



*LT Environmental, Inc.*

*4600 West 60th Avenue  
Arvada, Colorado 80003  
303.433.9788*

March 2, 2020

Mr. Michael Dinkel  
Manager, Environmental and Regulatory  
NGL Energy Partners, LP  
3773 Cherry Creek North Drive, Suite 1000  
Denver, Colorado 80209

**RE: Soil Confirmation Sampling Activities Report  
C2B Salt Water Disposal Facility  
Kersey, Weld County, Colorado**

**Dear Mr. Dinkel:**

LT Environmental, Inc. (LTE) is pleased to present this report summarizing the results of soil sampling activities conducted at the NGL Energy Partners, LP (NGL) C2B salt water disposal (SWD) facility (Site) located near Kersey, Weld County, Colorado (Figure 1) following a release of produced water on December 28, 2019. Soil sampling was conducted to confirm the presence or absence of residual soil impacts following cleanup of the release.

## **BACKGROUND**

The Site houses a SWD well used for offloading produced water. On December 28, 2019, NGL personnel identified a release of produced water due to a gasket failure on one of the initial C2B flowline risers at the wellhead that is tied into the C2 facility (ID# 150361), resulting in approximately 13 barrels of produced water.

Upon noticing the leak, operations were ceased until it was deemed safe to work. NGL personnel immediately removed the ponded water. LTE was then contracted by NGL to conduct soil confirmation sampling.

## **FIELD ACTIVITIES**

LTE personnel arrived on the Site on February 12, 2020. LTE visually assessed the affected area to delineate the outer extent of impacted soil based on visual observations. The estimated extent of the affected area is depicted on the Site Map provided as Figure 2.

## **SOIL SAMPLING**

On February 12, 2020, LTE collected one discrete soil samples (SS02) in the affected area at depths between 0 and 4 inches below ground surface and one background sample (SS01). The presence or absence of petroleum hydrocarbon staining and odors were noted at each sample

location. The soil samples were field-screened for total volatile organic compounds (VOCs) using a photo-ionization detector (PID). The extent of the affected area and the soil confirmation sample locations for the two samples submitted for laboratory analysis are depicted on Figure 2. The depth of each soil sample and the PID readings are summarized in Table 1.

Sampling and analysis for confirmation of successful remediation were conducted to determine the nature and extent of the residual impacts and to confirm compliance with appropriate concentration levels listed in the Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1. No elevated PID readings were observed. Two soil samples were submitted for laboratory analysis based on initial visual observations. The soil samples were stored on ice and transported to Summit Scientific Laboratory (Summit) in Golden Colorado, following strict chain-of-custody (COC) procedures. The date and time sampled, sample identifier, sampler's name, required analyses, and sampler's signature were included on the COC form. Summit analyzed the two samples for:

- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) by United States Environmental Protection Agency (EPA) Method SW8260B;
- TPH-diesel range organics (DRO) by EPA Method SW8015M;
- TPH-oil range organics (ORO) by EPA Method SW8015M;
- VOCs by EPA Method SW8260B for benzene, ethylbenzene, toluene, and total xylenes (BTEX);
- Soluble nutrients (calcium, magnesium, and sodium) by EPA 6020/USDA60 6(2,3A) - Dry Weight Basis;
- Electrical conductivity (EC) by United States Department of Agriculture (USDA) H60 MET Prep: USDA Method 20B 6/20/17;
- Sodium absorption ratio (SAR); and
- pH.

## RESULTS

Sample results were compared to the allowable levels for chemicals of concern listed in the COGCC Table 910-1. The laboratory analytical results indicated no concentrations of chemicals of concern exceeded the allowable levels in the COGCC Table 910-1 in the affected area. The results are summarized in the attached Table 2, and the laboratory analytical report is presented in Attachment 1.

