



Certificate of Analytical Results 653094

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH06**
Lab Sample Id: 653094-011

Matrix: Soil
Date Collected: 02.19.2020 14:30

Date Received: 02.20.2020 10:25
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117209

Date Prep: 02.20.2020 11:30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	02.20.2020 14:11	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117187

Date Prep: 02.20.2020 12:30

Prep Method: SW8015P

% 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	02.20.2020 17:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.20.2020 17:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.20.2020 17:31	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.20.2020 17:31	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.20.2020 17:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.20.2020 17:31	
o-Terphenyl	84-15-1	111	%	70-135	02.20.2020 17:31	



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LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH06**
Lab Sample Id: 653094-011

Matrix: Soil
Date Collected: 02.19.2020 14:30

Date Received: 02.20.2020 10:25
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 11:30

Basis: Wet Weight

Seq Number: 3117186

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.20.2020 20:01	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.20.2020 20:01	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.20.2020 20:01	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.20.2020 20:01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.20.2020 20:01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.20.2020 20:01	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.20.2020 20:01	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.20.2020 20:01	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.20.2020 20:01	



Certificate of Analytical Results 653094

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH06A**
Lab Sample Id: 653094-012

Matrix: Soil
Date Collected: 02.19.2020 14:40

Date Received: 02.20.2020 10:25
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117209

Date Prep: 02.20.2020 11:30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.86	9.86	mg/kg	02.20.2020 14:28	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117187

Date Prep: 02.20.2020 12:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.20.2020 17:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.20.2020 17:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.20.2020 17:51	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	02.20.2020 17:51	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.20.2020 17:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.20.2020 17:51	
o-Terphenyl	84-15-1	96	%	70-135	02.20.2020 17:51	



Certificate of Analytical Results 653094

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH06A**
Lab Sample Id: 653094-012

Matrix: Soil
Date Collected: 02.19.2020 14:40

Date Received: 02.20.2020 10:25
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 11:30

Basis: Wet Weight

Seq Number: 3117186

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.20.2020 20:22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.20.2020 20:22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.20.2020 20:22	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.20.2020 20:22	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.20.2020 20:22	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.20.2020 20:22	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.20.2020 20:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.20.2020 20:22		
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.20.2020 20:22		



Certificate of Analytical Results 653094

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH07** Matrix: Soil Date Received: 02.20.2020 10:25
 Lab Sample Id: 653094-013 Date Collected: 02.19.2020 14:50 Sample Depth: 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: MAB % Moisture:
 Analyst: MAB Date Prep: 02.20.2020 11:30 Basis: Wet Weight
 Seq Number: 3117209

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	02.20.2020 14:33	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DTH % Moisture:
 Analyst: DTH Date Prep: 02.20.2020 12:30 Basis: Wet Weight
 Seq Number: 3117187

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.20.2020 17:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.20.2020 17:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.20.2020 17:51	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.20.2020 17:51	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.20.2020 17:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	02.20.2020 17:51	
o-Terphenyl	84-15-1	104	%	70-135	02.20.2020 17:51	



Certificate of Analytical Results 653094

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH07**
Lab Sample Id: 653094-013

Matrix: Soil
Date Collected: 02.19.2020 14:50

Date Received: 02.20.2020 10:25
Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 11:30

Basis: Wet Weight

Seq Number: 3117186

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.20.2020 20:42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.20.2020 20:42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.20.2020 20:42	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	02.20.2020 20:42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.20.2020 20:42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.20.2020 20:42	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.20.2020 20:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.20.2020 20:42	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.20.2020 20:42	



Certificate of Analytical Results 653094

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH07A**
Lab Sample Id: 653094-014

Matrix: Soil
Date Collected: 02.19.2020 15:00

Date Received: 02.20.2020 10:25
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117209

Date Prep: 02.20.2020 11:30

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	02.20.2020 14:50	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117187

Date Prep: 02.20.2020 12:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.20.2020 18:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.20.2020 18:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.20.2020 18:11	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.20.2020 18:11	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.20.2020 18:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.20.2020 18:11	
o-Terphenyl	84-15-1	94	%	70-135	02.20.2020 18:11	



Certificate of Analytical Results 653094

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH07A**
Lab Sample Id: 653094-014

Matrix: Soil
Date Collected: 02.19.2020 15:00

Date Received: 02.20.2020 10:25
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.20.2020 11:30

Basis: Wet Weight

Seq Number: 3117186

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.20.2020 21:03	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.20.2020 21:03	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.20.2020 21:03	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.20.2020 21:03	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.20.2020 21:03	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.20.2020 21:03	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.20.2020 21:03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.20.2020 21:03	
4-Bromofluorobenzene	460-00-4	98	%	70-130	02.20.2020 21:03	



Flagging Criteria

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
North Seven Rivers

Analytical Method: Chloride by EPA 300

Seq Number: 3117209

MB Sample Id: 7697118-1-BLK

Matrix: Solid

LCS Sample Id: 7697118-1-BKS

Prep Method: E300P

Date Prep: 02.20.2020

LCSD Sample Id: 7697118-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	265	106	265	106	90-110	0	20	mg/kg	02.20.2020 12:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3117209

Parent Sample Id: 653094-001

Matrix: Soil

MS Sample Id: 653094-001 S

Prep Method: E300P

Date Prep: 02.20.2020

MSD Sample Id: 653094-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.02	200	207	102	209	103	90-110	1	20	mg/kg	02.20.2020 12:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3117209

Parent Sample Id: 653094-011

Matrix: Soil

MS Sample Id: 653094-011 S

Prep Method: E300P

Date Prep: 02.20.2020

MSD Sample Id: 653094-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.80	200	218	107	217	107	90-110	0	20	mg/kg	02.20.2020 14:16	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117187

