

Colorado Oil & Gas Conservation

Sample Delivery Group: L806436
Samples Received: 12/12/2015
Project Number: CWW
Description: Monitoring Well

Report To: Peter Gintautas
213 Corundum Road
Trinidad, CO 81082

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.



¹Cp: Cover Page	1
²Tc: Table of Contents	2
³Ss: Sample Summary	3
⁴Cn: Case Narrative	4
⁵Sr: Sample Results	5
754506+70 L806436-01	5
754506+56 L806436-02	7
754524 L806436-03	9
⁶Qc: Quality Control Summary	11
Gravimetric Analysis by Method 2540 C-2011	11
Wet Chemistry by Method 2320 B-2011	12
Wet Chemistry by Method 9040C	13
Wet Chemistry by Method 9050A	14
Wet Chemistry by Method 9056A	15
Wet Chemistry by Method 9060A	19
Metals (ICP) by Method 200.7	20
Metals (ICPMS) by Method 200.8	21
Volatile Organic Compounds (GC) by Method 8015D/GRO	23
Volatile Organic Compounds (GC/MS) by Method 8260B	24
⁷Gl: Glossary of Terms	30
⁸Al: Accreditations & Locations	31
⁹Sc: Chain of Custody	32



SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



754506+70 L806436-01 GW

Collected by
Gin / Arauza

Collected date/time
12/11/15 11:55

Received date/time
12/12/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG835118	1	12/15/15 02:10	12/15/15 02:10	DAH
Volatile Organic Compounds (GC/MS) by Method 8260B	WG836011	1	12/16/15 16:54	12/16/15 16:54	BMB

¹ Cp

² Tc

³ Ss

754506+56 L806436-02 WW

Collected by
Gin / Arauza

Collected date/time
12/11/15 11:41

Received date/time
12/12/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG835159	1	12/12/15 15:03	12/14/15 09:20	JER
Metals (ICP) by Method 200.7	WG835171	1	12/13/15 16:48	12/14/15 04:47	CCE
Metals (ICPMS) by Method 200.8	WG835600	1	12/15/15 09:22	12/15/15 21:37	JD
Wet Chemistry by Method 2320 B-2011	WG834986	1	12/14/15 12:41	12/14/15 12:41	MCG
Wet Chemistry by Method 2320 B-2011	WG835599	1	12/14/15 13:01	12/14/15 13:01	MCG
Wet Chemistry by Method 2320 B-2011	WG835601	1	12/14/15 13:01	12/14/15 13:01	MCG
Wet Chemistry by Method 9040C	WG835195	1	12/14/15 13:21	12/14/15 13:21	SJM
Wet Chemistry by Method 9050A	WG835559	1	12/15/15 12:05	12/15/15 12:05	SAM
Wet Chemistry by Method 9056A	WG834951	1	12/12/15 15:23	12/12/15 15:23	NJM
Wet Chemistry by Method 9056A	WG834951	10	12/12/15 15:36	12/12/15 15:36	NJM
Wet Chemistry by Method 9060A	WG835503	1	12/16/15 13:48	12/16/15 13:48	AS

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

754524 L806436-03 WW

Collected by
Gin / Arauza

Collected date/time
12/11/15 12:22

Received date/time
12/12/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG835159	1	12/12/15 15:03	12/14/15 09:20	JER
Metals (ICP) by Method 200.7	WG835171	1	12/13/15 16:48	12/14/15 04:51	CCE
Metals (ICPMS) by Method 200.8	WG835600	1	12/15/15 09:22	12/15/15 21:40	JD
Wet Chemistry by Method 2320 B-2011	WG834986	1	12/14/15 12:41	12/14/15 12:41	MCG
Wet Chemistry by Method 2320 B-2011	WG835599	1	12/14/15 13:01	12/14/15 13:01	MCG
Wet Chemistry by Method 2320 B-2011	WG835601	1	12/14/15 13:01	12/14/15 13:01	MCG
Wet Chemistry by Method 9040C	WG835195	1	12/14/15 13:21	12/14/15 13:21	SJM
Wet Chemistry by Method 9050A	WG835559	1	12/15/15 12:05	12/15/15 12:05	SAM
Wet Chemistry by Method 9056A	WG835135	1	12/12/15 15:19	12/12/15 15:19	NJM
Wet Chemistry by Method 9056A	WG835135	10	12/12/15 15:49	12/12/15 15:49	NJM

ACCOUNT:

Colorado Oil & Gas Conservation

PROJECT:

CWW

SDG:

L806436

DATE/TIME:

12/18/15 10:05

PAGE:

3 of 32



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
L806436-02	754506+56	9040C
L806436-03	754524	9040C

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/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.218		0.100	1	12/15/2015 02:10	WG835118
(S) a,a,a-Trifluorotoluene(FID)	99.4		62.0-128		12/15/2015 02:10	WG835118