## CONCLUSION

The laboratory analytical results for the soil samples collected from the release footprint indicated no impacts exceeding the COGCC Table 910-1 allowable levels for samples collected at the Site. In the absence of any detectable petroleum hydrocarbons and low SAR, no further actions are recommended.

LTE appreciates the opportunity to provide environmental services to NGL. If you have any questions regarding this report, please contact Mr. Chris Purcell at 303-962-5511.

Sincerely,

LT ENVIRONMENTAL, INC.



Chris Purcell C.P.G.  
Senior Geologist

### Attachments:

- Figure 1 Site Location Map
- Figure 2 Site Map
- Table 1 Soil Sample Locations Summary
- Table 2 Soil Analytical Results
- Attachment 1 Laboratory Analytical Reports



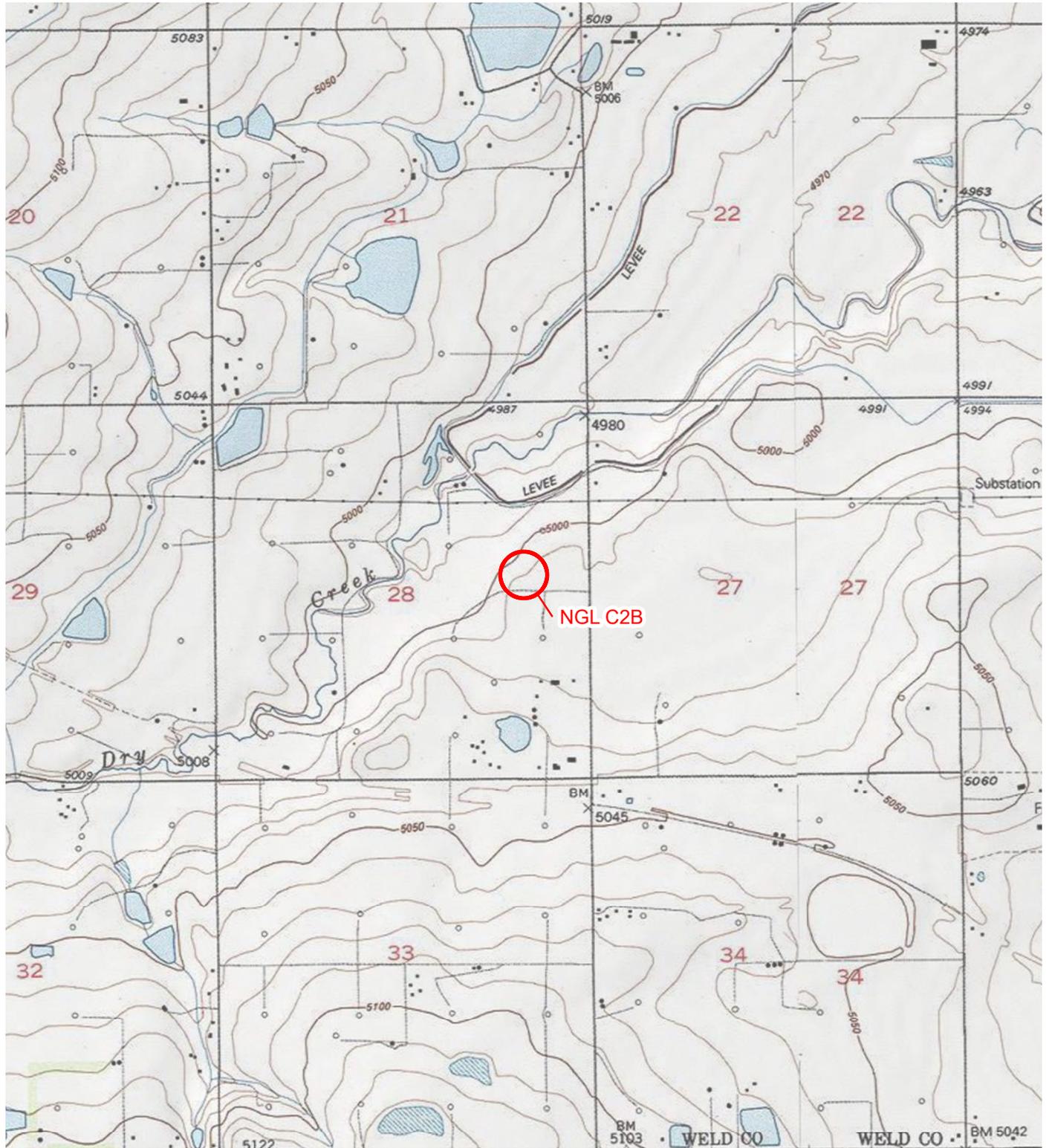
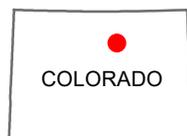
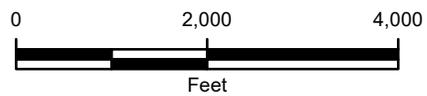