MB Sample Id: 7697163-1-BLK

Matrix: Solid

LCS Sample Id: 7697163-1-BKS

Prep Method: SW8015P

Date Prep: 02.20.2020

LCSD Sample Id: 7697163-1-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	897	90	895	90	70-135	0	35	mg/kg	02.20.2020 14:13	
Diesel Range Organics (DRO)	<50.0	1000	1020	102	974	97	70-135	5	35	mg/kg	02.20.2020 14:13	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	90		114		105		70-135	%	02.20.2020 14:13
o-Terphenyl	94		118		104		70-135	%	02.20.2020 14:13

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117187

Matrix: Solid

MB Sample Id: 7697163-1-BLK

Prep Method: SW8015P

Date Prep: 02.20.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.20.2020 14:13	

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

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

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

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



LT Environmental, Inc.
North Seven Rivers

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117187

Parent Sample Id: 652839-003

Matrix: Soil

MS Sample Id: 652839-003 S

Prep Method: SW8015P

Date Prep: 02.20.2020

MSD Sample Id: 652839-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	933	93	914	92	70-135	2	35	mg/kg	02.20.2020 14:53	
Diesel Range Organics (DRO)	<50.2	1000	987	99	1050	105	70-135	6	35	mg/kg	02.20.2020 14:53	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	132		117		70-135	%	02.20.2020 14:53
o-Terphenyl	109		110		70-135	%	02.20.2020 14:53

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117186

MB Sample Id: 7697112-1-BLK

Matrix: Solid

LCS Sample Id: 7697112-1-BKS

Prep Method: SW5030B

Date Prep: 02.20.2020

LCSD Sample Id: 7697112-1-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	0.103	103	0.101	101	70-130	2	35	mg/kg	02.20.2020 12:33	
Toluene	<0.00200	0.100	0.101	101	0.0984	98	70-130	3	35	mg/kg	02.20.2020 12:33	
Ethylbenzene	<0.00200	0.100	0.0983	98	0.0951	95	71-129	3	35	mg/kg	02.20.2020 12:33	
m,p-Xylenes	<0.00400	0.200	0.203	102	0.196	98	70-135	4	35	mg/kg	02.20.2020 12:33	
o-Xylene	<0.00200	0.100	0.101	101	0.0978	98	71-133	3	35	mg/kg	02.20.2020 12:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		104		70-130	%	02.20.2020 12:33
4-Bromofluorobenzene	93		93		94		70-130	%	02.20.2020 12:33

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117186

Parent Sample Id: 652839-003

Matrix: Soil

MS Sample Id: 652839-003 S

Prep Method: SW5030B

Date Prep: 02.20.2020

MSD Sample Id: 652839-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.102	101	0.124	124	70-130	19	35	mg/kg	02.20.2020 13:14	
Toluene	<0.00202	0.101	0.110	109	0.121	121	70-130	10	35	mg/kg	02.20.2020 13:14	
Ethylbenzene	<0.00202	0.101	0.107	106	0.117	117	71-129	9	35	mg/kg	02.20.2020 13:14	
m,p-Xylenes	<0.00404	0.202	0.224	111	0.240	120	70-135	7	35	mg/kg	02.20.2020 13:14	
o-Xylene	<0.00202	0.101	0.111	110	0.118	118	71-133	6	35	mg/kg	02.20.2020 13:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		104		70-130	%	02.20.2020 13:14
4-Bromofluorobenzene	96		92		70-130	%	02.20.2020 13:14

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

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

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

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



Chain of Custody

Work Order No: 1639094

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

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	sls@ltenv.com, dmoir@ltenv.com, accole@ltenv.com

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

Project Name:	North Seven Rivers	Turn Around	Routine ☐
Project Number:	02919196	Rush:	24H
P.O. Number:		Due Date:	
Sampler's Name:	Spencer Lo		

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
Temperature (°C):	0.4	Thermometer ID	TNN007	
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2	
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	14	
Sample Custody Seals:	Yes ☒ No ☐ N/A			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8015)	Chloride (EPA 8015)	Sample Comments									
PH01	5	2-19-20	1230	1'	1	X	X	X										
PH014			1230	2'														
PH02			1250	1'														
PH024			1300	2'														
PH03			1320	1'														
PH034			1330	2'														
PH04			1350	1'														
PH044			1400	2'														
PH05			1410	1'														
PH05A	1	1	1420	2'	1	X	X	X										
Total 200.7 / 6010 200.8 / 6020																		

Total 200.7 / 6010 200.8 / 6020:

 Circle Method(s) and Metal(s) to be analyzed: 8RCRA 13PPM Texas 11 A1 Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U

1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		7/6/20 10:25			



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) 794-1298
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Chain of Custody

Work Order No: 653094

www.xenco.com Page 2 of 2

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slo@ltenv.com, dmoir@ltenv.com, acolle@ltenv.com
Project Name:	North Seven Rivers	Turn Around	
Project Number:	012919196	Routine	☐
P.O. Number:		Rush:	244
Sampler's Name:	Spencer Lo	Due Date:	

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EP	BTEX (E	Chloride	Sample Comments
PH06	S	2-19-20	1430	1'	1	X	X	X	
PH06A			1440	2'					
PH07			1450	1'					
PH07A			1500	2'					

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

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

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date/Time 2/10/20 1025

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date/Time 2/10/20 1025

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date/Time 2/10/20 1025

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date/Time 2/10/20 1025

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date/Time 2/10/20 1025

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date/Time 2/10/20 1025

Analytical Report 653452

for
LT Environmental, Inc.

Project Manager: Dan Moir

North Seven Rivers

012919196

25-FEB-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-FEB-20

Project Manager: **Dan Moir**

LT Environmental, Inc.