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	12/16/2015 16:54	WG836011
Acrolein	ND		0.0500	1	12/16/2015 16:54	WG836011
Acrylonitrile	ND		0.0100	1	12/16/2015 16:54	WG836011
Benzene	ND		0.00100	1	12/16/2015 16:54	WG836011
Bromobenzene	ND		0.00100	1	12/16/2015 16:54	WG836011
Bromodichloromethane	ND		0.00100	1	12/16/2015 16:54	WG836011
Bromoform	ND		0.00100	1	12/16/2015 16:54	WG836011
Bromomethane	ND		0.00500	1	12/16/2015 16:54	WG836011
n-Butylbenzene	ND		0.00100	1	12/16/2015 16:54	WG836011
sec-Butylbenzene	ND		0.00100	1	12/16/2015 16:54	WG836011
tert-Butylbenzene	ND		0.00100	1	12/16/2015 16:54	WG836011
Carbon tetrachloride	ND		0.00100	1	12/16/2015 16:54	WG836011
Chlorobenzene	ND		0.00100	1	12/16/2015 16:54	WG836011
Chlorodibromomethane	ND		0.00100	1	12/16/2015 16:54	WG836011
Chloroethane	ND		0.00500	1	12/16/2015 16:54	WG836011
2-Chloroethyl vinyl ether	ND		0.0500	1	12/16/2015 16:54	WG836011
Chloroform	ND		0.00500	1	12/16/2015 16:54	WG836011
Chloromethane	ND		0.00250	1	12/16/2015 16:54	WG836011
2-Chlorotoluene	ND		0.00100	1	12/16/2015 16:54	WG836011
4-Chlorotoluene	ND		0.00100	1	12/16/2015 16:54	WG836011
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	12/16/2015 16:54	WG836011
1,2-Dibromoethane	ND		0.00100	1	12/16/2015 16:54	WG836011
Dibromomethane	ND		0.00100	1	12/16/2015 16:54	WG836011
1,2-Dichlorobenzene	ND		0.00100	1	12/16/2015 16:54	WG836011
1,3-Dichlorobenzene	ND		0.00100	1	12/16/2015 16:54	WG836011
1,4-Dichlorobenzene	ND		0.00100	1	12/16/2015 16:54	WG836011
Dichlorodifluoromethane	ND		0.00500	1	12/16/2015 16:54	WG836011
1,1-Dichloroethane	ND		0.00100	1	12/16/2015 16:54	WG836011
1,2-Dichloroethane	ND		0.00100	1	12/16/2015 16:54	WG836011
1,1-Dichloroethene	ND		0.00100	1	12/16/2015 16:54	WG836011
cis-1,2-Dichloroethene	ND		0.00100	1	12/16/2015 16:54	WG836011
trans-1,2-Dichloroethene	ND		0.00100	1	12/16/2015 16:54	WG836011
1,2-Dichloropropane	ND		0.00100	1	12/16/2015 16:54	WG836011
1,1-Dichloropropene	ND		0.00100	1	12/16/2015 16:54	WG836011
1,3-Dichloropropane	ND		0.00100	1	12/16/2015 16:54	WG836011
cis-1,3-Dichloropropene	ND		0.00100	1	12/16/2015 16:54	WG836011
trans-1,3-Dichloropropene	ND		0.00100	1	12/16/2015 16:54	WG836011
2,2-Dichloropropane	ND		0.00100	1	12/16/2015 16:54	WG836011
Di-isopropyl ether	ND		0.00100	1	12/16/2015 16:54	WG836011
Ethylbenzene	ND		0.00100	1	12/16/2015 16:54	WG836011
Hexachloro-1,3-butadiene	ND		0.00100	1	12/16/2015 16:54	WG836011
Isopropylbenzene	ND		0.00100	1	12/16/2015 16:54	WG836011
p-Isopropyltoluene	ND		0.00100	1	12/16/2015 16:54	WG836011
2-Butanone (MEK)	ND		0.0100	1	12/16/2015 16:54	WG836011
Methylene Chloride	ND		0.00500	1	12/16/2015 16:54	WG836011
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	12/16/2015 16:54	WG836011
Methyl tert-butyl ether	ND		0.00100	1	12/16/2015 16:54	WG836011
Naphthalene	ND		0.00500	1	12/16/2015 16:54	WG836011
n-Propylbenzene	ND		0.00100	1	12/16/2015 16:54	WG836011

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch	
Styrene	ND		0.00100	1	12/16/2015 16:54	WG836011	¹ Cp
1,1,1,2-Tetrachloroethane	ND		0.00100	1	12/16/2015 16:54	WG836011	² Tc
1,1,2,2-Tetrachloroethane	ND		0.00100	1	12/16/2015 16:54	WG836011	
Tetrachloroethene	ND		0.00100	1	12/16/2015 16:54	WG836011	³ Ss
Toluene	ND		0.00500	1	12/16/2015 16:54	WG836011	
1,2,3-Trichlorobenzene	ND		0.00100	1	12/16/2015 16:54	WG836011	⁴ Cn
1,2,4-Trichlorobenzene	ND		0.00100	1	12/16/2015 16:54	WG836011	
1,1,1-Trichloroethane	ND		0.00100	1	12/16/2015 16:54	WG836011	⁵ Sr
1,1,2-Trichloroethane	ND		0.00100	1	12/16/2015 16:54	WG836011	
Trichloroethene	ND		0.00100	1	12/16/2015 16:54	WG836011	⁶ Qc
Trichlorofluoromethane	ND		0.00500	1	12/16/2015 16:54	WG836011	
1,2,3-Trichloropropane	ND		0.00250	1	12/16/2015 16:54	WG836011	⁷ Gl
1,2,4-Trimethylbenzene	ND		0.00100	1	12/16/2015 16:54	WG836011	
1,3,5-Trimethylbenzene	ND		0.00100	1	12/16/2015 16:54	WG836011	⁸ Al
Vinyl chloride	ND		0.00100	1	12/16/2015 16:54	WG836011	
Xylenes, Total	ND		0.00300	1	12/16/2015 16:54	WG836011	⁹ Sc
(S) Toluene-d8	101		90.0-115		12/16/2015 16:54	WG836011	
(S) Dibromofluoromethane	98.2		79.0-121		12/16/2015 16:54	WG836011	
(S) α,α,α-Trifluorotoluene	105		90.4-116		12/16/2015 16:54	WG836011	
(S) 4-Bromofluorobenzene	103		80.1-120		12/16/2015 16:54	WG836011	



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	727		10.0	1	12/14/2015 09:20	WG835159

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	237		20.0	1	12/14/2015 12:41	WG834986
Alkalinity,Bicarbonate	221		20.0	1	12/14/2015 13:01	WG835599
Alkalinity,Carbonate	ND		20.0	1	12/14/2015 13:01	WG835601

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.84		1	12/14/2015 13:21	WG835195

Sample Narrative:

9040C L806436-02 WG835195: 8.84 at 21.2c

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	umhos/cm			date / time	
Specific Conductance	1180		1	12/15/2015 12:05	WG835559

