

November 29, 2017

## HRL Compliance Solutions- CO

Sample Delivery Group: L953005  
Samples Received: 11/22/2017  
Project Number:  
Description: R.L. Bayless-Alta Martin 1-33  
Site: ALTA MARTIN 1-33 LTU  
Report To: Kris Rowe  
2385 F ½ Road  
Grand Junction, CO 81650

Entire Report Reviewed By:



Shane Gambill

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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## LTU-NORTH L953005-01 Solid

Collected by  
Casey Richardson

Collected date/time  
11/21/17 12:20

Received date/time  
11/22/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1046188	1	11/24/17 08:55	11/25/17 13:32	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1046473	1	11/28/17 10:52	11/28/17 19:20	MTJ

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss

## LTU-SOUTH L953005-02 Solid

Collected by  
Casey Richardson

Collected date/time  
11/21/17 12:28

Received date/time  
11/22/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1046188	1	11/24/17 08:55	11/25/17 13:54	ACG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1046473	1	11/28/17 10:52	11/28/17 19:31	MTJ

<sup>4</sup> Cn<sup>5</sup> Sr<sup>6</sup> Qc<sup>7</sup> Gl<sup>8</sup> Al<sup>9</sup> Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Shane Gambill  
Technical Service Representative

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	11/25/2017 13:32	<a href="#">WG1046188</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	92.1		77.0-120		11/25/2017 13:32	<a href="#">WG1046188</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	4.09		4.00	1	11/28/2017 19:20	<a href="#">WG1046473</a>
(S) <i>o</i> -Terphenyl	58.2		18.0-148		11/28/2017 19:20	<a href="#">WG1046473</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	5.17		0.100	1	11/25/2017 13:54	<a href="#">WG1046188</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	89.0		77.0-120		11/25/2017 13:54	<a href="#">WG1046188</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	9.60		4.00	1	11/28/2017 19:31	<a href="#">WG1046473</a>
(S) <i>o</i> -Terphenyl	50.3		18.0-148		11/28/2017 19:31	<a href="#">WG1046473</a>

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>4</sup> Cn<sup>5</sup> Sr<sup>6</sup> Qc<sup>7</sup> Gl<sup>8</sup> Al<sup>9</sup> Sc



Method Blank (MB)

(MB) R3268685-3 11/25/17 06:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	93.8			77.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3268685-1 11/25/17 05:15 • (LCSD) R3268685-2 11/25/17 05:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.02	5.41	91.3	98.3	70.0-136			7.41	20
(S) a,a,a-Trifluorotoluene(FID)				105	108	77.0-120				

L952974-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L952974-06 11/25/17 10:09 • (MS) R3268685-4 11/25/17 14:39 • (MSD) R3268685-5 11/25/17 15:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	12.1	139	130	92.3	85.4	25	10.0-147			7.07	30
(S) a,a,a-Trifluorotoluene(FID)					105	103		77.0-120				

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Method Blank (MB)

(MB) R3268852-1 11/28/17 15:20				
Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	61.6			18.0-148

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3268852-2 11/28/17 15:31 • (LCSD) R3268852-3 11/28/17 15:42										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
TPH (GC/FID) High Fraction	60.0	49.6	49.2	82.7	82.0	50.0-150			0.759	20
(S) o-Terphenyl				73.0	72.0	18.0-148				





## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

### Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

### Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc




Sc

A map of the United States showing the locations of 25 study sites. The sites are marked with pins: 24 are purple and 1 is orange (located in Tennessee). The states are labeled with their abbreviations: WA, OR, ID, MT, ND, MN, WI, MI, NY, ME, VT, NH, CT, RI, MA, PA, WV, VA, NC, SC, GA, FL, AL, MS, AR, LA, TX, NM, AZ, NV, CA, AK, HI, UT, WY, SD, NE, KS, MO, IL, IN, OH, KY, TN, and DE.



## ESC LAB SCIENCES Cooler Receipt Form

Client: <u>HRLCSO</u>	SDG#	953005	
Cooler Received/Opened On: <u>11/24/17</u>	Temperature:	0.3	
Received by : <u>Christian Kacar</u>			
Signature: <u></u>			
<b>Receipt Check List</b>	<b>NP</b>	<b>Yes</b>	<b>No</b>
COC Seal Present / Intact?	/		
COC Signed / Accurate?		/	
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?		/	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			