4600 W. 60th Avenue

Arvada, CO 80003

Reference: XENCO Report No(s): **653452**

North Seven Rivers

Project Address:

Dan Moir:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 653452. 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. 653452 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

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

Jessica Kramer

Project Assistant

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

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

**Sample Cross Reference 653452****LT Environmental, Inc., Arvada, CO**

North Seven Rivers

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
PH08	S	02-21-20 12:15	1 ft	653452-001
PH08A	S	02-21-20 12:25	2 ft	653452-002
PH09	S	02-21-20 11:20	1 ft	653452-003
PH09A	S	02-21-20 11:25	2 ft	653452-004
PH10	S	02-21-20 11:35	1 ft	653452-005
PH10A	S	02-21-20 11:45	2 ft	653452-006
PH11	S	02-21-20 12:40	1 ft	653452-007
PH11A	S	02-21-20 12:50	2 ft	653452-008
PH12	S	02-21-20 14:00	1 ft	653452-009
PH12A	S	02-21-20 14:10	2 ft	653452-010
PH13	S	02-21-20 14:25	1 ft	653452-011
PH13A	S	02-21-20 14:35	2 ft	653452-012
PH14	S	02-21-20 14:50	1 ft	653452-013
PH14A	S	02-21-20 15:00	2 ft	653452-014



CASE NARRATIVE

Client Name: LT Environmental, Inc.

Project Name: North Seven Rivers

Project ID: 012919196
Work Order Number(s): 653452

Report Date: 25-FEB-20
Date Received: 02/24/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3117500 BTEX by EPA 8021B

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

Batch: LBA-3117524 TPH by SW8015 Mod

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

Samples affected are: 653452-012.



Certificate of Analysis Summary 653452

LT Environmental, Inc., Arvada, CO

Project Name: North Seven Rivers

Project Id: 012919196

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Feb-24-20 10:55 am

Report Date: 25-FEB-20

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	653452-001	653452-002	653452-003	653452-004	653452-005	653452-006
	<i>Field Id:</i>	PH08	PH08A	PH09	PH09A	PH10	PH10A
	<i>Depth:</i>	1- ft	2- ft	1- ft	2- ft	1- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-21-20 12:15	Feb-21-20 12:25	Feb-21-20 11:20	Feb-21-20 11:25	Feb-21-20 11:35	Feb-21-20 11:45
BTEX by EPA 8021B	<i>Extracted:</i>	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *	*** ** *
	<i>Analyzed:</i>	Feb-25-20 08:54	Feb-25-20 09:14	Feb-24-20 18:31	Feb-24-20 18:52	Feb-24-20 19:12	Feb-24-20 19:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Toluene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
m,p-Xylenes		<0.00399 0.00399	<0.00398 0.00398	<0.00403 0.00403	<0.00402 0.00402	<0.00403 0.00403	<0.00404 0.00404
o-Xylene		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Total BTEX		<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202	<0.00201 0.00201	<0.00202 0.00202	<0.00202 0.00202
Chloride by EPA 300	<i>Extracted:</i>	Feb-24-20 11:40	Feb-24-20 11:40	Feb-24-20 11:40	Feb-24-20 11:40	Feb-24-20 13:00	Feb-24-20 13:00
	<i>Analyzed:</i>	Feb-24-20 13:03	Feb-24-20 13:09	Feb-24-20 13:15	Feb-24-20 13:20	Feb-24-20 13:54	Feb-24-20 14:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		10.2 10.1	238 10.0	<10.0 10.0	<10.0 10.0	<9.96 9.96	45.6 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-24-20 17:00	Feb-24-20 17:00	Feb-24-20 17:00	Feb-24-20 17:00	Feb-24-20 17:00	Feb-24-20 17:00
	<i>Analyzed:</i>	Feb-24-20 20:50	Feb-24-20 22:11	Feb-24-20 22:31	Feb-24-20 22:31	Feb-24-20 22:51	Feb-24-20 23:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<49.9 49.9	<50.2 50.2	<50.1 50.1	<50.3 50.3	<50.2 50.2
Diesel Range Organics (DRO)		<49.9 49.9	<49.9 49.9	<50.2 50.2	<50.1 50.1	<50.3 50.3	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<49.9 49.9	<50.2 50.2	<50.1 50.1	<50.3 50.3	<50.2 50.2
Total GRO-DRO		<49.9 49.9	<49.9 49.9	<50.2 50.2	<50.1 50.1	<50.3 50.3	<50.2 50.2
Total TPH		<49.9 49.9	<49.9 49.9	<50.2 50.2	<50.1 50.1	<50.3 50.3	<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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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 653452

LT Environmental, Inc., Arvada, CO

Project Name: North Seven Rivers

Project Id: 012919196

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Feb-24-20 10:55 am

Report Date: 25-FEB-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	653452-007	653452-008	653452-009	653452-010	653452-011	653452-012
	Field Id:	PH11	PH11A	PH12	PH12A	PH13	PH13A
	Depth:	1- ft	2- ft	1- ft	2- ft	1- ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Feb-21-20 12:40	Feb-21-20 12:50	Feb-21-20 14:00	Feb-21-20 14:10	Feb-21-20 14:25	Feb-21-20 14:35
BTEX by EPA 8021B	Extracted:	*** ** *	Feb-24-20 13:00	Feb-24-20 13:00	Feb-24-20 13:00	Feb-24-20 13:00	Feb-24-20 13:00
	Analyzed:	Feb-24-20 19:53	Feb-24-20 16:25	Feb-24-20 16:45	Feb-24-20 17:06	Feb-24-20 17:26	Feb-24-20 17:46
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00399 0.00399	<0.00399 0.00399	<0.00404 0.00404	<0.00404 0.00404	<0.00399 0.00399	<0.00399 0.00399
o-Xylene		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	Extracted:	Feb-24-20 13:00	Feb-24-20 13:00	Feb-24-20 13:00	Feb-24-20 13:00	Feb-24-20 13:00	Feb-24-20 13:00
	Analyzed:	Feb-24-20 14:17	Feb-24-20 14:23	Feb-24-20 14:29	Feb-24-20 14:34	Feb-24-20 14:51	Feb-24-20 14:56
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<10.0 10.0	11.2 10.1	11.5 10.1	<9.98 9.98	<9.94 9.94	<9.98 9.98
TPH by SW8015 Mod	Extracted:	Feb-24-20 17:00	Feb-24-20 17:00	Feb-24-20 17:00	Feb-24-20 17:00	Feb-24-20 17:00	Feb-24-20 17:10
	Analyzed:	Feb-24-20 23:11	Feb-24-20 23:31	Feb-24-20 23:31	Feb-24-20 23:52	Feb-24-20 23:52	Feb-25-20 02:12
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.1 50.1	<50.0 50.0	<50.2 50.2
Diesel Range Organics (DRO)		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.1 50.1	<50.0 50.0	<50.2 50.2
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.1 50.1	<50.0 50.0	<50.2 50.2
Total GRO-DRO		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.1 50.1	<50.0 50.0	<50.2 50.2
Total TPH		<50.2 50.2	<50.0 50.0	<49.9 49.9	<50.1 50.1	<50.0 50.0	<50.2 50.2