IMAGE COURTESY OF ESRI/USGS

**LEGEND**

 SITE LOCATION



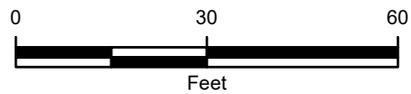
**FIGURE 1**  
**SITE LOCATION MAP**  
**NGL C2B**  
**SENE SEC 28-T1N-R67W**  
**WELD COUNTY, COLORADO**  
**NGL ENERGY PARTNERS, LP**





**LEGEND**

- SOIL SAMPLE
- WELLHEAD
- APPROXIMATE RELEASE EXTENT



**FIGURE 1**  
**SOIL SAMPLE LOCATION MAP**  
**NGL C2B**  
**SENE SEC 28-T1N-R67W**  
**WELD COUNTY, COLORADO**  
**NGL ENERGY PARTNERS, LLC**





**TABLES**

**TABLE 1**  
**SOIL SAMPLE LOCATIONS SUMMARY**

**C2B SPILL**  
**WELD COUNTY, COLORADO**  
**NGL ENERGY PARTNERS, LP**

Sample ID	Sample Depth (inches bgs)	Sample Date	Time	PID (ppm)
SS01	0-4"	2/12/2020	10:15	0
SS02	0-4"	2/12/2020	10:20	0

**Notes:**

inches bgs - Inches below ground surface

PID - photoionization detector

ppm - parts per million



TABLE 2  
SOIL ANALYTICAL RESULTS

C2B SPILL  
WELD COUNTY, COLORADO  
NGL ENERGY PARTNERS, LP

Sample ID	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Calcium (mg/kg)	Magnesium (mg/kg)	Sodium (mg/kg)	Sodium Adsorption Ratio (SAR)	Specific Conductance (EC) (mmhos/cm)	pH
SS01	2/12/2020	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	1,960	399	193	1.04	1.00	8.39
SS02	2/12/2020	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	2,550	625	867	3.99	2.63	8.45
<b>COGCC TABLE 910-1 CONCENTRATION LEVELS</b>		<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>500</b>	<b>500</b>	<b>500</b>				<b>&lt;12<sup>5</sup></b>	<b>&lt; 4 or 2 x Background</b>	<b>6-9</b>

**Notes:**

< - less than the laboratory detection limit

**bold** - exceeds COGCC Table 910-1 limits

COGCC - Colorado Oil and Gas Conservation Commission

mg/kg - milligram per kilogram

mmhos/cm- millimhos per centimeter





# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 20, 2020

Chris Purcell  
LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada, CO 80003

RE: C2B Spill

Work Order #2002096

Enclosed are the results of analyses for samples received by Summit Scientific on 02/12/20 11:21. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer For Paul Shrewsbury  
President



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

Project: C2B Spill  
Project Number: 068720002  
Project Manager: Chris Purcell

**Reported:**  
02/20/20 09:21

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	2002096-01	Soil	02/12/20 10:16	02/12/20 11:21
SS02	2002096-02	Soil	02/12/20 10:20	02/12/20 11:21