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Bromide	ND		1.00	1	12/12/2015 15:23	WG834951
Chloride	24.9		1.00	1	12/12/2015 15:23	WG834951
Fluoride	0.861		0.100	1	12/12/2015 15:23	WG834951
Nitrate	ND		0.100	1	12/12/2015 15:23	WG834951
Nitrite	ND		0.100	1	12/12/2015 15:23	WG834951
Sulfate	302		50.0	10	12/12/2015 15:36	WG834951

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
TOC (Total Organic Carbon)	1.43		1.00	1	12/16/2015 13:48	WG835503

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium,Dissolved	0.0383		0.0150	1	12/14/2015 04:47	WG835171
Strontium,Dissolved	0.525		0.0100	1	12/14/2015 04:47	WG835171

Metals (ICPMS) by Method 200.8

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Arsenic,Dissolved	0.00260		0.00200	1	12/15/2015 21:37	WG835600
Barium,Dissolved	0.0150		0.00500	1	12/15/2015 21:37	WG835600
Beryllium,Dissolved	ND		0.00200	1	12/15/2015 21:37	WG835600
Boron,Dissolved	0.0633		0.0200	1	12/15/2015 21:37	WG835600
Cadmium,Dissolved	ND		0.00100	1	12/15/2015 21:37	WG835600
Calcium,Dissolved	18.8		1.00	1	12/15/2015 21:37	WG835600



Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Copper,Dissolved	ND		0.00500	1	12/15/2015 21:37	WG835600
Iron,Dissolved	ND		0.100	1	12/15/2015 21:37	WG835600
Lead,Dissolved	ND		0.00200	1	12/15/2015 21:37	WG835600
Magnesium,Dissolved	4.80		1.00	1	12/15/2015 21:37	WG835600
Manganese,Dissolved	0.0617		0.00500	1	12/15/2015 21:37	WG835600
Molybdenum,Dissolved	ND		0.00500	1	12/15/2015 21:37	WG835600
Nickel,Dissolved	ND		0.00200	1	12/15/2015 21:37	WG835600
Potassium,Dissolved	2.09		1.00	1	12/15/2015 21:37	WG835600
Selenium,Dissolved	ND		0.00200	1	12/15/2015 21:37	WG835600
Sodium,Dissolved	221		1.00	1	12/15/2015 21:37	WG835600
Zinc,Dissolved	ND		0.0250	1	12/15/2015 21:37	WG835600

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	602		10.0	1	12/14/2015 09:20	WG835159

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	138		20.0	1	12/14/2015 12:41	WG834986
Alkalinity,Bicarbonate	138		20.0	1	12/14/2015 13:01	WG835599
Alkalinity,Carbonate	ND		20.0	1	12/14/2015 13:01	WG835601

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.42		1	12/14/2015 13:21	WG835195

Sample Narrative:

9040C L806436-03 WG835195: 8.42 at 21.3c

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	umhos/cm			date / time	
Specific Conductance	890		1	12/15/2015 12:05	WG835559

Wet Chemistry by Method 9056A

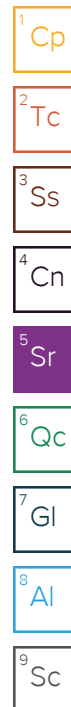
Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Bromide	ND		1.00	1	12/12/2015 15:19	WG835135
Chloride	28.9		1.00	1	12/12/2015 15:19	WG835135
Fluoride	0.978		0.100	1	12/12/2015 15:19	WG835135
Nitrate	ND		0.100	1	12/12/2015 15:19	WG835135
Nitrite	ND		0.100	1	12/12/2015 15:19	WG835135
Sulfate	300		50.0	10	12/12/2015 15:49	WG835135

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium,Dissolved	0.0388		0.0150	1	12/14/2015 04:51	WG835171
Strontium,Dissolved	1.24		0.0100	1	12/14/2015 04:51	WG835171

Metals (ICPMS) by Method 200.8

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Arsenic,Dissolved	0.00269		0.00200	1	12/15/2015 21:40	WG835600
Barium,Dissolved	0.0935		0.00500	1	12/15/2015 21:40	WG835600
Beryllium,Dissolved	ND		0.00200	1	12/15/2015 21:40	WG835600
Boron,Dissolved	0.122		0.0200	1	12/15/2015 21:40	WG835600
Cadmium,Dissolved	ND		0.00100	1	12/15/2015 21:40	WG835600
Calcium,Dissolved	63.6		1.00	1	12/15/2015 21:40	WG835600
Copper,Dissolved	ND		0.00500	1	12/15/2015 21:40	WG835600
Iron,Dissolved	ND		0.100	1	12/15/2015 21:40	WG835600
Lead,Dissolved	ND		0.00200	1	12/15/2015 21:40	WG835600
Magnesium,Dissolved	41.8		1.00	1	12/15/2015 21:40	WG835600
Manganese,Dissolved	ND		0.00500	1	12/15/2015 21:40	WG835600
Molybdenum,Dissolved	0.00639		0.00500	1	12/15/2015 21:40	WG835600





Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Nickel,Dissolved	ND		0.00200	1	12/15/2015 21:40	WG835600
Potassium,Dissolved	5.17		1.00	1	12/15/2015 21:40	WG835600
Selenium,Dissolved	ND		0.00200	1	12/15/2015 21:40	WG835600
Sodium,Dissolved	54.5		1.00	1	12/15/2015 21:40	WG835600
Zinc,Dissolved	ND		0.0250	1	12/15/2015 21:40	WG835600

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) 12/14/15 09:20

	MB Result	<u>MB Qualifier</u>	MB RDL
Analyte	mg/l		mg/l
Dissolved Solids	ND		10.0

L806394-01 Original Sample (OS) • Duplicate (DUP)

(OS) 12/14/15 09:20 • (DUP) 12/14/15 09:20

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	25800	26500	1	2.45		5

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

(LCS) 12/14/15 09:20 • (LCSD) 12/14/15 09:20

	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/l	mg/l	mg/l	%	%	%			%	%
Dissolved Solids	8800	8520	8440	96.8	95.9	85.0-115			0.943	5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) 12/14/15 12:41							
	MB Result	MB Qualifier	MB RDL				
Analyte	mg/l		mg/l				
Alkalinity	ND		20.0				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L804452-02 Original Sample (OS) • Duplicate (DUP)