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Jessica Kramer
Project Assistant



Certificate of Analysis Summary 653452

LT Environmental, Inc., Arvada, CO

Project Name: North Seven Rivers

Project Id: 012919196

Contact: Dan Moir

Project Location:

Date Received in Lab: Mon Feb-24-20 10:55 am

Report Date: 25-FEB-20

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	653452-013	653452-014				
	Field Id:	PH14	PH14A				
	Depth:	1- ft	2- ft				
	Matrix:	SOIL	SOIL				
	Sampled:	Feb-21-20 14:50	Feb-21-20 15:00				
BTEX by EPA 8021B	Extracted:	Feb-24-20 13:00	Feb-24-20 13:00				
	Analyzed:	Feb-24-20 18:07	Feb-24-20 18:27				
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		<0.00199 0.00199	<0.00199 0.00199				
Toluene		<0.00199 0.00199	<0.00199 0.00199				
Ethylbenzene		<0.00199 0.00199	<0.00199 0.00199				
m,p-Xylenes		<0.00398 0.00398	<0.00398 0.00398				
o-Xylene		<0.00199 0.00199	<0.00199 0.00199				
Total Xylenes		<0.00199 0.00199	<0.00199 0.00199				
Total BTEX		<0.00199 0.00199	<0.00199 0.00199				
Chloride by EPA 300	Extracted:	Feb-24-20 13:00	Feb-24-20 13:00				
	Analyzed:	Feb-24-20 15:02	Feb-24-20 15:08				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		<9.96 9.96	<9.96 9.96				
TPH by SW8015 Mod	Extracted:	Feb-24-20 17:10	Feb-24-20 17:10				
	Analyzed:	Feb-25-20 02:32	Feb-25-20 02:52				
	Units/RL:	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		<50.1 50.1	<49.9 49.9				
Diesel Range Organics (DRO)		<50.1 50.1	<49.9 49.9				
Motor Oil Range Hydrocarbons (MRO)		<50.1 50.1	<49.9 49.9				
Total GRO-DRO		<50.1 50.1	<49.9 49.9				
Total TPH		<50.1 50.1	<49.9 49.9				

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

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

Jessica Kramer
Project Assistant



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH08**
Lab Sample Id: 653452-001

Matrix: Soil
Date Collected: 02.21.20 12.15

Date Received: 02.24.20 10.55
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117433

Date Prep: 02.24.20 11.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.2	10.1	mg/kg	02.24.20 13.03		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.24.20 20.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.24.20 20.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.24.20 20.50	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	02.24.20 20.50	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.24.20 20.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	02.24.20 20.50	
o-Terphenyl	84-15-1	124	%	70-135	02.24.20 20.50	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH08**
 Lab Sample Id: 653452-001

Matrix: Soil
 Date Collected: 02.21.20 12.15

Date Received: 02.24.20 10.55
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.24.20 10.00

Basis: Wet Weight

Seq Number: 3117499

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.25.20 08.54	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.25.20 08.54	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.25.20 08.54	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.25.20 08.54	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.25.20 08.54	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.25.20 08.54	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.25.20 08.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.25.20 08.54		
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.25.20 08.54		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH08A**
Lab Sample Id: 653452-002

Matrix: Soil
Date Collected: 02.21.20 12.25

Date Received: 02.24.20 10.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117433

Date Prep: 02.24.20 11.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	238	10.0	mg/kg	02.24.20 13.09		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.24.20 22.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.24.20 22.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.24.20 22.11	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	02.24.20 22.11	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.24.20 22.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	02.24.20 22.11	
o-Terphenyl	84-15-1	133	%	70-135	02.24.20 22.11	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH08A**
 Lab Sample Id: 653452-002

Matrix: Soil
 Date Collected: 02.21.20 12.25

Date Received: 02.24.20 10.55
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.24.20 10.00

Basis: Wet Weight

Seq Number: 3117499

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.25.20 09.14	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.25.20 09.14	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.25.20 09.14	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.25.20 09.14	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.25.20 09.14	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.25.20 09.14	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.25.20 09.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	96	%	70-130	02.25.20 09.14		
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.25.20 09.14		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH09**
Lab Sample Id: 653452-003

Matrix: Soil
Date Collected: 02.21.20 11.20

Date Received: 02.24.20 10.55
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117433

Date Prep: 02.24.20 11.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	02.24.20 13.15	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% 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	02.24.20 22.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.24.20 22.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.24.20 22.31	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.24.20 22.31	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.24.20 22.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.24.20 22.31	
o-Terphenyl	84-15-1	113	%	70-135	02.24.20 22.31	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH09**
 Lab Sample Id: 653452-003