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

2002096

# Summit Scientific

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: LT Environmental  
Address: 4600 W 60th Ave  
City/State/Zip: Arvada, CO 80003  
Phone: 303-433-9788  
Sampler Name: Prew Dullinger

Project Manager: Chris Purcell  
E-Mail: C.Purcell@Ltehw.com  
Project Name: CRB Spill  
Project Number: 068720002

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBTEX	TPH-DRO	TPH-ORO	PH	EC	SAR		
1	SS01	2/12/	10:16	2			X			X				X	X	X	X	X	X	
2	SS02	2/12/	10:20	2			X			X				X	X	X	X	X	X	
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: <u>Drew Dullinger</u> Date/Time: <u>2/12/20 11:21</u>	Received by: <u>[Signature]</u> Date/Time: <u>2-12-2020 11:21</u>	<b>Turn Around Time</b> (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> <b>Sample Integrity:</b> Temperature Upon Receipt: <u>3.0°</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	<b>Notes:</b>
Relinquished by:	Received by:		
Relinquished by:	Received by:		

**Sample Receipt Checklist**

S2 Work Order 2002096

Client: LTE Client Project ID: C2B Spill

Shipped Via (H.D.) P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_

Matrix (check all that apply): \_\_\_\_\_ Air  Soil/Solid \_\_\_\_\_ Water \_\_\_\_\_ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	3.0
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			on ice
Were all samples received intact <sup>(1)</sup> ?	✓			
Was adequate sample volume provided <sup>(1)</sup> ?	✓			
If custody seals are present, are they intact <sup>(1)</sup> ?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	✓			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	✓			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	✓			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>			✓	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	

Additional Comments (if any):

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

HT  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

2-12-2020  
Date/Time



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

Project: C2B Spill  
Project Number: 068720002  
Project Manager: Chris Purcell

**Reported:**  
02/20/20 09:21

**SS01**  
**2002096-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/12/20 10:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	2002135	02/13/20	02/13/20	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/12/20 10:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		109 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/12/20 10:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	2002136	02/13/20	02/14/20	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/12/20 10:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		92.7 %		30-150		"	"	"	"	

**Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: **02/12/20 10:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	<b>1960</b>	10.9		mg/kg dry	1	2002175	02/18/20	02/18/20	EPA 6020B	

Summit Scientific

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

Project: C2B Spill  
Project Number: 068720002  
Project Manager: Chris Purcell

**Reported:**  
02/20/20 09:21

**SS01**  
**2002096-01 (Soil)**

**Summit Scientific**

**Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Magnesium	399	5.45	mg/kg dry	1	2002175	02/18/20	02/18/20	EPA 6020B	
Sodium	193	5.45	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/12/20 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.04	0.100	units	1	2002194	02/19/20	02/19/20	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/12/20 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	2002130	02/13/20	02/13/20	Calculation	
pH	8.39		pH Units	"	2002131	02/13/20	02/13/20	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **02/12/20 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.00	0.0100	mmhos/cm	1	2002132	02/13/20	02/13/20	EPA 120.1	

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

Project: C2B Spill  
Project Number: 068720002  
Project Manager: Chris Purcell

**Reported:**  
02/20/20 09:21

**SS02**  
**2002096-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **02/12/20 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2002135	02/13/20	02/13/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/12/20 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/12/20 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2002136	02/13/20	02/14/20	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/12/20 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.2 %	30-150		"	"	"	"	

**Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: **02/12/20 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>2550</b>	10.8	mg/kg dry	1	2002175	02/18/20	02/18/20	EPA 6020B	
<b>Magnesium</b>	<b>625</b>	5.40	"	"	"	"	"	"	

Summit Scientific

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

Project: C2B Spill  
 Project Number: 068720002  
 Project Manager: Chris Purcell