(OS) 12/14/15 12:41 • (DUP) 12/14/15 12:41						
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Alkalinity	149	147	1	1.35		20

L805807-09 Original Sample (OS) • Duplicate (DUP)

(OS) 12/14/15 12:41 • (DUP) 12/14/15 12:41						
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Alkalinity	297	294	1	1.02		20

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

(LCS) 12/14/15 12:41 • (LCSD) 12/14/15 12:41										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Alkalinity	100	111	108	111	108	85.0-115			2.74	20

L804452-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/14/15 12:41 • (MS) 12/14/15 12:41 • (MSD) 12/14/15 12:41												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Alkalinity	100	171	256	258	85.0	87.0	1	80.0-120			0.778	20



L806231-01 Original Sample (OS) • Duplicate (DUP)

(OS) 12/14/15 13:21 • (DUP) 12/14/15 13:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	SU	SU		%		%
pH	8.42	8.43	1	0.119	1	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

L806450-01 Original Sample (OS) • Duplicate (DUP)

(OS) 12/14/15 13:21 • (DUP) 12/14/15 13:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	SU	SU		%		%
pH	11.3	11.1	1	1.79	1	

⁷ Gl

⁸ Al

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

(LCS) 12/14/15 13:21 • (LCSD) 12/14/15 13:21

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	SU	SU	SU	%	%	%			%	%
pH	6.72	6.71	6.70	99.9	99.7	98.5-102			0.149	1

⁹ Sc

Method Blank (MB)

(MB) 12/15/15 12:05

	MB Result	<u>MB Qualifier</u>	MB RDL
Analyte	umhos/cm		umhos/cm
Specific Conductance	0.930		

L805807-14 Original Sample (OS) • Duplicate (DUP)

(OS) 12/15/15 12:05 • (DUP) 12/15/15 12:05

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	9620	9740	1	1.24		20

L806674-01 Original Sample (OS) • Duplicate (DUP)

(OS) 12/15/15 12:05 • (DUP) 12/15/15 12:05

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	738	741	1	0.406		20

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

(LCS) 12/15/15 12:05 • (LCSD) 12/15/15 12:05

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
Analyte	umhos/cm	umhos/cm	umhos/cm	%	%	%			%	%
Specific Conductance	915	954	954	104	104	90.0-110			0.000	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) 12/12/15 06:27

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Bromide	ND		1.00
Chloride	ND		1.00
Fluoride	ND		0.100
Nitrate	ND		0.100
Nitrite	ND		0.100
Sulfate	ND		5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L806132-10 Original Sample (OS) • Duplicate (DUP)

(OS) 12/12/15 09:22 • (DUP) 12/12/15 13:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.000	1	0		15
Chloride	25.1	25.2	1	0		15
Fluoride	0.183	0.183	1	0		15
Nitrate	ND	0.000	1	0		15
Nitrite	ND	0.000	1	0		15
Sulfate	33.4	33.4	1	0		15

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

(LCS) 12/12/15 06:41 • (LCSD) 12/12/15 06:55

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 %
Bromide	40.0	39.4	39.2	98	98	80-120			0	15
Chloride	40.0	38.7	38.7	97	97	80-120			0	15
Fluoride	8.00	7.77	7.77	97	97	80-120			0	15
Nitrate	8.00	7.90	7.89	99	99	80-120			0	15
Nitrite	8.00	7.69	7.71	96	96	80-120			0	15
Sulfate	40.0	39.1	39.0	98	98	80-120			0	15



L806078-02 Original Sample (OS) • Matrix Spike (MS)

(OS) 12/12/15 12:44 • (MS) 12/12/15 13:53

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Bromide	50.0	ND	44.9	90	1	80-120	
Chloride	50.0	78.7	124	90	1	80-120	
Fluoride	5.00	0.811	5.75	99	1	80-120	
Nitrate	5.00	ND	4.69	94	1	80-120	
Nitrite	5.00	ND	4.94	99	1	80-120	
Sulfate	50.0	93.0	136	86	1	80-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) 12/12/15 07:18

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Bromide	ND		1.00
Chloride	ND		1.00
Fluoride	ND		0.100
Nitrate	ND		0.100
Nitrite	ND		0.100
Sulfate	ND		5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L806418-05 Original Sample (OS) • Duplicate (DUP)

(OS) 12/12/15 11:57 • (DUP) 12/12/15 13:27

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	0.370	0.294	1	23	P1	15
Fluoride	1.69	1.66	1	2		15
Nitrate	ND	0.000	1	0		15
Nitrite	ND	0.000	1	0		15

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

(LCS) 12/12/15 07:33 • (LCSD) 12/12/15 07:48

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 %
Bromide	40.0	40.4	40.2	101	100	80-120			1	15
Chloride	40.0	40.0	39.8	100	99	80-120			0	15
Fluoride	8.00	8.05	8.01	101	100	80-120			0	15
Nitrate	8.00	8.29	8.25	104	103	80-120			1	15
Nitrite	8.00	8.12	8.09	102	101	80-120			0	15
Sulfate	40.0	40.2	40.0	101	100	80-120			0	15

L806436-03 Original Sample (OS) • Matrix Spike (MS)

(OS) 12/12/15 15:19 • (MS) 12/12/15 15:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	50.0	0.0569	47.9	96	1	80-120	



L806436-03 Original Sample (OS) • Matrix Spike (MS)

(OS) 12/12/15 15:19 • (MS) 12/12/15 15:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	28.9	77.9	98	1	80-120	
Fluoride	5.00	0.978	5.77	96	1	80-120	
Nitrate	5.00	ND	4.57	91	1	80-120	
Nitrite	5.00	ND	5.18	104	1	80-120	

L806436-03 Original Sample (OS) • Matrix Spike (MS)

(OS) 12/12/15 15:49 • (MS) 12/12/15 16:04

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50.0	300	790	98	10	80-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) 12/16/15 08:43