Matrix: Soil
 Date Collected: 02.21.20 11.20

Date Received: 02.24.20 10.55
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.24.20 10.00

Basis: Wet Weight

Seq Number: 3117499

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.24.20 18.31	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.24.20 18.31	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.24.20 18.31	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.24.20 18.31	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.24.20 18.31	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.24.20 18.31	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.24.20 18.31	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.24.20 18.31		
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.24.20 18.31		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH09A**
Lab Sample Id: 653452-004

Matrix: Soil
Date Collected: 02.21.20 11.25

Date Received: 02.24.20 10.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117433

Date Prep: 02.24.20 11.40

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	02.24.20 13.20	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% 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	02.24.20 22.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.24.20 22.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.24.20 22.31	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.24.20 22.31	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.24.20 22.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	02.24.20 22.31	
o-Terphenyl	84-15-1	139	%	70-135	02.24.20 22.31	**



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH09A**
 Lab Sample Id: 653452-004

Matrix: Soil
 Date Collected: 02.21.20 11.25

Date Received: 02.24.20 10.55
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.24.20 10.00

Basis: Wet Weight

Seq Number: 3117499

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.24.20 18.52	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.24.20 18.52	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.24.20 18.52	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.24.20 18.52	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.24.20 18.52	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.24.20 18.52	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.24.20 18.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.24.20 18.52		
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.24.20 18.52		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH10**
Lab Sample Id: 653452-005

Matrix: Soil
Date Collected: 02.21.20 11.35

Date Received: 02.24.20 10.55
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117446

Date Prep: 02.24.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	02.24.20 13.54	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.24.20 22.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	02.24.20 22.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.24.20 22.51	U	1
Total GRO-DRO	PHC628	<50.3	50.3	mg/kg	02.24.20 22.51	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	02.24.20 22.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	02.24.20 22.51	
o-Terphenyl	84-15-1	120	%	70-135	02.24.20 22.51	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH10**
 Lab Sample Id: 653452-005

Matrix: Soil
 Date Collected: 02.21.20 11.35

Date Received: 02.24.20 10.55
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3117499

Date Prep: 02.24.20 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.24.20 19.12	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.24.20 19.12	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.24.20 19.12	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.24.20 19.12	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.24.20 19.12	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.24.20 19.12	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.24.20 19.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.24.20 19.12		
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.24.20 19.12		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH10A**
Lab Sample Id: 653452-006

Matrix: Soil
Date Collected: 02.21.20 11.45

Date Received: 02.24.20 10.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117446

Date Prep: 02.24.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.6	10.0	mg/kg	02.24.20 14.11		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% 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	02.24.20 23.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.24.20 23.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.24.20 23.11	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.24.20 23.11	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.24.20 23.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	02.24.20 23.11	
o-Terphenyl	84-15-1	131	%	70-135	02.24.20 23.11	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH10A**
Lab Sample Id: 653452-006

Matrix: Soil
Date Collected: 02.21.20 11.45

Date Received: 02.24.20 10.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.24.20 10.00

Basis: Wet Weight

Seq Number: 3117499

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.24.20 19.32	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.24.20 19.32	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.24.20 19.32	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.24.20 19.32	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.24.20 19.32	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.24.20 19.32	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.24.20 19.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.24.20 19.32		
4-Bromofluorobenzene	460-00-4	96	%	70-130	02.24.20 19.32		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH11**
Lab Sample Id: 653452-007

Matrix: Soil
Date Collected: 02.21.20 12.40

Date Received: 02.24.20 10.55
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117446

Date Prep: 02.24.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<10.0	10.0	mg/kg	02.24.20 14.17	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% 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	02.24.20 23.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.24.20 23.11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.24.20 23.11	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.24.20 23.11	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.24.20 23.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	02.24.20 23.11	
o-Terphenyl	84-15-1	126	%	70-135	02.24.20 23.11	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH11**
 Lab Sample Id: 653452-007

Matrix: Soil
 Date Collected: 02.21.20 12.40

Date Received: 02.24.20 10.55
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3117499

Date Prep: 02.24.20 10.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.24.20 19.53	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.24.20 19.53	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.24.20 19.53	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.24.20 19.53	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.24.20 19.53	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.24.20 19.53	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.24.20 19.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.24.20 19.53		
4-Bromofluorobenzene	460-00-4	93	%	70-130	02.24.20 19.53		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH11A**
Lab Sample Id: 653452-008

Matrix: Soil
Date Collected: 02.21.20 12.50

Date Received: 02.24.20 10.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117446

Date Prep: 02.24.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.2	10.1	mg/kg	02.24.20 14.23		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.24.20 23.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.24.20 23.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.24.20 23.31	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.24.20 23.31	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.24.20 23.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	02.24.20 23.31	
o-Terphenyl	84-15-1	124	%	70-135	02.24.20 23.31	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH11A**
 Lab Sample Id: 653452-008

Matrix: Soil
 Date Collected: 02.21.20 12.50

Date Received: 02.24.20 10.55
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.24.20 13.00

Basis: Wet Weight

Seq Number: 3117500

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.24.20 16.25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.24.20 16.25	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.24.20 16.25	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.24.20 16.25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.24.20 16.25	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.24.20 16.25	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.24.20 16.25	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	02.24.20 16.25		
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.24.20 16.25		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH12**
Lab Sample Id: 653452-009

Matrix: Soil
Date Collected: 02.21.20 14.00

Date Received: 02.24.20 10.55
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117446

Date Prep: 02.24.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.5	10.1	mg/kg	02.24.20 14.29		1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.24.20 23.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.24.20 23.31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.24.20 23.31	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	02.24.20 23.31	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.24.20 23.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	02.24.20 23.31	
o-Terphenyl	84-15-1	127	%	70-135	02.24.20 23.31	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH12**
 Lab Sample Id: 653452-009

Matrix: Soil
 Date Collected: 02.21.20 14.00

Date Received: 02.24.20 10.55
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3117500

