



Farr 18-14 Location

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Imagery Date: Jun 20, 2014

lat 40.310585° lon -104.598172° elev 4817 ft

Eye alt 6589 ft



# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 12, 2016

Chris Roy  
LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada, CO 80003  
RE: Farr 18-14

Enclosed are the results of analyses for samples received by Summit Scientific on 01/11/16 16:22. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury  
President



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

Project: Farr 18-14  
Project Number: 008316003.0001  
Project Manager: Chris Roy

**Reported:**  
01/12/16 06:51

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01 Floor @7.5'	1601077-01	Soil	01/11/16 00:00	01/11/16 16:22
SS02 E. Wall@2'	1601077-02	Soil	01/11/16 00:00	01/11/16 16:22

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

Project: Farr 18-14

Project Number: 008316003.0001

Project Manager: Chris Roy

**Reported:**

01/12/16 06:51

## Summit Scientific

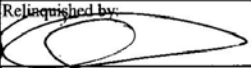
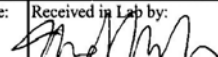
1601077

741 Corporate Circle Suite I ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client:	LTE
Address:	4600 West 60th Avenue
City/State/Zip:	Arvada, CO 80003
Phone:	Fax:
Sampler Name:	Glenn Thompson

Project Manager:	Chris Roy
E-Mail:	Noble Remediation Team
Project Name:	Farr 18-14
Project Number:	008316003.0001

				Preservative		Matrix		Analyze For:															
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX, DRO, GLO	naphthalene	pH, EC, SAR									Special Instructions
SS01 Floor @ 1.5'	11-Jan		1			X			X			X	X	X									invoice Raul Sanchez @ Noble
SS02 E Wall @ 2'	Jan 11, 2016		1			X			X			X	X	X									
Relinquished by: 	Date/Time: 1/11/16 1622	Received by:		Date/Time:		Turn Around Time (Check)		Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>		24 Hours <input type="checkbox"/> Standard <input type="checkbox"/>		48 Hours <input type="checkbox"/>		Notes:									
Relinquished by:	Date/Time:	Received by:		Date/Time:		Sample Integrity:		Temperature Upon Receipt: 7.2°C		Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>													
Relinquished by:	Date/Time:	Received in Lab by: 		Date/Time: 1/11/16 1622																			

[www.s2scientific.com](http://www.s2scientific.com)

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Project: Farr 18-14  
Project Number: 008316003.0001  
Project Manager: Chris Roy

**Reported:**  
01/12/16 06:51

**SS01 Floor @7.5'**  
**1601077-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1601090	01/11/16	01/11/16	8015M	

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.4 %	30-150		"	"	"	"	

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

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1601089	01/11/16	01/11/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	21-167		"	"	"	"	

Summit Scientific

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Arvada CO, 80003

Project: Farr 18-14  
Project Number: 008316003.0001  
Project Manager: Chris Roy

Reported:  
01/12/16 06:51

**SS02 E.Wall@2'**  
**1601077-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1601090	01/11/16	01/11/16	8015M	

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.9 %	30-150		"	"	"	"	

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

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1601089	01/11/16	01/11/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.0 %	21-167		"	"	"	"	

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

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Farr 18-14  
Project Number: 008316003.0001  
Project Manager: Chris Roy

Reported:  
01/12/16 06:51

**SS02 E.Wall@2'**  
**1601077-02 (Soil)**

**Summit Scientific**

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

Analyte	Result	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	308	10.7 mg/kg dry	1	1601091	01/11/16	01/11/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	545	5.36	"	"	"	"	"	
Sodium	116	5.36	"	"	"	"	"	

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.920		units	"	1601096	01/12/16	01/12/16	"	

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

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.367	0.0100	mmhos/cm	1	1601078	01/11/16	01/11/16	SM 2510B	

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.77	0.100	pH Units	"	1601077	01/11/16	"	EPA 9045	

Date Sampled: 01/11/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.3		%	"	1601086	01/11/16	01/12/16	% calculation	

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Project: Farr 18-14  
Project Number: 008316003.0001  
Project Manager: Chris Roy

**Reported:**  
01/12/16 06:51

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

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

**Batch 1601090 - EPA 3550A**

**Blank (1601090-BLK1)**

Prepared & Analyzed: 01/11/16

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	11.3		"	12.5		90.6	30-150			

**LCS (1601090-BS1)**

Prepared & Analyzed: 01/11/16

C10-C28 (DRO)	514	50	mg/kg	499		103	73-134			
Surrogate: o-Terphenyl	11.7		"	12.5		93.7	30-150			

**Matrix Spike (1601090-MS1)**

Source: 1601077-01

Prepared & Analyzed: 01/11/16

C10-C28 (DRO)	529	50	mg/kg	487	21.1	104	50-148			
Surrogate: o-Terphenyl	11.5		"	12.2		94.2	30-150			

**Matrix Spike Dup (1601090-MSD1)**

Source: 1601077-01

Prepared & Analyzed: 01/11/16

C10-C28 (DRO)	535	50	mg/kg	487	21.1	105	50-148	1.09	13	
Surrogate: o-Terphenyl	11.6		"	12.2		95.0	30-150			

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Project: Farr 18-14  
Project Number: 008316003.0001  
Project Manager: Chris Roy

Reported:  
01/12/16 06:51

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

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

**Batch 1601089 - EPA 5030 Soil MS**

**Blank (1601089-BLK1)**

Prepared & Analyzed: 01/11/16

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0401</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0375</i>		<i>"</i>	<i>0.0400</i>		<i>93.7</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.2</i>	<i>21-167</i>			

