.20 15:48

Analytical Method: BTEX by EPA 8021B

Seq Number: 3120853 Matrix: Soil Date Prep: 03.24.20

656666-001 S MSD Sample Id: 656666-001 SD MS Sample Id: Parent Sample Id: 656666-001 0/ DDD DDD I :mit Imita

Parameter	Result	Amount	Result	MS %Rec	MSD Result	MSD %Rec	Limits	%KPD	KPD LIMI	Units	Analysis Date	
Benzene	< 0.00199	0.0996	0.112	112	0.118	118	70-130	5	35	mg/kg	03.24.20 16:29	
Toluene	< 0.00199	0.0996	0.107	107	0.114	114	70-130	6	35	mg/kg	03.24.20 16:29	
Ethylbenzene	< 0.00199	0.0996	0.101	101	0.108	108	71-129	7	35	mg/kg	03.24.20 16:29	
m,p-Xylenes	< 0.00398	0.199	0.208	105	0.223	112	70-135	7	35	mg/kg	03.24.20 16:29	
o-Xylene	< 0.00199	0.0996	0.104	104	0.111	111	71-133	7	35	mg/kg	03.24.20 16:29	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		109		70-130	%	03.24.20 16:29
4-Bromofluorobenzene	94		93		70-130	%	03.24.20 16:29

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

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Cuilea

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result = MS/LCS Result

E = MSD/LCSD Result

MS = Matrix Spike B = Spike AddedD = MSD/LCSD % Rec

Chris Mckisson

City, State ZIP: Address: Company Name: Project Manager:

Rifle, CO 81650 820 Megan Ave, Unit B LT Environmental, Inc.

City, State ZIP:

Rifle, CO 81650 820 Megan Ave, Unit B LT Environmental Chris Mckisson

> Program: UST/PST State of Project:

> > □RP □rownfields □RC Work Order Comments

¶perfund

# Chain of Custody

Work Order No:

www.xenco.com

Page

of.

Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) 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

Bill to: (if different) Company Name: Address:

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Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time		ature)	Received by: (Signature)	\	(Signature	reliriquisned by: (Signature)
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				8	(Yes)	Yes No Wet Ice:	Temp Blank:	EIPT	SAMPLE RECEIPT
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					Rush: 241	F	- 9813	- 0 UC	O. Number:
WORK Order Notes					Routine		1100081180	81150	roject Number:
Work Order Notes		ANALYSIS REQUEST		۵	Turn Around		コーコー	ROX	Project Name:
Other:	<u> </u>		Email: Jhill@ltenv.com, cmckisson@ltenv.com	nv.com, c	mail: Jhill@lte	Е	9985	970-285-9985	Phone:
TRP Illevel IV	Reporting:Level II   FT/UST	Re	Rifle, CO 81650	te ZIP:	City, State ZIP:		701000	, mc, 00	The state of the s

Revised Date 051418 Rev. 2018.1

#### **XENCO Laboratories**

#### Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 03.24.2020 02.25.00 PM

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

Work Order #: 656687

Temperature Measuring device used: T-NM-007

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		2.5	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping conta	iner/ 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 relinquish	hed/ received?	Yes	
#10 Chain of Custody agrees with sample I	abels/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 headsp	pace?	N/A	

* Must be completed for after-hours deliver	v of sam	ples prior t	o placing ir	the refrigerator
made be completed for ditor medic deliver	, c. ca	p.00 p0	p	. tilo i oli igolato.

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan

Date: 03.24.2020

Checklist reviewed by: Jessica Warner

Date: 03.25.2020

# **Analytical Report 657037**

for

LT Environmental, Inc.

**Project Manager: Chris McKisson** 

**RDX 17-14** 

034820011

27-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)



27-MAR-20

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

Reference: XENCO Report No(s): 657037

**RDX 17-14** Project Address:

#### **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) 657037. 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. 657037 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Vermer

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 657037**

LT Environmental, Inc., Arvada, CO

RDX 17-14

Version: 1.%

#### **CASE NARRATIVE**

Client Name: LT Environmental, Inc.

Project Name: RDX 17-14

 Project ID:
 034820011
 Report Date:
 27-MAR-20

 Work Order Number(s):
 657037
 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-3121157 BTEX by EPA 8021B

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



034820011

Chris McKisson

## Certificate of Analysis Summary 657037

LT Environmental, Inc., Arvada, CO

**Project Name: RDX 17-14** 

**Date Received in Lab:** Thu Mar-26-20 03:30 pm

**Report Date: 27-MAR-20** Project Manager: Jessica Kramer

**Contact: Project Location:** 

**Project Id:** 

	Lab Id:	657037-001			
Analysis Requested	Field Id:	FS07A			
Anaiysis Kequesieu	Depth:	0.5-2.0 ft			
	Matrix:	SOIL			
	Sampled:	Mar-26-20 10:44			
BTEX by EPA 8021B	Extracted:	Mar-26-20 18:00			
	Analyzed:	Mar-27-20 05:43			
	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			
-Xylene		< 0.00199 0.00199			
ylenes, Total		< 0.00199 0.00199			
Total BTEX		< 0.00199 0.00199			
Chloride by EPA 300	Extracted:	Mar-26-20 20:09			
	Analyzed:	** ** ** **			
	Units/RL:	mg/kg RL			
Chloride		273 10.0			
TPH by SW8015 Mod	Extracted:	Mar-26-20 16:00			
	Analyzed:	Mar-27-20 08:59			
	Units/RL:	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2			
Diesel Range Organics (DRO)		267 50.2			
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2			
Total GRO-DRO		267 50.2			
Total TPH		267 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

Version: 1.%

Jessica Kramer Project Manager

fession Weamer



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS07A

Matrix: Soil

Date Received:03.26.20 15.30

Lab Sample Id: 657037-001

Date Collected: 03.26.20 10.44

Sample Depth: 0.5 - 2.0 ft

Prep Method: E300P

**Analysis Date** 

Analytical Method: Chloride by EPA 300

% Moisture:

Tech:

Parameter

Tech:

MAB

Date Prep: 03.26.20 20.09

RL

Basis:

Wet Weight

Flag

Dil

1

Analyst: MAB

Seq Number: 3121152

Units

**Chloride** 16887-00-6 **273** 10.0 mg/kg 03.26.20 18.50

Result

Cas Number

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

DTH

% Moisture:

Analyst: DTH

Date Prep: 03.26.20 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.2	50.2		mg/kg	03.27.20 08.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	267	50.2		mg/kg	03.27.20 08.59		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.2	50.2		mg/kg	03.27.20 08.59	U	1
Total GRO-DRO	PHC628	267	50.2		mg/kg	03.27.20 08.59		1
Total TPH	PHC635	267	50.2		mg/kg	03.27.20 08.59		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	114	%	70-135	03.27.20 08.59		
o-Terphenyl		84-15-1	120	%	70-135	03.27.20 08.59		



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

 Sample Id:
 FS07A
 Matrix:
 Soil
 Date Received:03.26.20 15.30

 Lab Sample Id:
 657037-001
 Date Collected: 03.26.20 10.44
 Sample Depth: 0.5 - 2.0 ft

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

Tech: MAB % Moisture:

Analyst: MAB Date Prep: 03.26.20 18.00 Basis: Wet Weight

Parameter	Cas Number	r Result	RL		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.27.20 05.43	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.27.20 05.43	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.27.20 05.43	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.27.20 05.43	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.27.20 05.43	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.27.20 05.43	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.27.20 05.43	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	110	%	70-130	03.27.20 05.43		
4-Bromofluorobenzene		460-00-4	93	%	70-130	03.27.20 05.43		



## **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.

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

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.



#### **QC Summary** 657037

#### LT Environmental, Inc.

RDX 17-14

LCSD

Analytical Method: Chloride by EPA 300

Seq Number: 3121152 Matrix: Solid

LCS Sample Id: 7699897-1-BKS MB Sample Id: 7699897-1-BLK

Spike

MR

E300P Prep Method:

Date Prep: 03.26.20

LCSD Sample Id: 7699897-1-BSD

%RPD RPD Limit Units Analysis Flag Date

Result Amount Result %Rec %Rec Result 03.27.20 09:48 Chloride <10.0 250 265 106 266 106 90-110 0 20 mg/kg

LCS

LCS

Analytical Method: Chloride by EPA 300

Seq Number: 3121152

**Parameter** 

657044-004

Matrix: Soil

MS Sample Id: 657044-004 S

LCSD

Limits

E300P Prep Method: Date Prep:

03.26.20

Parent Sample Id: MSD Sample Id: 657044-004 SD Spike MS MS %RPD RPD Limit Units Parent **MSD MSD** Limits Analysis

Flag **Parameter** Result Date Result Amount %Rec Result %Rec Chloride 146 200 327 91 337 96 90-110 3 20 mg/kg 03.27.20 10:05

Analytical Method: TPH by SW8015 Mod

Seq Number:

3121138

Matrix: Solid

Prep Method:

SW8015P

Flag

Flag

03.26.20 Date Prep:

LCS Sample Id: 7699848-1-BKS LCSD Sample Id: 7699848-1-BSD MB Sample Id: 7699848-1-BLK

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

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

Analytical Method: TPH by SW8015 Mod

Seq Number:

3121138

Matrix: Solid

Prep Method:

SW8015P

Date Prep: 03.26.20

Units

MB Sample Id: 7699848-1-BLK

**Parameter** Result Motor Oil Range Hydrocarbons (MRO) < 50.0

MB

Analysis

Date

03.27.20 00:31 mg/kg

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

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

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



#### **QC Summary** 657037

#### LT Environmental, Inc.

RDX 17-14

Analytical Method: TPH by SW8015 Mod

Seq Number: 3121138 Matrix: Soil

MS Sample Id: 656942-014 S Parent Sample Id: 656942-014

SW8015P Prep Method:

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 Lim	it 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	
			_				3.50			w		

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

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121157

MB Sample Id:

7699887-1-BLK

Matrix: Solid

LCS Sample Id: 7699887-1-BKS

SW5030B Prep Method:

03.26.20

Flag

Flag

Date Prep: LCSD Sample Id: 7699887-1-BSD

•												
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	
Benzene	< 0.00200	0.100	0.108	108	0.106	106	70-130	2	35	mg/kg	03.26.20 21:13	
Toluene	< 0.00200	0.100	0.102	102	0.101	101	70-130	1	35	mg/kg	03.26.20 21:13	
Ethylbenzene	< 0.00200	0.100	0.0957	96	0.0945	95	71-129	1	35	mg/kg	03.26.20 21:13	
m,p-Xylenes	< 0.00400	0.200	0.197	99	0.194	97	70-135	2	35	mg/kg	03.26.20 21:13	
o-Xylene	< 0.00200	0.100	0.100	100	0.0994	99	71-133	1	35	mg/kg	03.26.20 21:13	
Surrogate	MB	MB	L	CS	LCS	LCSI	LCS	D I	Limits	Units	Analysis	

Surrogate Flag Flag Flag %Rec %Rec Date %Rec 03.26.20 21:13 1.4-Difluorobenzene 112 109 109 70-130 % 03.26.20 21:13 4-Bromofluorobenzene 95 91 94 70-130 %

Analytical Method: BTEX by EPA 8021B

Seq Number: 3121157 Parent Sample Id: 656968-007

Matrix: Soil MS Sample Id: 656968-007 S Prep Method: Date Prep:

SW5030B 03.26.20

MSD Sample Id: 656968-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date
Benzene	< 0.00202	0.101	0.108	107	0.110	111	70-130	2	35	mg/kg	03.26.20 21:54
Toluene	< 0.00202	0.101	0.102	101	0.104	105	70-130	2	35	mg/kg	03.26.20 21:54
Ethylbenzene	< 0.00202	0.101	0.0962	95	0.0972	98	71-129	1	35	mg/kg	03.26.20 21:54
m,p-Xylenes	< 0.00404	0.202	0.197	98	0.201	102	70-135	2	35	mg/kg	03.26.20 21:54
o-Xylene	< 0.00202	0.101	0.0988	98	0.102	103	71-133	3	35	mg/kg	03.26.20 21:54

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		108		70-130	%	03.26.20 21:54
4-Bromofluorobenzene	94		92		70-130	%	03.26.20 21:54

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

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result

= MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike AddedD = MSD/LCSD % Rec

ceived	Whi.	Relinquished by: (Signature)	service. Xenco will be liable on Xenco. A minimum charge of \$	Circle Method(s) and Metal(s) to be analyzed	30:4	P	WI -							FSOTA	Sample Identification	Sample Custody Seals:	Cooler Custody Seals:	Received Intact:	Temperature (°C):	SAMPLE RECEIPT	Sampler's Name:	P.O. Number:	Project Number: C	Project Name:
	1	lature)	it and reinquisiment of sample it for the cost of sample in 75.00 will be applied to e	200.8 / 6020: Metal(s) to be ana	s	s	S	S	S	S	S	s/	S	s	tion Matrix	Yes NB N/A	Yes Mo N/A	Mes No	2.0	Temp Blank:	Jeremy Hill	S18e-0813	03487 0011	ROY 17-14
	Me	Received by: (Signature	samples constitutes a val s and shall not assume a ach project and a charge	8RCRA lyzed TCLP/							/			3/24/20 1044	Date Time Sampled Sampled	Total Containers:	Correction Factor:	イーマム	Thermometer ID	NA SAY				
	2	nature)	id purchase order from ny responsibility for any of \$5 for each sample s	TCLP / SPLP 6010: 8RCRA										1 05-20	e Depth	ners: 1	ctor: D2	100m	neter ID	Wet Ice: No No	Due Date: 3/37/30	Rush: 346	Routine []	Turn Around
	3/20/20 15:50	Date/Time	client company to Xenco losses or expenses incubing the company of	l Al Sb As Ba Be RA Sb As Ba Be					/					×	Number TPH (EI BTEX (F	PA 80	15)		ners					
4 0	$\mathcal{S}^2$	Relinquished by: (Signature)	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 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.	Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U										×	Chlorid	e (EP	A 30	0.0)						ANALYSIS REQUEST
		Received by: (Signature)	d terms and conditions inces beyond the control viously negotiated.	\g SiO2										o c		TAT								
		Date/Time		SiO2 Na Sr TI Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg									- france	Compass to	Sample Comments	IAT starts the day recevied by the lab, if received by 4:30pm								Work Order Notes

Chain of Custody

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334

Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Chris Mckisson
LT Environmental

Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296

Page 160 of 187

Project Manager:
Company Name:

Chris Mckisson

LT Environmental, Inc.

Address: City, State ZIP:

820 Megan Ave, Unit B Rifle, CO 81650 970-285-9985

Email: Jhill@ltenv.com, cmckisson@ltenv.com

Deliverables: EDD

Program: UST/PST
State of Project:

Work Order Comments

□RP □rownfields □RC

**\***□perfund

ADaPT |

Other:

820 Megan Ave, Unit B Rifle, CO 81650

Address: City, State ZIP:

Bill to: (if different)

Company Name:

Work Order No: \_\_\_

www.xenco.com

Page\_

of

10+Ch 10

#### **XENCO Laboratories**

#### Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 03.26.2020 03.30.00 PM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 657037

Temperature Measuring device used: T-NM-007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.6	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6*Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	No	
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst: PH Device/Lot#:

Date: 03.26.2020

Checklist completed by:

Elizabeth McClellan

Checklist reviewed by:

Jessica Kramer Date: 03.27.2020



# **Analytical Report 657041**

#### for

## LT Environmental, Inc.

Project Manager: Chris McKisson

RDX 17-14 034820011 04.22.2020

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)



04.22.2020

Project Manager: Chris McKisson

LT Environmental, Inc. 4600 W. 60th Avenue Arvada, CO 80003

Reference: XENCO Report No(s): 657041

**RDX 17-14** Project Address:

#### **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) 657041. 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. 657041 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

A Small Business and Minority Company

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# **Sample Cross Reference 657041**

## LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
SW06	S	03.26.2020 09:28	0 - 4 ft	657041-001
SW03	S	03.26.2020 09:32	0 - 4 ft	657041-002
FS25	S	03.26.2020 09:36	4 ft	657041-003
FS24	S	03.26.2020 09:39	4 ft	657041-004
FS11A	S	03.26.2020 10:40	4 ft	657041-005
SW07	S	03.26.2020 12:27	0 - 4.0 ft	657041-006
FS05A	S	03.26.2020 13:23	4 ft	657041-007

#### **CASE NARRATIVE**

Page 165 of 187

Client Name: LT Environmental, Inc.

Project Name: RDX 17-14

 Project ID:
 034820011
 Report Date:
 04.22.2020

 Work Order Number(s):
 657041
 Date Received:
 03.26.2020

#### Sample receipt non conformances and comments:

V1.001 Revision (client email) Corrected sample 003 name from FS25A to FS25 JK 04/22/20