Date Prep: 02.24.20 13.00

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.24.20 16.45	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.24.20 16.45	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.24.20 16.45	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.24.20 16.45	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.24.20 16.45	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.24.20 16.45	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.24.20 16.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	112	%	70-130	02.24.20 16.45		
4-Bromofluorobenzene	460-00-4	93	%	70-130	02.24.20 16.45		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH12A**
Lab Sample Id: 653452-010

Matrix: Soil
Date Collected: 02.21.20 14.10

Date Received: 02.24.20 10.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117446

Date Prep: 02.24.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	02.24.20 14.34	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% 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	02.24.20 23.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.24.20 23.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.24.20 23.52	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.24.20 23.52	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.24.20 23.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	02.24.20 23.52	
o-Terphenyl	84-15-1	123	%	70-135	02.24.20 23.52	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH12A**
 Lab Sample Id: 653452-010

Matrix: Soil
 Date Collected: 02.21.20 14.10

Date Received: 02.24.20 10.55
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.24.20 13.00

Basis: Wet Weight

Seq Number: 3117500

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.24.20 17.06	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.24.20 17.06	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.24.20 17.06	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	02.24.20 17.06	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.24.20 17.06	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.24.20 17.06	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.24.20 17.06	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.24.20 17.06		
1,4-Difluorobenzene	540-36-3	113	%	70-130	02.24.20 17.06		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH13**
Lab Sample Id: 653452-011

Matrix: Soil
Date Collected: 02.21.20 14.25

Date Received: 02.24.20 10.55
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117446

Date Prep: 02.24.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.94	9.94	mg/kg	02.24.20 14.51	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117571

Date Prep: 02.24.20 17.00

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.24.20 23.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.24.20 23.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.24.20 23.52	U	1
Total GRO-DRO	PHC628	<50.0	50.0	mg/kg	02.24.20 23.52	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.24.20 23.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	02.24.20 23.52	
o-Terphenyl	84-15-1	124	%	70-135	02.24.20 23.52	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH13**
 Lab Sample Id: 653452-011

Matrix: Soil
 Date Collected: 02.21.20 14.25

Date Received: 02.24.20 10.55
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.24.20 13.00

Basis: Wet Weight

Seq Number: 3117500

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.24.20 17.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.24.20 17.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.24.20 17.26	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.24.20 17.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.24.20 17.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.24.20 17.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.24.20 17.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	02.24.20 17.26		
1,4-Difluorobenzene	540-36-3	114	%	70-130	02.24.20 17.26		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH13A**
Lab Sample Id: 653452-012

Matrix: Soil
Date Collected: 02.21.20 14.35

Date Received: 02.24.20 10.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117446

Date Prep: 02.24.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.98	9.98	mg/kg	02.24.20 14.56	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117524

Date Prep: 02.24.20 17.10

Prep Method: SW8015P

% 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	02.25.20 02.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.25.20 02.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.25.20 02.12	U	1
Total GRO-DRO	PHC628	<50.2	50.2	mg/kg	02.25.20 02.12	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.25.20 02.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	02.25.20 02.12	
o-Terphenyl	84-15-1	145	%	70-135	02.25.20 02.12	**



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH13A**
Lab Sample Id: 653452-012

Matrix: Soil
Date Collected: 02.21.20 14.35

Date Received: 02.24.20 10.55
Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Tech: MAB

Analyst: MAB

Seq Number: 3117500

Prep Method: SW5030B

% Moisture:

Date Prep: 02.24.20 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.24.20 17.46	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.24.20 17.46	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.24.20 17.46	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	02.24.20 17.46	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.24.20 17.46	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.24.20 17.46	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.24.20 17.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	02.24.20 17.46		
4-Bromofluorobenzene	460-00-4	92	%	70-130	02.24.20 17.46		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH14**
Lab Sample Id: 653452-013

Matrix: Soil
Date Collected: 02.21.20 14.50

Date Received: 02.24.20 10.55
Sample Depth: 1 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117446

Date Prep: 02.24.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	02.24.20 15.02	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117524

Date Prep: 02.24.20 17.10

Prep Method: SW8015P

% 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	02.25.20 02.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.25.20 02.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.25.20 02.32	U	1
Total GRO-DRO	PHC628	<50.1	50.1	mg/kg	02.25.20 02.32	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.25.20 02.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	02.25.20 02.32	
o-Terphenyl	84-15-1	112	%	70-135	02.25.20 02.32	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH14**
 Lab Sample Id: 653452-013

Matrix: Soil
 Date Collected: 02.21.20 14.50

Date Received: 02.24.20 10.55
 Sample Depth: 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.24.20 13.00

Basis: Wet Weight

Seq Number: 3117500

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.24.20 18.07	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.24.20 18.07	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.24.20 18.07	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.24.20 18.07	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.24.20 18.07	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.24.20 18.07	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.24.20 18.07	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
4-Bromofluorobenzene	460-00-4	93	%	70-130	02.24.20 18.07		
1,4-Difluorobenzene	540-36-3	112	%	70-130	02.24.20 18.07		



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH14A**
Lab Sample Id: 653452-014

Matrix: Soil
Date Collected: 02.21.20 15.00

Date Received: 02.24.20 10.55
Sample Depth: 2 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3117446

Date Prep: 02.24.20 13.00

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<9.96	9.96	mg/kg	02.24.20 15.08	U	1

Analytical Method: TPH by SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3117524

Date Prep: 02.24.20 17.10

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.25.20 02.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.25.20 02.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.25.20 02.52	U	1
Total GRO-DRO	PHC628	<49.9	49.9	mg/kg	02.25.20 02.52	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.25.20 02.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	02.25.20 02.52	
o-Terphenyl	84-15-1	117	%	70-135	02.25.20 02.52	