**Reported:**  
 02/20/20 09:21

**SS02**  
**2002096-02 (Soil)**

**Summit Scientific**

**Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis**

<b>Sodium</b>	<b>867</b>	5.40	mg/kg dry	1	2002175	02/18/20	02/18/20	EPA 6020B
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**Calculated Analysis**

Date Sampled: **02/12/20 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>3.99</b>	0.100	units	1	2002194	02/19/20	02/19/20	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/12/20 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>92.5</b>		%	1	2002130	02/13/20	02/13/20	Calculation	
<b>pH</b>	<b>8.45</b>		pH Units	"	2002131	02/13/20	02/13/20	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **02/12/20 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>2.63</b>	0.0100	mmhos/cm	1	2002132	02/13/20	02/13/20	EPA 120.1	

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

Project: C2B Spill  
Project Number: 068720002  
Project Manager: Chris Purcell

**Reported:**  
02/20/20 09:21

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

#### Batch 2002135 - EPA 5030 Soil MS

##### Blank (2002135-BLK1)

Prepared & Analyzed: 02/13/20

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105		23-173			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.5		20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100		21-167			

##### LCS (2002135-BS1)

Prepared & Analyzed: 02/13/20

Benzene	0.0776	0.0020	mg/kg	0.100		77.6		70-130			
Toluene	0.0877	0.0050	"	0.100		87.7		70-130			
Ethylbenzene	0.0922	0.0050	"	0.100		92.2		70-130			
m,p-Xylene	0.213	0.010	"	0.200		106		70-130			
o-Xylene	0.0986	0.0050	"	0.100		98.6		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107		23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6		20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100		21-167			

##### Matrix Spike (2002135-MS1)

Source: 2002084-01

Prepared & Analyzed: 02/13/20

Benzene	0.0928	0.0020	mg/kg	0.100	0.0117	81.1		70-130			
Toluene	0.0936	0.0050	"	0.100	ND	93.6		70-130			
Ethylbenzene	0.193	0.0050	"	0.100	0.0690	124		70-130			
m,p-Xylene	0.799	0.010	"	0.200	0.625	86.5		70-130			
o-Xylene	0.0968	0.0050	"	0.100	0.0194	77.5		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0438		"	0.0400		110		23-173			
Surrogate: Toluene-d8	0.0360		"	0.0400		90.0		20-170			
Surrogate: 4-Bromofluorobenzene	0.0480		"	0.0400		120		21-167			

Summit Scientific

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

Project: C2B Spill  
Project Number: 068720002  
Project Manager: Chris Purcell

**Reported:**  
02/20/20 09:21

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

**Batch 2002135 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (2002135-MSD1)</b>	<b>Source: 2002084-01</b>			<b>Prepared &amp; Analyzed: 02/13/20</b>							
Benzene	0.0934	0.0020	mg/kg	0.100	0.0117	81.7	70-130	0.612	30		
Toluene	0.0986	0.0050	"	0.100	ND	98.6	70-130	5.12	30		
Ethylbenzene	0.171	0.0050	"	0.100	0.0690	102	70-130	12.0	30		
m,p-Xylene	0.827	0.010	"	0.200	0.625	101	70-130	3.54	30		
o-Xylene	0.0956	0.0050	"	0.100	0.0194	76.3	70-130	1.22	30		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0432</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0372</i>		<i>"</i>	<i>0.0400</i>		<i>92.9</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>				

Summit Scientific

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

Project: C2B Spill  
Project Number: 068720002  
Project Manager: Chris Purcell

**Reported:**  
02/20/20 09:21

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting		Spike	Source		%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

**Batch 2002136 - EPA 3550A**

**Blank (2002136-BLK1)**

Prepared & Analyzed: 02/13/20

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								

**LCS (2002136-BS1)**

Prepared & Analyzed: 02/13/20

C10-C28 (DRO)	570	50	mg/kg	500	114	81.4-129					
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**Matrix Spike (2002136-MS1)**