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

None

#### **Analytical non conformances and comments:**

Batch: LBA-3121285 BTEX by EPA 8021B

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



# Certificate of Analysis Summary 657041

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-14

**Project Id:** 

**Project Location:** 

**Contact:** 

034820011

Chris McKisson

**Date Received in Lab:** Thu 03.26.2020 15:30

**Report Date:** 04.22.2020 09:45

Project Manager: Jessica Kramer

	Lab Id:	657041-0	001	657041-0	02	657041-0	003	657041-0	004	657041-0	005	657041-0	006
Analysis Requested	Field Id:	SW06	5	SW03		FS25		FS24		FS11A		SW07	
Anaiysis Kequesiea	Depth:	0-4 ft		0-4 ft		4- ft		4- ft		4- ft		0-4.0 ft	t
	Matrix:	SOIL	,	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	03.26.2020	09:28	03.26.2020	03.26.2020 09:32		09:36	03.26.2020 09:39		03.26.2020 10:40		03.26.2020	12:27
BTEX by EPA 8021B	Extracted:	03.27.2020	03.27.2020 11:00		03.27.2020 11:00		03.27.2020 11:00		03.27.2020 11:00		11:00	03.27.2020 11:00	
	Analyzed:	03.27.2020	03.27.2020 16:13		12:45	5 03.27.2020 17:55		03.27.2020 18:16		03.27.2020	18:36	03.27.2020	18:57
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
Toluene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
Ethylbenzene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
m,p-Xylenes		< 0.00400	0.00400	< 0.00396	0.00396	< 0.00397	0.00397	< 0.00398	0.00398	< 0.00398	0.00398	< 0.00398	0.00398
o-Xylene		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
Xylenes, Total		< 0.00200	0.00200	< 0.00198	0.00198	< 0.00198	0.00198	< 0.00199	0.00199	< 0.00199	0.00199	< 0.00199	0.00199
Total BTEX		< 0.00200	0.00200	<0.00198 0.00198		< 0.00198	0.00198	< 0.00199	0.00199	<0.00199 0.00199		< 0.00199	0.00199
Chloride by EPA 300	Extracted:	03.26.2020	20:09	03.26.2020 20:09		03.26.2020 20:09		03.26.2020 20:09		03.26.2020 20:09		03.26.2020 20:09	
	Analyzed:	03.27.2020	10:22	03.27.2020	10:28	03.27.2020 10:33		03.27.2020 10:39		03.27.2020	10:56	03.27.2020	11:02
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		193	10.1	317	10.0	2940	49.4	2050	49.6	388	10.0	439	50.4
TPH by SW8015 Mod	Extracted:	03.27.2020	17:30	03.27.2020	17:30	03.27.2020	17:30	03.27.2020	17:30	03.27.2020	17:30	03.27.2020	17:30
	Analyzed:	03.28.2020	02:26	03.28.2020	02:46	03.28.2020	03:07	03.28.2020	03:27	03.28.2020	03:47	03.28.2020	04:28
	Units/RL:	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	< 50.1	50.1	< 50.0	50.0	< 50.1	50.1	<50.3	50.3	< 50.1	50.1
Diesel Range Organics (DRO)		<49.9 49.9		< 50.1	50.1	< 50.0	50.0	< 50.1	50.1	90.7	50.3	< 50.1	50.1
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9		< 50.1	50.1	< 50.0	50.0	< 50.1	50.1	<50.3	50.3	< 50.1	50.1
Total GRO-DRO		<49.9	<49.9 49.9		50.1	< 50.0	50.0	< 50.1	50.1	90.7	50.3	< 50.1	50.1
Total TPH		<49.9	49.9	< 50.1	50.1	< 50.0	50.0	< 50.1	50.1	90.7	50.3	< 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

Jessica Kramer Project Manager

# **Certificate of Analysis Summary 657041**

LT Environmental, Inc., Arvada, CO

Project Name: RDX 17-14

Project Id: Contact:

**Project Location:** 

034820011 Chris McKisson 110ject Name. KD2

**Date Received in Lab:** Thu 03.26.2020 15:30

**Report Date:** 04.22.2020 09:45

Project Manager: Jessica Kramer

	Lab Id:	657041-007			
Analysis Requested	Field Id:	FS05A			
Anatysis Requested	Depth:	4- ft			
	Matrix:	SOIL			
	Sampled:	03.26.2020 13:23			
BTEX by EPA 8021B	Extracted:	03.27.2020 11:00			
	Analyzed:	03.27.2020 19:17			
	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:	03.26.2020 20:09			
	Analyzed:	03.27.2020 11:08			
	Units/RL:	mg/kg RL			
Chloride		974 49.5			
TPH by SW8015 Mod	Extracted:	03.27.2020 17:30			
	Analyzed:	03.28.2020 04:48			
	Units/RL:	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8			
Diesel Range Organics (DRO)		<49.8 49.8			
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8			
Total GRO-DRO		<49.8 49.8			
Total TPH		<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.

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Jessica Vramer

Jessica Kramer Project Manager



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: SW06
Lab Sample Id: 657041-001

Matrix: Soil

Date Received:03.26.2020 15:30

Date Collected: 03.26.2020 09:28

Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: MAB

Analyst:

MAB

Date Prep: 03.26.2020 20:09

Basis:

Wet Weight

Seq Number: 3121152

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	193	10.1	mg/kg	03.27.2020 10:22		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech:
Analyst:

DTH DTH

Date Prep:

03.27.2020 17:30

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9		mg/kg	03.28.2020 02:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9		mg/kg	03.28.2020 02:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9		mg/kg	03.28.2020 02:26	U	1
Total GRO-DRO	PHC628	<49.9	49.9		mg/kg	03.28.2020 02:26	U	1
Total TPH	PHC635	<49.9	49.9		mg/kg	03.28.2020 02:26	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	115	%	70-135	03.28.2020 02:26
o-Terphenyl	84-15-1	127	%	70-135	03.28.2020 02:26



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

03.27.2020 11:00

Sample Id: **SW06** Matrix: Soil Date Received:03.26.2020 15:30

Lab Sample Id: 657041-001 Date Collected: 03.26.2020 09:28 Sample Depth: 0 - 4 ft

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

Date Prep:

% Moisture:

Basis:

Wet Weight

Tech: MAB

Seq Number: 3121285

MAB

Analyst:

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00200	0.00200	mg/kg	03.27.2020 16:13	U	1
Toluene	108-88-3	< 0.00200	0.00200	mg/kg	03.27.2020 16:13	U	1
Ethylbenzene	100-41-4	< 0.00200	0.00200	mg/kg	03.27.2020 16:13	U	1
m,p-Xylenes	179601-23-1	< 0.00400	0.00400	mg/kg	03.27.2020 16:13	U	1
o-Xylene	95-47-6	< 0.00200	0.00200	mg/kg	03.27.2020 16:13	U	1
Xylenes, Total	1330-20-7	< 0.00200	0.00200	mg/kg	03.27.2020 16:13	U	1
Total BTEX		< 0.00200	0.00200	mg/kg	03.27.2020 16:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	<b>Analysis Date</b>	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.27.2020 16:13	
1,4-Difluorobenzene	540-36-3	115	%	70-130	03.27.2020 16:13	



## LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **SW03**  Matrix:

Date Received:03.26.2020 15:30

Lab Sample Id: 657041-002

Soil Date Collected: 03.26.2020 09:32

Sample Depth: 0 - 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: Analyst:

Tech: Analyst: MAB MAB

% Moisture:

Seq Number: 3121152

Date Prep:

Result

Cas Number

03.26.2020 20:09

Basis:

Wet Weight

**Parameter** 

Chloride 16887-00-6

RL317 10.0

Units mg/kg 03.27.2020 10:28

**Analysis Date** Flag

Dil 1

Analytical Method: TPH by SW8015 Mod

DTH

DTH

Date Prep:

03.27.2020 17:30

% Moisture:

Prep Method: SW8015P

Basis:

Wet Weight

Flag

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.1	50.1	mg/kg	03.28.2020 02:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.1	50.1	mg/kg	03.28.2020 02:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1	mg/kg	03.28.2020 02:46	U	1
Total GRO-DRO	PHC628	< 50.1	50.1	mg/kg	03.28.2020 02:46	U	1
Total TPH	PHC635	< 50.1	50.1	mg/kg	03.28.2020 02:46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	117	%	70-135	03.28.2020 02:46
o-Terphenyl	84-15-1	126	%	70-135	03.28.2020 02:46



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **SW03** 

Matrix: Soil Date Received:03.26.2020 15:30

Lab Sample Id: 657041-002

Date Collected: 03.26.2020 09:32

03.27.2020 11:00

Sample Depth: 0 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

Date Prep:

Basis:

% Moisture:

Wet Weight

Analyst: MAB

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198	mg/kg	03.27.2020 12:45	U	1
Toluene	108-88-3	< 0.00198	0.00198	mg/kg	03.27.2020 12:45	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198	mg/kg	03.27.2020 12:45	U	1
m,p-Xylenes	179601-23-1	< 0.00396	0.00396	mg/kg	03.27.2020 12:45	U	1
o-Xylene	95-47-6	< 0.00198	0.00198	mg/kg	03.27.2020 12:45	U	1
Xylenes, Total	1330-20-7	< 0.00198	0.00198	mg/kg	03.27.2020 12:45	U	1
Total BTEX		< 0.00198	0.00198	mg/kg	03.27.2020 12:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	<b>Analysis Date</b>	Flag
1,4-Difluorobenzene	540-36-3	115	%	70-130	03.27.2020 12:45	
4-Bromofluorobenzene	460-00-4	94	%	70-130	03.27.2020 12:45	



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS25

Matrix: Soil

Date Received:03.26.2020 15:30

Lab Sample Id: 657041-003 Date Collected: 03.26.2020 09:36

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: MAB

Analyst:

MAB

Date Prep: 03.26.2020 20:09

Basis:

Wet Weight

Seq Number: 3121152

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 2940
 49.4
 mg/kg
 03.27.2020 10:33
 5

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech:

Analyst:

DTH DTH

Date Prep: 03.27.2020 17:30

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.0	50.0		mg/kg	03.28.2020 03:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.0	50.0		mg/kg	03.28.2020 03:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.0	50.0		mg/kg	03.28.2020 03:07	U	1
Total GRO-DRO	PHC628	< 50.0	50.0		mg/kg	03.28.2020 03:07	U	1
Total TPH	PHC635	< 50.0	50.0		mg/kg	03.28.2020 03:07	U	1
Surrogate	C	as Number (	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	113	%	70-135	03.28.2020 03:07
o-Terphenyl	84-15-1	122	%	70-135	03.28.2020 03:07



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS25

Matrix: Soil

Date Received:03.26.2020 15:30

Lab Sample Id: 657041-003

Date Collected: 03.26.2020 09:36

03.27.2020 11:00

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

MAB

Prep Method: SW5030B

Tech: MAB

Analyst:

Date Prep:

% Moisture:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00198	0.00198		mg/kg	03.27.2020 17:55	U	1
Toluene	108-88-3	< 0.00198	0.00198		mg/kg	03.27.2020 17:55	U	1
Ethylbenzene	100-41-4	< 0.00198	0.00198		mg/kg	03.27.2020 17:55	U	1
m,p-Xylenes	179601-23-1	< 0.00397	0.00397		mg/kg	03.27.2020 17:55	U	1
o-Xylene	95-47-6	< 0.00198	0.00198		mg/kg	03.27.2020 17:55	U	1
Xylenes, Total	1330-20-7	< 0.00198	0.00198		mg/kg	03.27.2020 17:55	U	1
Total BTEX		< 0.00198	0.00198		mg/kg	03.27.2020 17:55	U	1
Surrogate	Ca	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	<b>Analysis Date</b>	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	03.27.2020 17:55	
1,4-Difluorobenzene	540-36-3	116	%	70-130	03.27.2020 17:55	



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS24

Matrix: Soil

Date Received:03.26.2020 15:30

Lab Sample Id: 657041-004

Date Collected: 03.26.2020 09:39

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: MAB

Analyst:

MAB

03.26.2020 20:09

Basis:

Wet Weight

Seq Number: 3121152

 Parameter
 Cas Number
 Result
 RL
 Units
 Analysis Date
 Flag
 Dil

 Chloride
 16887-00-6
 2050
 49.6
 mg/kg
 03.27.2020 10:39
 5

Date Prep:

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH DTH

Date Prep:

03.27.2020 17:30

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1		mg/kg	03.28.2020 03:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.1	50.1		mg/kg	03.28.2020 03:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	03.28.2020 03:27	U	1
Total GRO-DRO	PHC628	< 50.1	50.1		mg/kg	03.28.2020 03:27	U	1
Total TPH	PHC635	< 50.1	50.1		mg/kg	03.28.2020 03:27	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	111	%	70-135	03.28.2020 03:27
o-Terphenyl	84-15-1	121	%	70-135	03.28.2020 03:27



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS24

Matrix: Soil

Date Received:03.26.2020 15:30

Date Collected: 03.26.2020 09:39

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

% Moisture:

Tech: MAB

Analyst: MAB

Lab Sample Id: 657041-004

Date Prep: 03.27.2020 11:00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.27.2020 18:16	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.27.2020 18:16	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.27.2020 18:16	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.27.2020 18:16	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.27.2020 18:16	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.27.2020 18:16	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.27.2020 18:16	U	1
Surrogate	Ca	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	70-130	03.27.2020 18:16	
1,4-Difluorobenzene	540-36-3	115	%	70-130	03.27.2020 18:16	



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS11A Matrix:

Date Received:03.26.2020 15:30

Lab Sample Id: 657041-005

Soil Date Collected: 03.26.2020 10:40

03.26.2020 20:09

Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

MAB MAB

% Moisture:

Analyst:

Date Prep:

Basis:

Wet Weight

Seq Number: 3121152

Parameter	Cas Number	Result	RL	Units Analysis Date F		Flag	Dil
Chloride	16887-00-6	388	10.0	mg/kg	03.27.2020 10:56		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

DTH

% Moisture:

Analyst: DTH

Tech:

Date Prep: 03.27.2020 17:30 Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.3	50.3		mg/kg	03.28.2020 03:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	90.7	50.3		mg/kg	03.28.2020 03:47		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.3	50.3		mg/kg	03.28.2020 03:47	U	1
Total GRO-DRO	PHC628	90.7	50.3		mg/kg	03.28.2020 03:47		1
Total TPH	PHC635	90.7	50.3		mg/kg	03.28.2020 03:47		1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	115	%	70-135	03.28.2020 03:47
o-Terphenyl	84-15-1	125	%	70-135	03.28.2020 03:47



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Soil

Sample Id: FS11A Matrix:

Date Received:03.26.2020 15:30

Lab Sample Id: 657041-005 Date Collected: 03.26.2020 10:40

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

70-130

Analyst: MAB

Date Prep: 03.27.2020 11:00

Basis: Wet Weight

03.27.2020 18:36

Seq Number: 3121285

4-Bromofluorobenzene

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.27.2020 18:36	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.27.2020 18:36	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.27.2020 18:36	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.27.2020 18:36	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.27.2020 18:36	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.27.2020 18:36	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.27.2020 18:36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	:	540-36-3	116	%	70-130	03.27.2020 18:36		

90

460-00-4



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **SW07**  Matrix: Soil Date Received:03.26.2020 15:30

Lab Sample Id: 657041-006

Date Collected: 03.26.2020 12:27

Sample Depth: 0 - 4.0 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Analyst: MAB MAB

Date Prep: 03.26.2020 20:09 Basis:

Wet Weight

Seq Number: 3121152

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	439	50.4	mg/kg	03.27.2020 11:02		

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

% Moisture:

Tech: Analyst: DTH

DTH

Date Prep: 03.27.2020 17:30 Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	< 50.1	50.1		mg/kg	03.28.2020 04:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	< 50.1	50.1		mg/kg	03.28.2020 04:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	< 50.1	50.1		mg/kg	03.28.2020 04:28	U	1
Total GRO-DRO	PHC628	< 50.1	50.1		mg/kg	03.28.2020 04:28	U	1
Total TPH	PHC635	<50.1	50.1		mg/kg	03.28.2020 04:28	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: **SW07** Matrix:

Lab Sample Id: 657041-006

Soil Date Received:03.26.2020 15:30

Date Collected: 03.26.2020 12:27 Sample Depth: 0 - 4.0 ft

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

% Moisture:

Tech: MAB Analyst: MAB Wet Weight Date Prep: 03.27.2020 11:00 Basis:

Parameter	Cas Number	Result	RL		Units	<b>Analysis Date</b>	Flag	Dil
Benzene	71-43-2	< 0.00199	0.00199		mg/kg	03.27.2020 18:57	U	1
Toluene	108-88-3	< 0.00199	0.00199		mg/kg	03.27.2020 18:57	U	1
Ethylbenzene	100-41-4	< 0.00199	0.00199		mg/kg	03.27.2020 18:57	U	1
m,p-Xylenes	179601-23-1	< 0.00398	0.00398		mg/kg	03.27.2020 18:57	U	1
o-Xylene	95-47-6	< 0.00199	0.00199		mg/kg	03.27.2020 18:57	U	1
Xylenes, Total	1330-20-7	< 0.00199	0.00199		mg/kg	03.27.2020 18:57	U	1
Total BTEX		< 0.00199	0.00199		mg/kg	03.27.2020 18:57	U	1
Surrogate	C	as Number	% Recovery	Units	Limits	Analysis Date	Flag	
4.75 (7)	4.				<b>5</b> 0.400	00 00 0000 10 50		

Surrogate	Cas Number	% Recovery	Units	Limits	<b>Analysis Date</b>	Flag
4-Bromofluorobenzene	460-00-4	92	%	70-130	03.27.2020 18:57	
1,4-Difluorobenzene	540-36-3	115	%	70-130	03.27.2020 18:57	



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS05A Matrix:

Date Prep:

Date Received:03.26.2020 15:30

Lab Sample Id: 657041-007

Soil Date Collected: 03.26.2020 13:23

Sample Depth: 4 ft

Prep Method: E300P

Analytical Method: Chloride by EPA 300

MAB

% Moisture:

Tech: Analyst:

MAB

03.26.2020 20:09

Basis:

70-135

70-135

Wet Weight

Seq Number: 3121152

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	974	49.5	mg/kg	03.27.2020 11:08		5

Analytical Method: TPH by SW8015 Mod

DTH

Tech: Analyst:

DTH

Date Prep:

111-85-3

84-15-1

03.27.2020 17:30

%

% Moisture:

03.28.2020 04:48

03.28.2020 04:48

Basis: Wet Weight

Prep Method: SW8015P

Seq Number: 3121273

1-Chlorooctane

o-Terphenyl

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8		mg/kg	03.28.2020 04:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8		mg/kg	03.28.2020 04:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8		mg/kg	03.28.2020 04:48	U	1
Total GRO-DRO	PHC628	<49.8	49.8		mg/kg	03.28.2020 04:48	U	1
Total TPH	PHC635	<49.8	49.8		mg/kg	03.28.2020 04:48	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

111

121



#### LT Environmental, Inc., Arvada, CO

RDX 17-14

Sample Id: FS05A

Soil

Date Received:03.26.2020 15:30

Date Collected: 03.26.2020 13:23

Sample Depth: 4 ft

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

Matrix:

% Moisture:

Tech: MAB

Analyst: MAB

Lab Sample Id: 657041-007

Date Prep: 03.27.2020 11:00

Wet Weight Basis:

Parameter	Cas Number	Result	$\mathbf{RL}$		Units	Analysis Date	Flag	Dil
Benzene	71-43-2	< 0.00202	0.00202		mg/kg	03.27.2020 19:17	U	1
Toluene	108-88-3	< 0.00202	0.00202		mg/kg	03.27.2020 19:17	U	1
Ethylbenzene	100-41-4	< 0.00202	0.00202		mg/kg	03.27.2020 19:17	U	1
m,p-Xylenes	179601-23-1	< 0.00403	0.00403		mg/kg	03.27.2020 19:17	U	1
o-Xylene	95-47-6	< 0.00202	0.00202		mg/kg	03.27.2020 19:17	U	1
Xylenes, Total	1330-20-7	< 0.00202	0.00202		mg/kg	03.27.2020 19:17	U	1
Total BTEX		< 0.00202	0.00202		mg/kg	03.27.2020 19:17	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene		540-36-3	116	%	70-130	03.27.2020 19:17		

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	70-130	03.27.2020 19:17	
4-Bromofluorobenzene	460-00-4	96	%	70-130	03.27.2020 19:17	



## 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

E300P

E300P

SW8015P

Flag

Flag

Prep Method:

Prep Method:

#### **QC Summary** 657041

#### LT Environmental, Inc.

RDX 17-14

Analytical Method: Chloride by EPA 300

Prep Method: Seq Number: 3121152 Matrix: Solid Date Prep: 03.26.2020

7699897-1-BLK LCS Sample Id: 7699897-1-BKS LCSD Sample Id: 7699897-1-BSD MB Sample Id:

RPD MB Spike LCS LCS Limits %RPD Units Analysis LCSD LCSD Flag **Parameter** Result Amount Result %Rec Result %Rec Limit Date Chloride <10.0 250 106 90-110 20 03.27.2020 09:48 265 266 106 0 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3121152 Matrix: Soil Date Prep: 03.26.2020 657044-004 S

657044-004 MS Sample Id: MSD Sample Id: 657044-004 SD Parent Sample Id:

Parent Spike MS MS MSD MSD Limits %RPD RPD Units Analysis **Parameter** Flag Result Amount Result %Rec %Rec Limit Date Result 03.27.2020 10:05 Chloride 146 200 327 91 337 96 90-110 3 20 mg/kg

Analytical Method: TPH by SW8015 Mod

Seq Number: 3121273 Matrix: Solid Date Prep: 03.27.2020

LCS Sample Id: 7699944-1-BKS LCSD Sample Id: 7699944-1-BSD MB Sample Id: 7699944-1-BLK

Spike **RPD** MB LCS LCS %RPD Units LCSD LCSD Limits Analysis **Parameter** Result %Rec Limit Date Result Amount Result %Rec Gasoline Range Hydrocarbons (GRO) 102 35 03.27.2020 23:22 < 50.0 1000 1020 961 96 70-135 6 mg/kg Diesel Range Organics (DRO) < 50.0 1000 1040 104 1120 112 70-135 7 35 03.27.2020 23:22 mg/kg

MB MB LCS LCS LCSD Limits Units Analysis LCSD **Surrogate** Flag Flag Flag %Rec %Rec %Rec Date 122 03.27.2020 23:22 1-Chlorooctane 108 130 70-135 % o-Terphenyl 113 131 124 70-135 % 03.27.2020 23:22

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P

Seq Number: 3121273 Matrix: Solid Date Prep: 03.27.2020

MB Sample Id: 7699944-1-BLK

MB Units Analysis Flag **Parameter** Result Date

03.27.2020 23:02 Motor Oil Range Hydrocarbons (MRO) < 50.0 mg/kg

SW8015P Analytical Method: TPH by SW8015 Mod Prep Method:

Seq Number: 3121273 Matrix: Soil Date Prep: 03.27.2020

MS Sample Id: 656968-023 S MSD Sample Id: 656968-023 SD Parent Sample Id: 656968-023

Spike MS MS %RPD RPD Parent MSD MSD Limits Units Analysis **Parameter** Limit Result Amount Result %Rec Date Result %Rec Gasoline Range Hydrocarbons (GRO) 03.28.2020 00:23 < 50.3 1010 1040 103 990 99 35 70-135 5 mg/kg 03.28.2020 00:23 1020 Diesel Range Organics (DRO) < 50.3 1010 1100 109 102 70-135 8 35 mg/kg

MS MS **MSD** Units Analysis MSD Limits **Surrogate** Flag Date %Rec Flag %Rec 03.28.2020 00:23 1-Chlorooctane 135 128 70-135 % 03.28.2020 00:23 o-Terphenyl 118 132 70-135 %

MS/MSD Percent Recovery [D] = 100\*(C-A) / BLCS = Laboratory Control Sample RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B] Relative Percent Difference = Parent Result LCS/LCSD Recovery

= MS/LCS Result Log Diff. = Log(Sample Duplicate) - Log(Original Sample) Log Difference = MSD/LCSD Result

MS = Matrix Spike

D = MSD/LCSD % Rec

B = Spike Added



#### **QC Summary** 657041

#### LT Environmental, Inc.

RDX 17-14

Analytical Method: BTEX by EPA 8021B SW5030B Prep Method: Seq Number: 3121285 Matrix: Solid Date Prep: 03.27.2020 LCS Sample Id: 7699890-1-BKS MB Sample Id: 7699890-1-BLK LCSD Sample Id: 7699890-1-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	0.121	121	70-130	11	35	mg/kg	03.27.2020 11:49	
Toluene	< 0.00200	0.100	0.0985	99	0.125	125	70-130	24	35	mg/kg	03.27.2020 11:49	
Ethylbenzene	< 0.00200	0.100	0.0923	92	0.117	117	71-129	24	35	mg/kg	03.27.2020 11:49	
m,p-Xylenes	< 0.00400	0.200	0.180	90	0.227	114	70-135	23	35	mg/kg	03.27.2020 11:49	
o-Xylene	< 0.00200	0.100	0.0903	90	0.115	115	71-133	24	35	mg/kg	03.27.2020 11:49	
Surrogate	MB %Rec	MB Flag			LCS Flag	LCSI %Re			imits	Units	Analysis Date	
1,4-Difluorobenzene	116		10	09		110	)	70	-130	%	03.27.2020 11:49	
4-Bromofluorobenzene	92		8	35		87		70	-130	%	03.27.2020 11:49	

Analytical Method: BTEX by EPA 8021B

Prep Method: Seq Number: 3121285 Matrix: Soil Date Prep: 03.27.2020 MS Sample Id: 656968-018 S MSD Sample Id: 656968-018 SD Parent Sample Id: 656968-018

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	0.122	121	0.124	123	70-130	2	35	mg/kg	03.27.2020 12:29	
Toluene	< 0.00202	0.101	0.111	110	0.111	110	70-130	0	35	mg/kg	03.27.2020 12:29	
Ethylbenzene	< 0.00202	0.101	0.104	103	0.102	101	71-129	2	35	mg/kg	03.27.2020 12:29	
m,p-Xylenes	< 0.00404	0.202	0.202	100	0.196	97	70-135	3	35	mg/kg	03.27.2020 12:29	
o-Xylene	< 0.00202	0.101	0.0998	99	0.102	101	71-133	2	35	mg/kg	03.27.2020 12:29	

MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
110		110		70-130	%	03.27.2020 12:29
86		87		70-130	%	03.27.2020 12:29
	%Rec 110	%Rec Flag	<b>%Rec Flag %Rec</b> 110 110	%Rec         Flag         %Rec         Flag           110         110	%Rec         Flag         %Rec         Flag           110         110         70-130	%Rec         Flag         %Rec         Flag           110         110         70-130         %

SW5030B

Page 184 of 187

8	ABORATORIES
Project Manager:	Chris Mckisson
Company Name:	LT Environmental, Inc.,
Address:	820 Megan Ave, Unit B
City, State ZIP:	Rifle, CO 81650
Phone:	970-285-9985
Project Name:	RDX 17-14
Project Number:	034826011
P.O. Number:	286-9813
Sampler's Name:	Jeremy Hill
SAMPLE RECEIPT	IPT Temp Blank:
Temperature (°C):	2.10
Received Intact:	Yes) No
Cooler Custody Seals:	s: Yes 🐠 N/A
Sample Custody Seals:	ils: Yes No N/A

# Chain of Custody

Work Order No: (05 704)

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)

		WYNUBOUL (ACCI-ZEC-CIC) MINISORDIY (4	180-355-0900) Atlanta GA (770 AAS 8800) T		
t Manager:	t Manager: Chris Mckisson	Dill to	Dill 10: 10: 10: 10: 10: 10: 10: 10: 10: 10:	(813-620-2000) www.xenco.com Page	of (
		on to the direction	Chris Mckisson	Work Order Comments	
any Name:	LT Environmental, Inc.,	Company	1	Silling Course Colling	
		company Name: LI Environmental	LT Environmental	Program: IIST/DST -DBD	
SS:	820 Megan Ave, Unit B	Address:	820 Moore Arm Held		erfund
	0000		ozo wegan Ave, Unit B	State of Project:	
Idle ZIF.	Rifle, CO 81650	City, State ZIP:	Rifle. CO 81650	Reporting: Country Cou	
	970-285-9985	The state of the s		Level III Level III Level IV	veliV
		Cirickisson@itenv.com	ickisson@itenv.com	Deliverables: EDD ADaPT IT Other	

ect Manager:	Chris Mckisson		Bill t	Bill to: (if different)	Bill to: (if different) Chris Mckisson	www.xerico.com rage of (
pany Name:	LT Environmental, Inc.	Inc.,	Com	Company Name	T I I I I I I I I I I I I I I I I I I I	Work Order Comments
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	Dist. 00 04050		, 100		ozo Wegan Ave, Unit B	State of Project:
Sidle ZIF:	Kiffe, CO 81650		City,	City, State ZIP:	Rifle, CO 81650	Tevel III TST/LIST
e:	970-285-9985		Email: Jhillo	eltenv.com,	Email: Jhill@ltenv.com, cmckisson@ltenv.com	
ct Name:	111-LIX00		1000			Other:
	00.16		iurii Around	Duna	ANALYSIS RE	EQUEST Work Order Notes
ct Number:	03489 6011	1	Routine	9		
Number:	JRP-2813		Rush:			
ler's Name:	Jerer	Jeremy Hill	Due Date:			
MPLE RECEIPT	PT Temp Blank:	ank: Yes) No	Walley Was	8		
erature (°C):	2.10		_	ā		
/ed Intact:	Yes) No	1	+00 m /1 -		_	
Custody Seals:	Yes 🐠 N/A		Correction Factor: -0.	7	802	
e Custody Seals:	S: Yes No N/A		Total Containers:	of	A 0=	TAT starts the day recevied by the
Sample Identification	fication Matrix	Date Sampled	Time De	Depth	PH (EPA	lab, if received by 4:30pm
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COMS	S	-	+	,	7	Margania
FSJEA	n		+	-		
FSZH	o					
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Released to Imaging: 9/26/2023 7:55:51 AM

1631 / 245.1 / 7470 / 7471 : Hg

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 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. 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

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

Received by OED

Relinquished by: (Signature)

Received by: (Signature)

De: 5/ 02/ 02/6 Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Date 051418 Rev. 2018.1

Total 200.7 / 6010

200.8 / 6020:

FSOSA Swo7

1333 1217 1040

17

N

A

0-4.0 7

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

#### **XENCO Laboratories**

#### Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Work Order #: 657041

Analyst:

Airon

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

**Date/ Time Received:** 03.26.2020 03.30.00 PM

Temperature Measuring device used: T-NM-007

Date: 03.27.2020

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		2.6	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contai	ner/ 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 relinquish	ned/ received?	Yes	
#10 Chain of Custody agrees with sample la	abels/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 headsp	ace?	N/A	

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

Checklist completed by:	Elizabeth McClellan	Date: <u>03.26.2020</u>	
Checklist reviewed by:	lession teamer		

Jessica Kramer

PH Device/Lot#:

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

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

CONDITIONS

Action 245247

#### **CONDITIONS**

Operator:	OGRID:
WPX Energy Permian, LLC	246289
Devon Energy - Regulatory	Action Number:
Oklahoma City, OK 73102	245247
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	9/26/2023