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
TOC	ND		1.00

L806822-02 Original Sample (OS) • Duplicate (DUP)

(OS) 12/16/15 15:04 • (DUP) 12/16/15 15:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC	2.82	2.84	1	0.707		20

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

(LCS) 12/16/15 09:39 • (LCSD) 12/16/15 10:52

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 %
TOC	75.0	72.5	72.6	96.7	96.9	85.0-115			0.193	20

L806822-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/16/15 14:21 • (MS) 12/16/15 14:38 • (MSD) 12/16/15 14:53

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 %
TOC	50.0	4.20	51.9	50.2	95.3	92.0	1	80.0-120			3.19	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) 12/14/15 04:01

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Lithium,Dissolved	ND		0.0150
Strontium,Dissolved	ND		0.0100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) 12/14/15 04:04 • (LCSD) 12/14/15 04:07

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 %
Lithium,Dissolved	1.00	1.07	1.05	107	105	85-115			1	20
Strontium,Dissolved	1.00	1.05	1.03	105	103	85-115			2	20

L805141-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/14/15 04:10 • (MS) 12/14/15 04:16 • (MSD) 12/14/15 04:19

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 %
Lithium,Dissolved	1.00	0.00593	1.08	1.08	107	107	1	75-125			0	20
Strontium,Dissolved	1.00	0.501	1.54	1.54	104	104	1	75-125			0	20



Method Blank (MB)

(MB) 12/15/15 21:16

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Arsenic,Dissolved	ND		0.00200
Barium,Dissolved	ND		0.00500
Beryllium,Dissolved	ND		0.00200
Boron,Dissolved	ND		0.0200
Cadmium,Dissolved	ND		0.00100
Calcium,Dissolved	ND		1.00
Copper,Dissolved	ND		0.00500
Iron,Dissolved	ND		0.100
Lead,Dissolved	ND		0.00200
Magnesium,Dissolved	ND		1.00
Manganese,Dissolved	ND		0.00500
Molybdenum,Dissolved	ND		0.00500
Nickel,Dissolved	ND		0.00200
Potassium,Dissolved	ND		1.00
Selenium,Dissolved	ND		0.00200
Sodium,Dissolved	ND		1.00
Zinc,Dissolved	ND		0.0250

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) 12/15/15 21:18 • (LCSD) 12/15/15 21:21

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 %
Arsenic,Dissolved	0.0500	0.0504	0.0513	101	103	85-115			2	20
Barium,Dissolved	0.0500	0.0505	0.0513	101	103	85-115			2	20
Beryllium,Dissolved	0.0500	0.0484	0.0481	97	96	85-115			1	20
Boron,Dissolved	0.0500	0.0551	0.0555	110	111	85-115			1	20
Cadmium,Dissolved	0.0500	0.0533	0.0550	107	110	85-115			3	20
Calcium,Dissolved	5.00	5.03	5.06	101	101	85-115			1	20
Copper,Dissolved	0.0500	0.0545	0.0533	109	107	85-115			2	20
Iron,Dissolved	5.00	4.97	4.95	99	99	85-115			0	20
Lead,Dissolved	0.0500	0.0519	0.0514	104	103	85-115			1	20
Magnesium,Dissolved	5.00	4.97	4.96	99	99	85-115			0	20
Manganese,Dissolved	0.0500	0.0495	0.0497	99	99	85-115			0	20
Molybdenum,Dissolved	0.0500	0.0495	0.0490	99	98	85-115			1	20
Nickel,Dissolved	0.0500	0.0538	0.0518	108	104	85-115			4	20



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

(LCS) 12/15/15 21:18 • (LCSD) 12/15/15 21:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Potassium,Dissolved	5.00	5.00	4.94	100	99	85-115			1	20
Selenium,Dissolved	0.0500	0.0517	0.0503	103	101	85-115			3	20
Sodium,Dissolved	5.00	5.10	5.10	102	102	85-115			0	20
Zinc,Dissolved	0.0500	0.0532	0.0562	106	112	85-115			5	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) 12/14/15 13:53

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
TPH (GC/FID) Low Fraction	ND		0.100
(S) a,a,a-Trifluorotoluene(FID)	99.6		62.0-128

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) 12/14/15 12:51 • (LCSD) 12/14/15 13:12

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 %
TPH (GC/FID) Low Fraction	5.50	6.86	6.46	125	117	67.0-132			6.09	20
(S) a,a,a-Trifluorotoluene(FID)				103	103	62.0-128				

L805343-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/14/15 14:39 • (MS) 12/14/15 15:41 • (MSD) 12/14/15 16:02

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 %
TPH (GC/FID) Low Fraction	5.50	ND	6.48	6.75	118	123	1	50.0-143			4.01	20
(S) a,a,a-Trifluorotoluene(FID)					101	101		62.0-128				



Method Blank (MB)

(MB) 12/16/15 14:11

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Acetone	ND		0.0500
Acrolein	ND		0.0500
Acrylonitrile	ND		0.0100
Benzene	ND		0.00100
Bromobenzene	ND		0.00100
Bromodichloromethane	ND		0.00100
Bromoform	ND		0.00100
Bromomethane	ND		0.00500
n-Butylbenzene	ND		0.00100
sec-Butylbenzene	ND		0.00100
tert-Butylbenzene	ND		0.00100
Carbon tetrachloride	ND		0.00100
Chlorobenzene	ND		0.00100
Chlorodibromomethane	ND		0.00100
Chloroethane	ND		0.00500
2-Chloroethyl vinyl ether	ND		0.0500
Chloroform	ND		0.00500
Chloromethane	ND		0.00250
2-Chlorotoluene	ND		0.00100
4-Chlorotoluene	ND		0.00100
1,2-Dibromo-3-Chloropropane	ND		0.00500
1,2-Dibromoethane	ND		0.00100
Dibromomethane	ND		0.00100
1,2-Dichlorobenzene	ND		0.00100
1,3-Dichlorobenzene	ND		0.00100
1,4-Dichlorobenzene	ND		0.00100
Dichlorodifluoromethane	ND		0.00500
1,1-Dichloroethane	ND		0.00100
1,2-Dichloroethane	ND		0.00100
1,1-Dichloroethene	ND		0.00100
cis-1,2-Dichloroethene	ND		0.00100
trans-1,2-Dichloroethene	ND		0.00100
1,2-Dichloropropane	ND		0.00100
1,1-Dichloropropene	ND		0.00100
1,3-Dichloropropane	ND		0.00100
cis-1,3-Dichloropropene	ND		0.00100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) 12/16/15 14:11

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
trans-1,3-Dichloropropene	ND		0.00100
2,2-Dichloropropane	ND		0.00100
Di-isopropyl ether	ND		0.00100
Ethylbenzene	ND		0.00100
Hexachloro-1,3-butadiene	ND		0.00100
Isopropylbenzene	ND		0.00100
p-Isopropyltoluene	ND		0.00100
2-Butanone (MEK)	ND		0.0100
Methylene Chloride	ND		0.00500
4-Methyl-2-pentanone (MIBK)	ND		0.0100
Methyl tert-butyl ether	ND		0.00100
Naphthalene	ND		0.00500
1,1,2,2-Tetrachloroethane	ND		0.00100
n-Propylbenzene	ND		0.00100
Tetrachloroethene	ND		0.00100
Styrene	ND		0.00100
1,1,1,2-Tetrachloroethane	ND		0.00100
Toluene	ND		0.00500
1,1,1-Trichloroethane	ND		0.00100
1,1,2-Trichloroethane	ND		0.00100
Trichloroethene	ND		0.00100
1,2,3-Trichlorobenzene	ND		0.00100
1,2,4-Trichlorobenzene	ND		0.00100
Trichlorofluoromethane	ND		0.00500
1,2,3-Trichloropropane	ND		0.00250
Vinyl chloride	ND		0.00100
1,2,4-Trimethylbenzene	ND		0.00100
1,3,5-Trimethylbenzene	ND		0.00100
Xylenes, Total	ND		0.00300
(S) Toluene-d8	101		90.0-115
(S) Dibromofluoromethane	101		79.0-121
(S) a,a,a-Trifluorotoluene	104		90.4-116
(S) 4-Bromofluorobenzene	104		80.1-120

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) 12/16/15 12:54 • (LCSD) 12/16/15 13:14

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 %
Acetone	0.125	0.142	0.149	114	119	28.7-175			4.54	20.9
Acrolein	0.125	0.181	0.188	145	150	40.4-172			3.81	20
Acrylonitrile	0.125	0.129	0.135	103	108	58.2-145			4.33	20
Benzene	0.0250	0.0247	0.0262	98.8	105	73.0-122			5.84	20
Bromobenzene	0.0250	0.0265	0.0282	106	113	81.5-115			6.27	20
Bromodichloromethane	0.0250	0.0268	0.0281	107	113	75.5-121			5.05	20
Bromoform	0.0250	0.0281	0.0295	112	118	71.5-131			4.95	20
Bromomethane	0.0250	0.0276	0.0315	111	126	22.4-187			13.0	20
n-Butylbenzene	0.0250	0.0276	0.0297	110	119	75.9-134			7.32	20
sec-Butylbenzene	0.0250	0.0269	0.0289	108	116	80.6-126			7.16	20
tert-Butylbenzene	0.0250	0.0274	0.0294	110	118	79.3-127			7.18	20
Carbon tetrachloride	0.0250	0.0270	0.0284	108	114	70.9-129			4.95	20
Chlorobenzene	0.0250	0.0262	0.0280	105	112	79.7-122			6.44	20
Chlorodibromomethane	0.0250	0.0286	0.0303	115	121	78.2-124			5.61	20
Chloroethane	0.0250	0.0327	0.0339	131	136	41.2-153			3.57	20
2-Chloroethyl vinyl ether	0.125	0.140	0.150	112	120	23.4-162			6.36	23.5
Chloroform	0.0250	0.0264	0.0279	106	112	73.2-125			5.37	20
Chloromethane	0.0250	0.0226	0.0235	90.4	94.2	55.8-134			4.07	20
2-Chlorotoluene	0.0250	0.0266	0.0277	106	111	76.4-125			4.18	20
4-Chlorotoluene	0.0250	0.0264	0.0282	106	113	81.5-121			6.65	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0272	0.0293	109	117	64.8-131			7.32	20
1,2-Dibromoethane	0.0250	0.0281	0.0293	112	117	79.8-122			4.16	20
1,2-Dichlorobenzene	0.0250	0.0264	0.0282	105	113	84.7-118			6.63	20
Dibromomethane	0.0250	0.0266	0.0280	107	112	79.5-118			5.11	20
1,3-Dichlorobenzene	0.0250	0.0265	0.0281	106	113	77.6-127			5.81	20
1,4-Dichlorobenzene	0.0250	0.0251	0.0265	101	106	82.2-114			5.41	20
Dichlorodifluoromethane	0.0250	0.0300	0.0305	120	122	56.0-134			1.68	20
1,1-Dichloroethane	0.0250	0.0255	0.0274	102	110	71.7-127			6.98	20
1,2-Dichloroethane	0.0250	0.0276	0.0291	110	116	65.3-126			5.35	20
1,1-Dichloroethene	0.0250	0.0264	0.0287	105	115	59.9-137			8.53	20
trans-1,2-Dichloroethene	0.0250	0.0256	0.0278	102	111	72.6-125			8.06	20
cis-1,2-Dichloroethene	0.0250	0.0257	0.0270	103	108	77.3-122			5.08	20
1,2-Dichloropropane	0.0250	0.0245	0.0262	98.2	105	77.4-125			6.47	20
1,1-Dichloropropene	0.0250	0.0269	0.0282	107	113	72.5-127			4.95	20
1,3-Dichloropropane	0.0250	0.0266	0.0283	107	113	80.6-115			6.11	20
cis-1,3-Dichloropropene	0.0250	0.0268	0.0280	107	112	77.7-124			4.34	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



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

(LCS) 12/16/15 12:54 • (LCSD) 12/16/15 13:14

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 %
trans-1,3-Dichloropropene	0.0250	0.0272	0.0288	109	115	73.5-127			5.96	20
2,2-Dichloropropane	0.0250	0.0277	0.0290	111	116	61.3-134			4.63	20
Di-isopropyl ether	0.0250	0.0243	0.0252	97.2	101	65.1-135			3.54	20
Ethylbenzene	0.0250	0.0267	0.0283	107	113	80.9-121			5.91	20
Hexachloro-1,3-butadiene	0.0250	0.0278	0.0304	111	122	73.7-133			9.05	20
Isopropylbenzene	0.0250	0.0270	0.0289	108	115	81.6-124			6.69	20
p-Isopropyltoluene	0.0250	0.0271	0.0292	108	117	77.6-129			7.34	20
2-Butanone (MEK)	0.125	0.142	0.147	114	118	46.4-155			3.35	20
Methylene Chloride	0.0250	0.0240	0.0253	95.9	101	69.5-120			5.52	20
4-Methyl-2-pentanone (MIBK)	0.125	0.125	0.130	100	104	63.3-138			3.90	20
Methyl tert-butyl ether	0.0250	0.0261	0.0270	104	108	70.1-125			3.48	20
Naphthalene	0.0250	0.0260	0.0281	104	113	69.7-134			7.91	20
n-Propylbenzene	0.0250	0.0269	0.0290	107	116	81.9-122			7.67	20
Styrene	0.0250	0.0270	0.0289	108	116	79.9-124			6.75	20
1,1,1,2-Tetrachloroethane	0.0250	0.0274	0.0295	110	118	78.5-125			7.17	20
1,1,2,2-Tetrachloroethane	0.0250	0.0278	0.0291	111	116	79.3-123			4.63	20
Tetrachloroethene	0.0250	0.0266	0.0285	106	114	73.5-130			6.66	20
Toluene	0.0250	0.0260	0.0274	104	109	77.9-116			5.29	20
1,2,3-Trichlorobenzene	0.0250	0.0283	0.0305	113	122	75.7-134			7.42	20
1,2,4-Trichlorobenzene	0.0250	0.0279	0.0303	112	121	76.1-136			8.32	20
1,1,1-Trichloroethane	0.0250	0.0282	0.0297	113	119	71.1-129			5.41	20
1,1,2-Trichloroethane	0.0250	0.0274	0.0291	109	116	81.6-120			6.02	20
Trichloroethene	0.0250	0.0260	0.0281	104	112	79.5-121			7.78	20
Trichlorofluoromethane	0.0250	0.0303	0.0322	121	129	49.1-157			6.01	20
1,2,3-Trichloropropane	0.0250	0.0276	0.0288	110	115	74.9-124			4.37	20
1,2,4-Trimethylbenzene	0.0250	0.0270	0.0285	108	114	79.0-122			5.28	20
1,3,5-Trimethylbenzene	0.0250	0.0268	0.0285	107	114	81.0-123			6.11	20
Vinyl chloride	0.0250	0.0274	0.0287	110	115	61.5-134			4.64	20
Xylenes, Total	0.0750	0.0789	0.0827	105	110	79.2-122			4.71	20
(S) Toluene-d8				102	100	90.0-115				
(S) Dibromofluoromethane				101	99.7	79.0-121				
(S) a,a,a-Trifluorotoluene				104	104	90.4-116				
(S) 4-Bromofluorobenzene				106	105	80.1-120				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L805523-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/16/15 15:37 • (MS) 12/16/15 15:56 • (MSD) 12/16/15 16:15

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 %
Acetone	0.125	0.00475	0.0668	0.0685	49.6	51.0	1	25.0-156			2.52	21.5
Acrolein	0.125	ND	0.181	0.186	145	149	1	34.0-194			2.83	21.5
Acrylonitrile	0.125	ND	0.119	0.123	95.4	98.0	1	55.9-161			2.66	20
Benzene	0.0250	ND	0.0225	0.0223	89.9	89.3	1	58.6-133			0.740	20
Bromobenzene	0.0250	ND	0.0256	0.0253	102	101	1	70.6-125			1.01	20
Bromodichloromethane	0.0250	ND	0.0254	0.0252	101	101	1	69.2-127			0.550	20
Bromoform	0.0250	ND	0.0270	0.0275	108	110	1	66.3-140			1.98	20
Bromomethane	0.0250	ND	0.0250	0.0253	100	101	1	16.6-183			1.04	20.5
n-Butylbenzene	0.0250	ND	0.0265	0.0264	106	106	1	64.8-145			0.200	20
sec-Butylbenzene	0.0250	ND	0.0264	0.0263	106	105	1	66.8-139			0.650	20
tert-Butylbenzene	0.0250	ND	0.0268	0.0267	107	107	1	67.1-138			0.560	20
Carbon tetrachloride	0.0250	ND	0.0241	0.0243	96.3	97.3	1	60.6-139			1.02	20
Chlorobenzene	0.0250	ND	0.0256	0.0251	102	100	1	70.1-130			2.18	20
Chlorodibromomethane	0.0250	ND	0.0275	0.0277	110	111	1	71.6-132			0.650	20
Chloroethane	0.0250	ND	0.0265	0.0271	106	109	1	33.3-155			2.47	20
2-Chloroethyl vinyl ether	0.125	ND	0.000464	0.000253	0.371	0.203	1	5.00-149	J6	J3 J6	58.7	40
Chloroform	0.0250	ND	0.0251	0.0252	101	101	1	66.1-133			0.220	20
Chloromethane	0.0250	ND	0.0178	0.0180	71.2	71.8	1	40.7-139			0.940	20
2-Chlorotoluene	0.0250	ND	0.0251	0.0250	100	100	1	66.9-134			0.330	20
4-Chlorotoluene	0.0250	ND	0.0258	0.0253	103	101	1	66.8-134			1.95	20
1,2-Dibromo-3-Chloropropane	0.0250	ND	0.0253	0.0271	101	108	1	63.9-142			6.95	20.2
1,2-Dibromoethane	0.0250	ND	0.0265	0.0259	106	103	1	73.8-131			2.49	20
1,2-Dichlorobenzene	0.0250	ND	0.0254	0.0253	101	101	1	77.4-127			0.340	20
Dibromomethane	0.0250	ND	0.0245	0.0245	98.1	97.9	1	72.8-127			0.130	20
1,3-Dichlorobenzene	0.0250	ND	0.0259	0.0255	103	102	1	67.9-136			1.33	20
1,4-Dichlorobenzene	0.0250	ND	0.0240	0.0238	96.0	95.3	1	74.4-123			0.770	20
Dichlorodifluoromethane	0.0250	ND	0.0240	0.0235	95.9	94.0	1	42.2-146			1.98	20
1,1-Dichloroethane	0.0250	ND	0.0235	0.0235	93.9	94.2	1	64.0-134			0.340	20
1,2-Dichloroethane	0.0250	ND	0.0256	0.0258	102	103	1	60.7-132			0.850	20
1,1-Dichloroethene	0.0250	ND	0.0230	0.0223	92.1	89.3	1	48.8-144			3.13	20
cis-1,2-Dichloroethene	0.0250	ND	0.0243	0.0235	97.0	94.0	1	60.6-136			3.20	20
trans-1,2-Dichloroethene	0.0250	ND	0.0219	0.0220	87.4	87.9	1	61.0-132			0.490	20
1,2-Dichloropropane	0.0250	ND	0.0235	0.0231	94.1	92.4	1	69.7-130			1.78	20
1,1-Dichloropropene	0.0250	ND	0.0236	0.0231	94.5	92.4	1	61.5-136			2.24	20
1,3-Dichloropropane	0.0250	ND	0.0260	0.0256	104	103	1	74.3-123			1.53	20
cis-1,3-Dichloropropene	0.0250	ND	0.0257	0.0259	103	104	1	71.1-129			0.760	20

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

L805523-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 12/16/15 15:37 • (MS) 12/16/15 15:56 • (MSD) 12/16/15 16:15

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 %
trans-1,3-Dichloropropene	0.0250	ND	0.0257	0.0260	103	104	1	66.3-136			0.960	20
2,2-Dichloropropane	0.0250	ND	0.0256	0.0253	103	101	1	54.9-142			1.41	20
Ethylbenzene	0.0250	0.000151	0.0258	0.0254	103	101	1	62.7-136			1.80	20
Di-isopropyl ether	0.0250	ND	0.0224	0.0224	89.6	89.7	1	59.9-140			0.120	20
Hexachloro-1,3-butadiene	0.0250	ND	0.0274	0.0272	110	109	1	61.1-144			0.590	20.1
Isopropylbenzene	0.0250	ND	0.0263	0.0260	105	104	1	67.4-136			1.30	20
p-Isopropyltoluene	0.0250	ND	0.0267	0.0266	107	106	1	62.8-143			0.350	20
Methylene Chloride	0.0250	ND	0.0217	0.0212	86.9	84.7	1	61.5-125			2.51	20
2-Butanone (MEK)	0.125	ND	0.0954	0.0962	76.3	76.9	1	45.0-156			0.830	20.8
4-Methyl-2-pentanone (MIBK)	0.125	ND	0.116	0.117	92.8	93.2	1	60.7-150			0.470	20
Methyl tert-butyl ether	0.0250	ND	0.0244	0.0246	97.5	98.3	1	61.4-136			0.830	20
Naphthalene	0.0250	0.000154	0.0248	0.0255	98.5	101	1	61.8-143			2.70	20
n-Propylbenzene	0.0250	ND	0.0262	0.0260	105	104	1	63.2-139			0.880	20
Styrene	0.0250	ND	0.0265	0.0258	106	103	1	68.2-133			2.79	20
1,1,1,2-Tetrachloroethane	0.0250	ND	0.0276	0.0274	111	109	1	70.5-132			1.00	20
1,1,2,2-Tetrachloroethane	0.0250	ND	0.0270	0.0271	108	108	1	64.9-145			0.320	20
Tetrachloroethene	0.0250	ND	0.0250	0.0241	100	96.4	1	57.4-141			3.69	20
Toluene	0.0250	0.000554	0.0244	0.0244	95.5	95.5	1	67.8-124			0.0700	20
1,2,3-Trichlorobenzene	0.0250	ND	0.0275	0.0278	110	111	1	65.7-143			0.990	20
1,2,4-Trichlorobenzene	0.0250	ND	0.0269	0.0273	108	109	1	67.0-146			1.65	20
1,1,1-Trichloroethane	0.0250	ND	0.0262	0.0262	105	105	1	58.7-134			0.160	20
1,1,2-Trichloroethane	0.0250	ND	0.0269	0.0265	108	106	1	74.1-130			1.48	20
Trichloroethene	0.0250	ND	0.0241	0.0243	96.3	97.0	1	48.9-148			0.710	20
Trichlorofluoromethane	0.0250	ND	0.0268	0.0263	107	105	1	39.9-165			2.02	20
1,2,3-Trichloropropane	0.0250	ND	0.0266	0.0268	106	107	1	71.5-134			0.830	20
1,2,4-Trimethylbenzene	0.0250	ND	0.0259	0.0257	104	103	1	60.5-137			0.850	20
1,3,5-Trimethylbenzene	0.0250	ND	0.0255	0.0256	102	102	1	67.9-134			0.0200	20
Vinyl chloride	0.0250	ND	0.0222	0.0220	88.8	88.1	1	44.3-143			0.780	20
Xylenes, Total	0.0750	0.000765	0.0758	0.0746	100	98.4	1	65.6-133			1.71	20
(S) Toluene-d8					103	104		90.0-115				
(S) Dibromofluoromethane					99.9	99.7		79.0-121				
(S) a,a,a-Trifluorotoluene					104	105		90.4-116				
(S) 4-Bromofluorobenzene					107	106		80.1-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



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
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ 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 ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	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 ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	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 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} 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.**