Certificate of Analytical Results 653452

LT Environmental, Inc., Arvada, CO

North Seven Rivers

Sample Id: **PH14A**
 Lab Sample Id: 653452-014

Matrix: Soil
 Date Collected: 02.21.20 15.00

Date Received: 02.24.20 10.55
 Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 02.24.20 13.00

Basis: Wet Weight

Seq Number: 3117500

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.24.20 18.27	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.24.20 18.27	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.24.20 18.27	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.24.20 18.27	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.24.20 18.27	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.24.20 18.27	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.24.20 18.27	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	113	%	70-130	02.24.20 18.27		
4-Bromofluorobenzene	460-00-4	96	%	70-130	02.24.20 18.27		



Flagging Criteria

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

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



LT Environmental, Inc.
North Seven Rivers

Analytical Method: Chloride by EPA 300

Seq Number: 3117433

MB Sample Id: 7697297-1-BLK

Matrix: Solid

LCS Sample Id: 7697297-1-BKS

Prep Method: E300P

Date Prep: 02.24.20

LCSD Sample Id: 7697297-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	253	101	253	101	90-110	0	20	mg/kg	02.24.20 10:21	

Analytical Method: Chloride by EPA 300

Seq Number: 3117446

MB Sample Id: 7697329-1-BLK

Matrix: Solid

LCS Sample Id: 7697329-1-BKS

Prep Method: E300P

Date Prep: 02.24.20

LCSD Sample Id: 7697329-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	253	101	254	102	90-110	0	20	mg/kg	02.24.20 13:42	

Analytical Method: Chloride by EPA 300

Seq Number: 3117433

Parent Sample Id: 653380-001

Matrix: Soil

MS Sample Id: 653380-001 S

Prep Method: E300P

Date Prep: 02.24.20

MSD Sample Id: 653380-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	128	199	337	105	359	117	90-110	6	20	mg/kg	02.24.20 11:51	X

Analytical Method: Chloride by EPA 300

Seq Number: 3117433

Parent Sample Id: 653401-001

Matrix: Soil

MS Sample Id: 653401-001 S

Prep Method: E300P

Date Prep: 02.24.20

MSD Sample Id: 653401-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	254	200	461	104	462	104	90-110	0	20	mg/kg	02.24.20 10:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3117446

Parent Sample Id: 653452-005

Matrix: Soil

MS Sample Id: 653452-005 S

Prep Method: E300P

Date Prep: 02.24.20

MSD Sample Id: 653452-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.07	200	209	103	208	102	90-110	0	20	mg/kg	02.24.20 13:59	

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

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

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

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



LT Environmental, Inc.

North Seven Rivers

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117571

MB Sample Id: 7697385-1-BLK

Matrix: Solid

LCS Sample Id: 7697385-1-BKS

Prep Method: SW8015P

Date Prep: 02.24.20

LCSD Sample Id: 7697385-1-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	832	83	795	80	70-135	5	35	mg/kg	02.24.20 20:30	
Diesel Range Organics (DRO)	<50.0	1000	940	94	851	85	70-135	10	35	mg/kg	02.24.20 20:30	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag		LCSD %Rec	LCSD Flag	Limits		Units	Analysis Date	
1-Chlorooctane	122		113			115		70-135		%	02.24.20 20:30	
o-Terphenyl	135		117			104		70-135		%	02.24.20 20:30	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117524

MB Sample Id: 7697386-1-BLK

Matrix: Solid

LCS Sample Id: 7697386-1-BKS

Prep Method: SW8015P

Date Prep: 02.24.20

LCSD Sample Id: 7697386-1-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	959	96	963	96	70-135	0	35	mg/kg	02.25.20 01:52	
Diesel Range Organics (DRO)	<50.0	1000	882	88	984	98	70-135	11	35	mg/kg	02.25.20 01:52	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date	Flag		
1-Chlorooctane	115		104		108		70-135	%	02.25.20 01:52			
o-Terphenyl	132		108		108		70-135	%	02.25.20 01:52			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117571

Matrix: Solid

MB Sample Id: 7697385-1-BLK

Prep Method: SW8015P

Date Prep: 02.24.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.24.20 20:30	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117524

Matrix: Solid

MB Sample Id: 7697386-1-BLK

Prep Method: SW8015P

Date Prep: 02.24.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.25.20 01:32	

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

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

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

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



LT Environmental, Inc.

North Seven Rivers

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117571

Parent Sample Id: 653452-001

Matrix: Soil

MS Sample Id: 653452-001 S

Prep Method: SW8015P

Date Prep: 02.24.20

MSD Sample Id: 653452-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	996	100	963	96	70-135	3	35	mg/kg	02.24.20 21:10	
Diesel Range Organics (DRO)	<50.2	1000	913	91	905	91	70-135	1	35	mg/kg	02.24.20 21:10	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		103		70-135	%	02.24.20 21:10
o-Terphenyl	110		106		70-135	%	02.24.20 21:10

Analytical Method: TPH by SW8015 Mod

Seq Number: 3117524

Parent Sample Id: 653452-012

Matrix: Soil

MS Sample Id: 653452-012 S

Prep Method: SW8015P

Date Prep: 02.24.20

MSD Sample Id: 653452-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.2	1000	1000	100	841	84	70-135	17	35	mg/kg	02.25.20 02:12	
Diesel Range Organics (DRO)	<50.2	1000	1030	103	789	79	70-135	26	35	mg/kg	02.25.20 02:12	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	117		102		70-135	%	02.25.20 02:12
o-Terphenyl	119		91		70-135	%	02.25.20 02:12