**LCS (1601089-BS1)**

Prepared & Analyzed: 01/11/16

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.109	0.0020	"	0.100		109	58-130			
Toluene	0.110	0.0050	"	0.100		110	61-134			
Ethylbenzene	0.132	0.0050	"	0.0992		133	74-139			
m,p-Xylene	0.246	0.010	"	0.200		123	73-137			
o-Xylene	0.114	0.0050	"	0.0984		116	73-141			
Xylenes (total)	0.360	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.55	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0384</i>		<i>"</i>	<i>0.0400</i>		<i>95.9</i>	<i>21-167</i>			

**Matrix Spike (1601089-MS1)**

Source: 1601077-01

Prepared & Analyzed: 01/11/16

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.100	0.0020	"	0.0916	ND	110	30-131			
Toluene	0.101	0.0050	"	0.0916	ND	110	30-134			
Ethylbenzene	0.123	0.0050	"	0.0908	ND	135	22-153			
m,p-Xylene	0.227	0.010	"	0.183	ND	124	10-159			
o-Xylene	0.108	0.0050	"	0.0901	ND	120	31-151			
Xylenes (total)	0.336	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	2.34	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0386</i>		<i>"</i>	<i>0.0366</i>		<i>105</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0357</i>		<i>"</i>	<i>0.0366</i>		<i>97.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0347</i>		<i>"</i>	<i>0.0366</i>		<i>94.6</i>	<i>21-167</i>			

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Arvada CO, 80003

Project: Farr 18-14  
Project Number: 008316003.0001  
Project Manager: Chris Roy

Reported:  
01/12/16 06:51

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

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

**Batch 1601089 - EPA 5030 Soil MS**

Matrix Spike Dup (1601089-MSD1)		Source: 1601077-01			Prepared & Analyzed: 01/11/16					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.105	0.0020	"	0.0943	ND	111	30-131	4.36	34	
Toluene	0.105	0.0050	"	0.0943	ND	111	30-134	3.95	30	
Ethylbenzene	0.128	0.0050	"	0.0936	ND	137	22-153	4.24	24	
m,p-Xylene	0.238	0.010	"	0.188	ND	127	10-159	4.64	68	
o-Xylene	0.111	0.0050	"	0.0928	ND	120	31-151	2.39	38	
Xylenes (total)	0.349	0.010	"		0.00		30-160	3.92	30	
Gasoline Range Hydrocarbons	2.44	0.50	"		ND		30-160	4.22	30	
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0377		106	23-173			
Surrogate: Toluene-d8	0.0365		"	0.0377		96.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0358		"	0.0377		94.9	21-167			

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Reported:  
01/12/16 06:51

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

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

**Batch 1601091 - General Preparation**

**Blank (1601091-BLK1)**

Prepared & Analyzed: 01/11/16

Calcium	24.3	10.0	mg/kg wet
Magnesium	5.44	5.00	"
Sodium	ND	5.00	"

**LCS (1601091-BS1)**

Prepared & Analyzed: 01/11/16

Calcium	464	10.0	mg/kg wet	500	92.7	82.9-118
Magnesium	557	5.00	"	500	111	77.1-123
Sodium	448	5.00	"	500	89.7	71-129

**Duplicate (1601091-DUP1)**

Source: 1601077-02

Prepared & Analyzed: 01/11/16

Calcium	320	10.7	mg/kg dry	308	3.67	200
Magnesium	535	5.36	"	545	1.75	200
Sodium	108	5.36	"	116	6.63	200

**Matrix Spike (1601091-MS1)**

Source: 1601077-02

Prepared & Analyzed: 01/11/16

Calcium	588	10.7	mg/kg dry	496	308	56.3	75-125	QM-07
Magnesium	996	5.36	"	496	545	90.8	75-125	
Sodium	512	5.36	"	496	116	79.9	75-125	

**Matrix Spike Dup (1601091-MSD1)**

Source: 1601077-02

Prepared & Analyzed: 01/11/16

Calcium	624	10.7	mg/kg dry	496	308	63.6	75-125	5.97	25	QM-07
Magnesium	938	5.36	"	496	545	79.2	75-125	5.96	25	
Sodium	496	5.36	"	496	116	76.7	75-125	3.09	25	

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01/12/16 06:51

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

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

Batch 1601077 - General Preparation

LCS (1601077-BS1)

Prepared & Analyzed: 01/11/16

pH	7.99	0.100	pH Units	8.00	99.9	95-105
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Duplicate (1601077-DUP1)

Source: 1601047-01

Prepared & Analyzed: 01/11/16

pH	8.74	0.100	pH Units	8.72	0.229	20
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Batch 1601078 - General Preparation

Blank (1601078-BLK1)

Prepared & Analyzed: 01/11/16

Specific Conductance (EC)	ND	0.0100	mmhos/cm
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LCS (1601078-BS1)

Prepared & Analyzed: 01/11/16

Specific Conductance (EC)	0.508	0.0100	mmhos/cm	0.500	102	90-110
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Duplicate (1601078-DUP1)

Source: 1601047-01

Prepared & Analyzed: 01/11/16

Specific Conductance (EC)	1.40	0.0100	mmhos/cm	1.49	6.04	20
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Batch 1601086 - General Preparation

Duplicate (1601086-DUP1)

Source: 1601065-01

Prepared: 01/11/16 Analyzed: 01/12/16

% Solids	0.00	%	ND	20
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Arvada CO, 80003

Project: Farr 18-14  
Project Number: 008316003.0001  
Project Manager: Chris Roy

**Reported:**  
01/12/16 06:51

### 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

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A handwritten signature in black ink, appearing to be 'MSM'.