Source: 2002084-01

Prepared & Analyzed: 02/13/20

C10-C28 (DRO)	937	50	mg/kg	500	112	165	77.8-133				QM-07
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**Matrix Spike Dup (2002136-MSD1)**

Source: 2002084-01

Prepared & Analyzed: 02/13/20

C10-C28 (DRO)	500	50	mg/kg	500	112	77.6	77.8-133	60.7	8.48		QM-07
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Summit Scientific

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

Project: C2B Spill  
Project Number: 068720002  
Project Manager: Chris Purcell

**Reported:**  
02/20/20 09:21

**Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

**Batch 2002175 - General Preparation**

**Blank (2002175-BLK1)**

Prepared & Analyzed: 02/18/20

Calcium	ND	10.0	mg/kg wet						
Magnesium	ND	5.00	"						
Sodium	ND	5.00	"						

**LCS (2002175-BS1)**

Prepared & Analyzed: 02/18/20

Calcium	565	10.0	mg/kg wet	500	113	70-130			
Magnesium	649	5.00	"	500	130	70-130			
Sodium	615	5.00	"	500	123	70-130			

**Duplicate (2002175-DUP1)**

Source: 2002096-01

Prepared & Analyzed: 02/18/20

Calcium	1900	10.9	mg/kg dry	1960			3.11	20	
Magnesium	367	5.45	"	399			8.24	20	
Sodium	158	5.45	"	193			19.7	20	

**Matrix Spike (2002175-MS1)**

Source: 2002096-01

Prepared & Analyzed: 02/18/20

Calcium	2430	10.9	mg/kg dry	545	1960	85.7	70-130		
Magnesium	971	5.45	"	545	399	105	70-130		
Sodium	735	5.45	"	545	193	99.5	70-130		

**Matrix Spike Dup (2002175-MSD1)**

Source: 2002096-01

Prepared & Analyzed: 02/18/20

Calcium	2370	10.9	mg/kg dry	545	1960	74.8	70-130	2.47	25
Magnesium	960	5.45	"	545	399	103	70-130	1.07	25
Sodium	733	5.45	"	545	193	99.1	70-130	0.277	25

Summit Scientific

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

Project: C2B Spill  
 Project Number: 068720002  
 Project Manager: Chris Purcell

**Reported:**  
 02/20/20 09:21

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting		Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

**Batch 2002130 - General Preparation**

<b>Duplicate (2002130-DUP1)</b>		<b>Source: 2002096-01</b>			<b>Prepared &amp; Analyzed: 02/13/20</b>					
% Solids	91.9		%		91.7			0.207	20	

**Batch 2002131 - General Preparation**

<b>LCS (2002131-BS1)</b>		<b>Prepared &amp; Analyzed: 02/13/20</b>								
pH	9.21		pH Units	9.18	100	95-105				
<b>Duplicate (2002131-DUP1)</b>		<b>Source: 2002094-01</b>			<b>Prepared &amp; Analyzed: 02/13/20</b>					
pH	7.69		pH Units	7.65			0.522	20		

Summit Scientific

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

Project: C2B Spill  
 Project Number: 068720002  
 Project Manager: Chris Purcell

**Reported:**  
 02/20/20 09:21

**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

**Batch 2002132 - General Preparation**

**Blank (2002132-BLK1)**

Prepared & Analyzed: 02/13/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (2002132-BS1)**

Prepared & Analyzed: 02/13/20

Specific Conductance (EC) 0.771 0.0100 mmhos/cm 0.750 103 90-110

**Duplicate (2002132-DUP1)**

**Source: 2002094-01**

Prepared & Analyzed: 02/13/20

Specific Conductance (EC) 0.430 0.0100 mmhos/cm 0.427 0.595 20

Summit Scientific

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

Project: C2B Spill  
Project Number: 068720002  
Project Manager: Chris Purcell

**Reported:**  
02/20/20 09:21

### Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference