

## XTO Energy - San Juan Division

Sample Delivery Group: L823465

Samples Received: 03/15/2016

Project Number:

Description: Tiffany C 3

Report To: James McDaniel  
382 County Road 3100  
Aztec, NM 87410

Entire Report Reviewed By:



Daphne Richards  
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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# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



## DURLH-31316-1215 L823465-01 Solid

Collected by  
Logan Hixon

Collected date/time  
03/13/16 12:15

Received date/time  
03/15/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG856643	1	03/15/16 18:14	03/16/16 14:22	LTB
Calculated Results	WG856923	1	03/16/16 14:51	03/17/16 10:56	CCE
Mercury by Method 7471A	WG857353	1	03/21/16 11:15	03/21/16 13:00	BRJ
Metals (ICP) by Method 6010B	WG856643	1	03/15/16 18:14	03/15/16 23:20	LTB
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG858309	1	03/21/16 22:35	03/22/16 11:01	TRF
Total Solids by Method 2540 G-2011	WG856937	1	03/17/16 13:39	03/18/16 08:58	MEL
Volatile Organic Compounds (GC) by Method 8015/8021	WG857428	5	03/18/16 06:00	03/18/16 19:51	BMB
Wet Chemistry by Method 3060A/7196A	WG856513	1	03/16/16 09:24	03/16/16 14:22	AMC
Wet Chemistry by Method 9045D	WG856548	1	03/16/16 10:40	03/16/16 10:40	AMC
Wet Chemistry by Method 9050AMod	WG856620	1	03/16/16 14:00	03/16/16 14:00	JSS
Wet Chemistry by Method 9056A	WG856426	1	03/16/16 11:26	03/17/16 01:03	CM

<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

## DURLH-31316-1215 L823465-02 Waste

Collected by  
Logan Hixon

Collected date/time  
03/13/16 12:15

Received date/time  
03/15/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG857777	1	03/19/16 10:02	03/19/16 21:20	WBD
Preparation by Method 1311	WG857421	1	03/18/16 05:52	03/18/16 05:53	BG

## DURLH-31316-1230 L823465-03 Solid

Collected by  
Logan Hixon

Collected date/time  
03/13/16 12:30

Received date/time  
03/15/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG856643	1	03/15/16 18:14	03/16/16 14:22	LTB
Calculated Results	WG856923	1	03/16/16 14:51	03/17/16 10:59	CCE
Mercury by Method 7471A	WG857353	1	03/21/16 11:15	03/21/16 12:51	BRJ
Metals (ICP) by Method 6010B	WG856643	1	03/15/16 18:14	03/15/16 23:22	LTB
Semi-Volatile Organic Compounds (GC) by Method 3546/DRO	WG857721	1	03/21/16 12:57	03/21/16 19:24	TRF
Total Solids by Method 2540 G-2011	WG856937	1	03/17/16 13:39	03/18/16 08:58	MEL
Volatile Organic Compounds (GC) by Method 8015/8021	WG857428	5	03/18/16 06:00	03/18/16 19:29	BMB
Wet Chemistry by Method 3060A/7196A	WG856513	1	03/16/16 09:24	03/16/16 14:22	AMC
Wet Chemistry by Method 9045D	WG856548	1	03/16/16 10:40	03/16/16 10:40	AMC
Wet Chemistry by Method 9050AMod	WG856620	1	03/16/16 14:00	03/16/16 14:00	JSS
Wet Chemistry by Method 9056A	WG856426	1	03/16/16 11:26	03/17/16 01:27	CM

## DURLH-31316-1230 L823465-04 Waste

Collected by  
Logan Hixon

Collected date/time  
03/13/16 12:30

Received date/time  
03/15/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG857777	1	03/19/16 10:02	03/19/16 21:29	WBD
Preparation by Method 1311	WG857421	1	03/18/16 05:52	03/18/16 05:53	BG

ACCOUNT:

XTO Energy - San Juan Division

PROJECT:

SDG:

L823465

DATE/TIME:

03/22/16 14:05

PAGE:

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All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. 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.

Daphne Richards  
Technical Service Representative

### Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
<a href="#">L823465-01</a>	<a href="#">DURLH-31316-1215</a>	9045D
<a href="#">L823465-03</a>	<a href="#">DURLH-31316-1230</a>	9045D

<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



## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.03		1	03/17/2016 10:56	WG856923

## Calculated Results

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	7.48		2.34	1	03/16/2016 14:22	<a href="#">WG856643</a>

## Total Solids by Method 2540 G-2011

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	85.3		1	03/18/2016 08:58	<a href="#">WG856937</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.34	1	03/16/2016 14:22	<a href="#">WG856513</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.87		1	03/16/2016 10:40	<a href="#">WG856548</a>

## Sample Narrative:

9045D L823465-01 WG856548: 8.87 at 24.7c

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	220		1	03/16/2016 14:00	<a href="#">WG856620</a>

## Wet Chemistry by Method 9056A

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	121		11.7	1	03/17/2016 01:03	<a href="#">WG856426</a>
Sulfate	65.6		58.6	1	03/17/2016 01:03	<a href="#">WG856426</a>

## Mercury by Method 7471A

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0234	1	03/21/2016 13:00	<a href="#">WG857353</a>

## Metals (ICP) by Method 6010B

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.76		2.34	1	03/15/2016 23:20	<a href="#">WG856643</a>
Barium	341		0.586	1	03/15/2016 23:20	<a href="#">WG856643</a>
Cadmium	ND		0.586	1	03/15/2016 23:20	<a href="#">WG856643</a>
Chromium	7.48		1.17	1	03/15/2016 23:20	<a href="#">WG856643</a>
Copper	12.2		2.34	1	03/15/2016 23:20	<a href="#">WG856643</a>
Lead	13.2		0.586	1	03/15/2016 23:20	<a href="#">WG856643</a>
Nickel	9.40		2.34	1	03/15/2016 23:20	<a href="#">WG856643</a>
Selenium	ND		2.34	1	03/15/2016 23:20	<a href="#">WG856643</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Metals (ICP) by Method 6010B

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Silver	ND		1.17	1	03/15/2016 23:20	<a href="#">WG856643</a>
Zinc	34.6		5.86	1	03/15/2016 23:20	<a href="#">WG856643</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

## Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00293	5	03/18/2016 19:51	<a href="#">WG857428</a>
Toluene	ND		0.0293	5	03/18/2016 19:51	<a href="#">WG857428</a>
Ethylbenzene	ND		0.00293	5	03/18/2016 19:51	<a href="#">WG857428</a>
Total Xylene	ND		0.00879	5	03/18/2016 19:51	<a href="#">WG857428</a>
TPH (GC/FID) Low Fraction	ND		0.586	5	03/18/2016 19:51	<a href="#">WG857428</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	100		59.0-128		03/18/2016 19:51	<a href="#">WG857428</a>
(S) <i>a,a,a</i> -Trifluorotoluene(PID)	101		54.0-144		03/18/2016 19:51	<a href="#">WG857428</a>

## Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.69	1	03/22/2016 11:01	<a href="#">WG858309</a>
(S) <i>o</i> -Terphenyl	80.1		50.0-150		03/22/2016 11:01	<a href="#">WG858309</a>



Preparation by Method 1311

	Result	<u>Qualifier</u>	Prep date / time	<u>Batch</u>
Analyte				
TCLP Extraction	-		3/18/2016 5:52:40 AM	WG857421

<sup>1</sup> Cp

<sup>2</sup> Tc

Metals (ICP) by Method 6010B

	Result	<u>Qualifier</u>	RDL	Limit	Dilution	Analysis date / time	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l			
Boron	ND		9.00		1	03/19/2016 21:20	<a href="#">WG857777</a>

<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



## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.247		1	03/17/2016 10:59	WG856923

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Calculated Results

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	8.39		2.29	1	03/16/2016 14:22	<a href="#">WG856643</a>

## Total Solids by Method 2540 G-2011

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	87.4		1	03/18/2016 08:58	<a href="#">WG856937</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.29	1	03/16/2016 14:22	<a href="#">WG856513</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.18		1	03/16/2016 10:40	<a href="#">WG856548</a>

## Sample Narrative:

9045D L823465-03 WG856548: 8.18 at 24.5c

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	Dilution	Analysis date / time	Batch
Specific Conductance	256		1	03/16/2016 14:00	<a href="#">WG856620</a>

## Wet Chemistry by Method 9056A

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	78.5		11.4	1	03/17/2016 01:27	<a href="#">WG856426</a>
Sulfate	ND		57.2	1	03/17/2016 01:27	<a href="#">WG856426</a>

## Mercury by Method 7471A

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0229	1	03/21/2016 12:51	<a href="#">WG857353</a>

## Metals (ICP) by Method 6010B

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.78		2.29	1	03/15/2016 23:22	<a href="#">WG856643</a>
Barium	202		0.572	1	03/15/2016 23:22	<a href="#">WG856643</a>
Cadmium	ND		0.572	1	03/15/2016 23:22	<a href="#">WG856643</a>
Chromium	8.39		1.14	1	03/15/2016 23:22	<a href="#">WG856643</a>
Copper	10.9		2.29	1	03/15/2016 23:22	<a href="#">WG856643</a>
Lead	11.1		0.572	1	03/15/2016 23:22	<a href="#">WG856643</a>
Nickel	9.41		2.29	1	03/15/2016 23:22	<a href="#">WG856643</a>
Selenium	ND		2.29	1	03/15/2016 23:22	<a href="#">WG856643</a>





## Metals (ICP) by Method 6010B

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Silver	ND		1.14	1	03/15/2016 23:22	<a href="#">WG856643</a>
Zinc	33.3		5.72	1	03/15/2016 23:22	<a href="#">WG856643</a>

1  
Cp2  
Tc3  
Ss4  
Cn5  
Sr6  
Qc7  
Gl8  
Al9  
Sc

## Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00286	5	03/18/2016 19:29	<a href="#">WG857428</a>
Toluene	ND		0.0286	5	03/18/2016 19:29	<a href="#">WG857428</a>
Ethylbenzene	ND		0.00286	5	03/18/2016 19:29	<a href="#">WG857428</a>
Total Xylene	ND		0.00858	5	03/18/2016 19:29	<a href="#">WG857428</a>
TPH (GC/FID) Low Fraction	ND		0.572	5	03/18/2016 19:29	<a href="#">WG857428</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	101		59.0-128		03/18/2016 19:29	<a href="#">WG857428</a>
(S) <i>a,a,a</i> -Trifluorotoluene(PID)	102		54.0-144		03/18/2016 19:29	<a href="#">WG857428</a>

## Semi-Volatile Organic Compounds (GC) by Method 3546/DRO

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.58	1	03/21/2016 19:24	<a href="#">WG857721</a>
(S) <i>o</i> -Terphenyl	67.3		50.0-150		03/21/2016 19:24	<a href="#">WG857721</a>



Preparation by Method 1311

	Result	<u>Qualifier</u>	Prep date / time	<u>Batch</u>
Analyte				
TCLP Extraction	-		3/18/2016 5:52:40 AM	WG857421

<sup>1</sup>  
Cp

<sup>2</sup>  
Tc

Metals (ICP) by Method 6010B

	Result	<u>Qualifier</u>	RDL	Limit	Dilution	Analysis date / time	<u>Batch</u>
Analyte	mg/l		mg/l	mg/l			
Boron	ND		9.00		1	03/19/2016 21:29	<a href="#">WG857777</a>

<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) 03/18/16 08:56

Analyte	MB Result %	<u>MB Qualifier</u>	MB RDL %
Total Solids	0.000800		

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

L823463-05 Original Sample (OS) • Duplicate (DUP)

(OS) 03/18/16 08:57 • (DUP) 03/18/16 08:57

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Total Solids	84.2	84.0	1	0.233		5

<sup>4</sup>Cn

<sup>5</sup>Sr

Laboratory Control Sample (LCS)

(LCS) 03/18/16 08:57

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Total Solids	50.0	50.0	100	85.0-115	

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) 03/16/16 14:17

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Chromium,Hexavalent	ND		2.00

L823393-21 Original Sample (OS) • Duplicate (DUP)

(OS) 03/16/16 14:20 • (DUP) 03/16/16 14:20

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	ND	ND	1	0.000		20

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

(LCS) 03/16/16 14:18 • (LCSD) 03/16/16 14:18

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 %
Chromium,Hexavalent	56.9	53.8	53.8	95.0	95.0	80.0-120			0.000	20

L823393-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/16/16 14:20 • (MS) 03/16/16 14:20 • (MSD) 03/16/16 14:21

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 %
Chromium,Hexavalent	20.0	ND	20.1	20.1	101	100	1	75.0-125			0.000	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L823383-02 Original Sample (OS) • Duplicate (DUP)

(OS) 03/16/16 10:40 • (DUP) 03/16/16 10:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
	su	su		%		%
pH	8.46	8.47	1	0.118	1	

L823472-02 Original Sample (OS) • Duplicate (DUP)

(OS) 03/16/16 10:40 • (DUP) 03/16/16 10:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
	su	su		%		%
pH	7.26	7.26	1	0.000	1	

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

(LCS) 03/16/16 10:40 • (LCSD) 03/16/16 10:40

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.31	6.31	6.30	100	99.8	98.5-102			0.159	1

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) 03/16/16 14:00

Analyte	MB Result umhos/cm	<u>MB Qualifier</u>	MB RDL umhos/cm
Specific Conductance	2.72		

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L823465-03 Original Sample (OS) • Duplicate (DUP)

(OS) 03/16/16 14:00 • (DUP) 03/16/16 14:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Specific Conductance	256	228	1	11.6		20

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

(LCS) 03/16/16 14:00 • (LCSD) 03/16/16 14:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCSD Result umhos/cm	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Specific Conductance	915	960	941	105	103	90.0-110			2.00	20



Method Blank (MB)

(MB) 03/16/16 14:41

	MB Result	MB Qualifier	MB RDL
Analyte	mg/kg		mg/kg
Chloride	ND		10.0
Sulfate	ND		50.0

<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

L823297-21 Original Sample (OS) • Duplicate (DUP)

(OS) 03/16/16 16:40 • (DUP) 03/16/16 17:04

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	60.2	60.3	1	0		15
Sulfate	3.42	3.28	1	4	J	15

L823297-24 Original Sample (OS) • Duplicate (DUP)

(OS) 03/16/16 22:39 • (DUP) 03/16/16 23:03

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	74.2	74.2	1	0		15
Sulfate	11.7	11.7	1	0	J	15

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

(LCS) 03/16/16 15:05 • (LCSD) 03/16/16 15:29

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chloride	200	194	194	97	97	80-120			0	15
Sulfate	200	195	195	98	97	80-120			0	15

L823297-22 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/16/16 17:28 • (MS) 03/16/16 17:52 • (MSD) 03/16/16 18:16

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chloride	500	89.1	608	599	104	102	1	80-120			1	15
Sulfate	500	32.1	556	547	105	103	1	80-120	J	J	2	15



Method Blank (MB)

(MB) 03/21/16 12:42

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Mercury	ND		0.0200

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

(LCS) 03/21/16 12:45 • (LCSD) 03/21/16 12:48

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 %
Mercury	0.300	0.300	0.297	100	99	80-120			1	20

L823465-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/21/16 12:51 • (MS) 03/21/16 12:54 • (MSD) 03/21/16 12:57

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 %
Mercury	0.300	0.0125	0.318	0.294	102	94	1	75-125			8	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc





Method Blank (MB)

(MB) 03/15/16 22:26

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Arsenic	ND		2.00
Barium	ND		0.500
Cadmium	ND		0.500
Chromium	ND		1.00
Copper	ND		2.00
Lead	ND		0.500
Nickel	ND		2.00
Selenium	ND		2.00
Silver	ND		1.00
Zinc	ND		5.00

<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

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

(LCS) 03/15/16 22:29 • (LCSD) 03/15/16 22:31

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 %
Arsenic	100	101	102	101	102	80-120			1	20
Barium	100	102	103	102	103	80-120			1	20
Cadmium	100	102	103	102	103	80-120			1	20
Chromium	100	101	101	101	101	80-120			0	20
Copper	100	103	103	103	103	80-120			0	20
Lead	100	101	102	101	102	80-120			1	20
Nickel	100	102	102	102	102	80-120			1	20
Selenium	100	104	104	104	104	80-120			1	20
Silver	100	100	101	100	101	80-120			0	20
Zinc	100	101	102	101	102	80-120			1	20

L823366-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/15/16 22:34 • (MS) 03/15/16 22:42 • (MSD) 03/15/16 22:45

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 %
Arsenic	100	3.46	103	99.9	99	96	1	75-125			3	20
Barium	100	86.8	193	206	107	119	1	75-125			6	20
Cadmium	100	0.165	102	98.8	101	99	1	75-125			3	20



L823366-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/15/16 22:34 • (MS) 03/15/16 22:42 • (MSD) 03/15/16 22:45

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chromium	100	6.79	107	105	100	98	1	75-125			2	20
Copper	100	6.74	110	106	103	100	1	75-125			3	20
Lead	100	7.78	112	106	104	98	1	75-125			5	20
Nickel	100	12.5	115	114	103	102	1	75-125			1	20
Selenium	100	0.305	101	97.8	100	97	1	75-125			3	20
Silver	100	0.00476	100	97.3	100	97	1	75-125			3	20
Zinc	100	30.8	131	127	100	96	1	75-125			3	20

<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) 03/19/16 20:52

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Boron	ND		9.00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) 03/19/16 20:55 • (LCSD) 03/19/16 20:58

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	10.0	9.60	9.81	96	98	80-120			2	20

L823847-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/19/16 21:01 • (MS) 03/19/16 21:07 • (MSD) 03/19/16 21:10

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	10.0	0.0828	9.74	9.95	97	99	1	75-125			2	20

Method Blank (MB)

(MB) 03/18/16 08:12

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Benzene	ND		0.000500
Toluene	ND		0.00500
Ethylbenzene	ND		0.000500
Total Xylene	ND		0.00150
TPH (GC/FID) Low Fraction	ND		0.100
(S) a,a,a-Trifluorotoluene(FID)	102		59.0-128
(S) a,a,a-Trifluorotoluene(PID)	103		54.0-144

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) 03/18/16 06:21 • (LCSD) 03/18/16 06:43

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 %
Benzene	0.0500	0.0448	0.0451	89.5	90.3	70.0-130			0.860	20
Toluene	0.0500	0.0463	0.0457	92.6	91.5	70.0-130			1.28	20
Ethylbenzene	0.0500	0.0477	0.0473	95.4	94.5	70.0-130			0.950	20
Total Xylene	0.150	0.142	0.140	94.9	93.5	70.0-130			1.41	20
(S) a,a,a-Trifluorotoluene(FID)				102	102	59.0-128				
(S) a,a,a-Trifluorotoluene(PID)				101	101	54.0-144				

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

(LCS) 03/18/16 07:05 • (LCSD) 03/18/16 07:27

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	5.59	5.71	102	104	63.5-137			2.17	20
(S) a,a,a-Trifluorotoluene(FID)				99.2	99.2	59.0-128				
(S) a,a,a-Trifluorotoluene(PID)				110	110	54.0-144				

L823465-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/18/16 19:29 • (MS) 03/18/16 16:32 • (MSD) 03/18/16 16:54

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 %
Benzene	0.0500	0.000426	0.207	0.202	82.6	80.8	5	49.7-127			2.21	23.5

L823465-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/18/16 19:29 • (MS) 03/18/16 16:32 • (MSD) 03/18/16 16:54

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 %
Toluene	0.0500	0.00170	0.200	0.196	79.4	77.8	5	49.8-132			2.01	23.5
Ethylbenzene	0.0500	0.000563	0.197	0.193	78.6	77.1	5	40.8-141			1.95	23.8
Total Xylene	0.150	0.00248	0.579	0.567	76.9	75.3	5	41.2-140			2.12	23.7
(S) a,a,a-Trifluorotoluene(FID)					101	101		59.0-128				
(S) a,a,a-Trifluorotoluene(PID)					99.7	99.8		54.0-144				

L823465-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/18/16 19:29 • (MS) 03/18/16 17:16 • (MSD) 03/18/16 17:38

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	0.0945	17.3	17.3	62.7	62.5	5	28.5-138			0.280	23.6
(S) a,a,a-Trifluorotoluene(FID)					81.5	82.4		59.0-128				
(S) a,a,a-Trifluorotoluene(PID)					107	107		54.0-144				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) 03/21/16 18:03

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
TPH (GC/FID) High Fraction	ND		4.00
(S) o-Terphenyl	76.5		50.0-150

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

(LCS) 03/21/16 18:14 • (LCSD) 03/21/16 18:28

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) High Fraction	60.0	46.3	42.2	77.1	70.3	50.0-150			9.20	20
(S) o-Terphenyl				77.2	79.3	50.0-150				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) 03/22/16 10:15

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
TPH (GC/FID) High Fraction	ND		4.00
(S) o-Terphenyl	77.5		50.0-150

<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

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

(LCS) 03/22/16 10:27 • (LCSD) 03/22/16 10:38

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) High Fraction	60.0	51.8	48.3	86.3	80.6	50.0-150			6.82	20
(S) o-Terphenyl				82.2	86.7	50.0-150				



## Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
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.
(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.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
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J	The identification of the analyte is acceptable; the reported value is an estimate.
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<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





ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

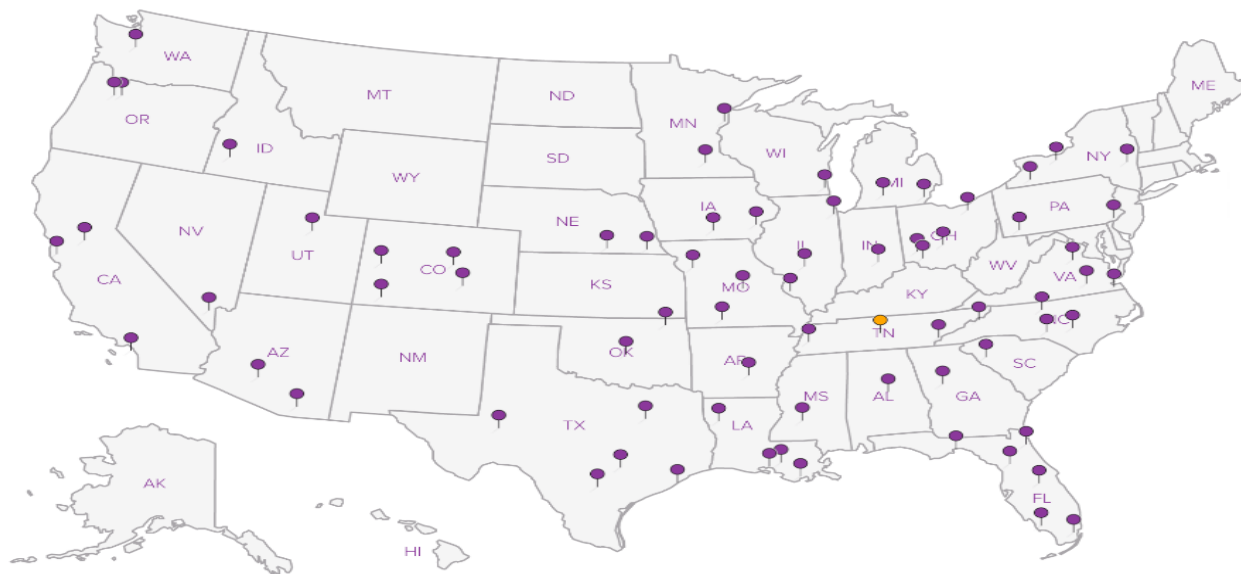
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**


<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



L923465

Table 910-1		Tiffany C 3	
CONCENTRATION LEVELS			
Contaminant of Concern	Concentrations		
Organic Compounds in Soil		Back Ground 1 (BG1)	Release Area
TPH (total volatile & extractable petroleum hydrocarbons)	500mg/kg		
Benzene	0.17 mg/kg		
Toluene	85 mg/kg		
Ethylbenzene	100mg/kg		
Xylenes (total)	175 mg/kg		
Inorganics in Soils			
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background		
Sodium Adsorption Ratio (SAR)	<12		
pH	6.0-9.0		
Inorganics			
Total Dissolved Solids (TDS)	<1.25 x background		
Chlorides	<1.25 x background		
Sulfates	<1.25 x background		
Metals in Soils			
Arsenic	0.39 mg/kg		
Barium (LDNR True Total Barium)	15,000 mg/kg		
Boron (TCLP)	2 mg/l		
Cadmium	70 mg/kg		
Chromium (III)	120,000 mg/kg		
Chromium (VI)	23 mg/kg		
Copper	3,100 mg/kg		
Lead (inorganic)	400 mg/kg		
Mercury	23 mg/kg		
Nickel (soluble salts)	1,600 mg/kg		
Selenium	390 mg/kg		
Silver	390 mg/kg		
Zinc	23,000 mg/kg		