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117499

MB Sample Id: 7697295-1-BLK

Matrix: Solid

LCS Sample Id: 7697295-1-BKS

Prep Method: SW5030B

Date Prep: 02.24.20

LCSD Sample Id: 7697295-1-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	0.105	105	70-130	3	35	mg/kg	02.24.20 11:03	
Toluene	<0.00200	0.100	0.103	103	0.101	101	70-130	2	35	mg/kg	02.24.20 11:03	
Ethylbenzene	<0.00200	0.100	0.0985	99	0.0975	98	71-129	1	35	mg/kg	02.24.20 11:03	
m,p-Xylenes	<0.00400	0.200	0.203	102	0.202	101	70-135	0	35	mg/kg	02.24.20 11:03	
o-Xylene	<0.00200	0.100	0.101	101	0.100	100	71-133	1	35	mg/kg	02.24.20 11:03	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		105		104		70-130	%	02.24.20 11:03
4-Bromofluorobenzene	96		92		93		70-130	%	02.24.20 11:03

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

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

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

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



LT Environmental, Inc.
North Seven Rivers

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117500

MB Sample Id: 7697327-1-BLK

Matrix: Solid

LCS Sample Id: 7697327-1-BKS

Prep Method: SW5030B

Date Prep: 02.24.20

LCSD Sample Id: 7697327-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.121	121	0.123	123	70-130	2	35	mg/kg	02.24.20 14:43	
Toluene	<0.00200	0.100	0.111	111	0.113	113	70-130	2	35	mg/kg	02.24.20 14:43	
Ethylbenzene	<0.00200	0.100	0.106	106	0.108	108	71-129	2	35	mg/kg	02.24.20 14:43	
m,p-Xylenes	<0.00400	0.200	0.208	104	0.211	106	70-135	1	35	mg/kg	02.24.20 14:43	
o-Xylene	<0.00200	0.100	0.105	105	0.106	106	71-133	1	35	mg/kg	02.24.20 14:43	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		112		111		70-130	%	02.24.20 14:43
4-Bromofluorobenzene	90		91		91		70-130	%	02.24.20 14:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117499

Parent Sample Id: 653379-001

Matrix: Soil

MS Sample Id: 653379-001 S

Prep Method: SW5030B

Date Prep: 02.24.20

MSD Sample Id: 653379-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0987	99	0.106	106	70-130	7	35	mg/kg	02.24.20 11:43	
Toluene	<0.00199	0.0996	0.0838	84	0.0933	94	70-130	11	35	mg/kg	02.24.20 11:43	
Ethylbenzene	<0.00199	0.0996	0.0704	71	0.0807	81	71-129	14	35	mg/kg	02.24.20 11:43	
m,p-Xylenes	<0.00398	0.199	0.141	71	0.163	82	70-135	14	35	mg/kg	02.24.20 11:43	
o-Xylene	<0.00199	0.0996	0.0730	73	0.0842	85	71-133	14	35	mg/kg	02.24.20 11:43	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		70-130	%	02.24.20 11:43
4-Bromofluorobenzene	96		94		70-130	%	02.24.20 11:43

Analytical Method: BTEX by EPA 8021B

Seq Number: 3117500

Parent Sample Id: 653452-008

Matrix: Soil

MS Sample Id: 653452-008 S

Prep Method: SW5030B

Date Prep: 02.24.20

MSD Sample Id: 653452-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.116	116	0.102	103	70-130	13	35	mg/kg	02.24.20 15:24	
Toluene	<0.00201	0.100	0.106	106	0.0935	94	70-130	13	35	mg/kg	02.24.20 15:24	
Ethylbenzene	<0.00201	0.100	0.102	102	0.0897	90	71-129	13	35	mg/kg	02.24.20 15:24	
m,p-Xylenes	<0.00402	0.201	0.198	99	0.174	87	70-135	13	35	mg/kg	02.24.20 15:24	
o-Xylene	<0.00201	0.100	0.100	100	0.0870	88	71-133	14	35	mg/kg	02.24.20 15:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		110		70-130	%	02.24.20 15:24
4-Bromofluorobenzene	89		90		70-130	%	02.24.20 15:24

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

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

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

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



Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575) 382-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

Work Order No: 1631 / 245.1 / 7470 / 7471

CU 2124
 1631 / 245.1 / 7470 / 7471

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slm@ltenv.com, dmoir@ltenv.com, acode@ltenv.com

Project Name:	North Seven Rivers	Turn Around	
Project Number:	012919196	Routine	☐
P.O. Number:		Rush:	24H
Sampler's Name:	Spencer Lo	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒
	Temperature (°C):	3.2	Thermometer ID	TNM007
	Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2
	Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	14
	Sample Custody Seals:	Yes ☒ No ☐ N/A		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers			ANALYSIS REQUEST										Work Order Notes	
PH08	S	2-21-20	1215	1'	✓	TPH (EPA 8015)	✓	BTEX (EPA 0-8021)	✓	Chloride (EPA 300.0)	✓								
PH08A				2'															
PH09				1'															
PH09A				2'															
PH10				1'															
PH10A				2'															
PH11				1'															
PH11A				2'															
PH12				1'															
PH12A				2'															

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		2/24/20 10:55			



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)

Chain of Custody

Work Order No: 453452

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Little
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	slc@ltenv.com, dmoir@ltenv.com, acode@ltenv.com

Project Name:	North Seven Rivers	Turn Around	
Project Number:	012919196	Route	
P.O. Number:		Rush:	24H
Sampler's Name:	Spencer Lo	Due Date:	

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

Sample Identification					Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA 8015)	BTEX (EPA 8015)	Chloride (EPA 8015)	Sample Comments									
PH13					S	2-24-20	1425	1'	1	X	X	X										
PH13A					S		1435	2'														
PH14					S		1450	1'														
PH14A					S		1500	2'														
										</												

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		2/24/20 10:55			

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: LT Environmental, Inc.

Date/ Time Received: 02.24.2020 10.55.00 AM

Work Order #: 653452

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Elizabeth McClellan

Date: 02.24.2020

Checklist reviewed by:



Jessica Kramer

Date: 02.25.2020