

Barry Sulkin

Sample Delivery Group: L845871
Samples Received: 07/08/2016
Project Number: CHESTERFIELD
Description: Chesterfield

Report To: LOGIN- USE P-KEY
4443 Pecan Valley Road
Nashville, TN 37218

Entire Report Reviewed By:



Linda Cashman
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.



1 SAMPLE BY BIRD HOUSE L845871-01 WW

Collected by
Barry Sulkin

Collected date/time
07/06/16 13:15

Received date/time
07/08/16 09:00

¹ Cp

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG887232	1	07/11/16 15:57	07/11/16 16:32	MMF
Mercury by Method 245.1	WG887195	1	07/09/16 07:11	07/11/16 10:39	TRB
Metals (ICP) by Method 200.7	WG887501	1	07/11/16 17:49	07/12/16 04:06	LTB
Metals (ICP) by Method 200.7	WG887501	1	07/11/16 17:49	07/13/16 08:32	LTB
Metals (ICP) by Method 200.7	WG887501	5	07/11/16 17:49	07/13/16 08:35	LTB
Metals (ICPMS) by Method 200.8	WG887494	1	07/12/16 08:05	07/18/16 17:27	VSS
Wet Chemistry by Method 300.0	WG887635	1	07/11/16 14:56	07/11/16 14:56	SAM
Wet Chemistry by Method 3500Cr C-2011	WG887341	1	07/12/16 14:34	07/12/16 14:34	MCG
Wet Chemistry by Method 353.2	WG888206	1	07/14/16 02:34	07/14/16 02:34	ASK
Wet Chemistry by Method 365.4	WG887373	1	07/11/16 17:45	07/11/16 23:42	ASK

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

2 SAMPLE 2 RED COVE L845871-02 WW

Collected by
Barry Sulkin

Collected date/time
07/06/16 14:15

Received date/time
07/08/16 09:00

⁷ Gl

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG887232	1	07/11/16 15:57	07/11/16 16:32	MMF
Mercury by Method 245.1	WG887195	1	07/09/16 07:11	07/11/16 10:42	TRB
Metals (ICP) by Method 200.7	WG887501	1	07/11/16 17:49	07/12/16 04:09	LTB
Metals (ICP) by Method 200.7	WG887501	5	07/11/16 17:49	07/13/16 08:58	LTB
Metals (ICPMS) by Method 200.8	WG887494	1	07/12/16 08:05	07/18/16 17:29	VSS
Metals (ICPMS) by Method 200.8	WG887494	5	07/12/16 08:05	07/18/16 18:43	VSS
Wet Chemistry by Method 300.0	WG887635	20	07/11/16 15:23	07/11/16 15:23	SAM
Wet Chemistry by Method 3500Cr C-2011	WG887341	1	07/12/16 14:43	07/12/16 14:43	MCG
Wet Chemistry by Method 353.2	WG888206	1	07/14/16 02:40	07/14/16 02:40	ASK
Wet Chemistry by Method 365.4	WG887373	1	07/11/16 17:45	07/11/16 23:43	ASK

⁸ Al

⁹ Sc

3 SAMPLE 3 OUTFALL 005 L845871-03 WW

Collected by
Barry Sulkin

Collected date/time
07/06/16 15:45

Received date/time
07/08/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG887232	1	07/11/16 15:57	07/11/16 16:32	MMF
Mercury by Method 245.1	WG887195	1	07/09/16 07:11	07/11/16 10:44	TRB
Metals (ICP) by Method 200.7	WG887501	1	07/11/16 17:49	07/12/16 03:42	LTB
Metals (ICP) by Method 200.7	WG887501	1	07/11/16 17:49	07/13/16 08:08	LTB
Metals (ICPMS) by Method 200.8	WG887494	1	07/12/16 08:05	07/18/16 17:31	VSS
Wet Chemistry by Method 300.0	WG887635	1	07/11/16 16:00	07/11/16 16:00	SAM
Wet Chemistry by Method 3500Cr C-2011	WG887341	1	07/12/16 14:51	07/12/16 14:51	MCG
Wet Chemistry by Method 353.2	WG888206	1	07/14/16 02:41	07/14/16 02:41	ASK
Wet Chemistry by Method 365.4	WG887970	1	07/12/16 14:58	07/14/16 01:13	ASK

4 SAMPLE 4 OSBORNE LANDING L845871-04 WW

Collected by
Barry Sulkin

Collected date/time
07/06/16 17:15

Received date/time
07/08/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG887232	1	07/11/16 15:57	07/11/16 16:32	MMF
Mercury by Method 245.1	WG887195	1	07/09/16 07:11	07/11/16 10:47	TRB
Metals (ICP) by Method 200.7	WG887501	1	07/11/16 17:49	07/12/16 04:12	LTB
Metals (ICP) by Method 200.7	WG887501	1	07/11/16 17:49	07/13/16 08:41	LTB
Metals (ICPMS) by Method 200.8	WG888248	1	07/14/16 09:55	07/19/16 01:44	ST
Wet Chemistry by Method 300.0	WG887635	1	07/11/16 19:20	07/11/16 19:20	SAM
Wet Chemistry by Method 3500Cr C-2011	WG887341	1	07/12/16 15:32	07/12/16 15:32	MCG
Wet Chemistry by Method 353.2	WG888206	1	07/14/16 02:42	07/14/16 02:42	ASK
Wet Chemistry by Method 365.4	WG887970	1	07/12/16 14:58	07/14/16 01:14	ASK

ACCOUNT:
Barry Sulkin

PROJECT:
CHESTERFIELD

SDG:
L845871

DATE/TIME:
07/21/16 13:49

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2 SAMPLE 2 RED COVE L845871-05 Solid

Collected by
Barry SulkinCollected date/time
07/06/16 14:15Received date/time
07/08/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG887241	1	07/09/16 07:27	07/12/16 10:22	TRB
Metals (ICP) by Method 6010B	WG887187	10	07/10/16 14:05	07/11/16 18:02	LTB
Metals (ICP) by Method 6010B	WG887187	5	07/10/16 14:05	07/11/16 15:01	RDS
Metals (ICPMS) by Method 6020	WG888466	5	07/13/16 15:26	07/19/16 21:35	JD
Metals (ICPMS) by Method 6020	WG888466	5	07/13/16 15:26	07/20/16 13:27	LAT
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG890438	1	07/19/16 17:41	07/20/16 06:41	KMP
Total Solids by Method 2540 G-2011	WG887258	1	07/09/16 11:44	07/09/16 11:56	KDW
Wet Chemistry by Method 3060A/7196A	WG887182	1	07/09/16 11:31	07/09/16 15:38	KK
Wet Chemistry by Method 9056A	WG887704	1	07/12/16 08:15	07/12/16 15:44	CM

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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.

Linda Cashman
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Collected date/time: 07/06/16 13:15

L845871

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	143		2.82	10.0	1	07/11/2016 16:32	WG887232

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	16.2		0.0519	1.00	1	07/11/2016 14:56	WG887635
Sulfate	39.3		0.0774	5.00	1	07/11/2016 14:56	WG887635

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.000150	0.000500	1	07/12/2016 14:34	WG887341

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.354		0.0197	0.100	1	07/14/2016 02:34	WG888206

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus, Total	0.526		0.0350	0.100	1	07/11/2016 23:42	WG887373

Mercury by Method 245.1

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0000490	0.000200	1	07/11/2016 10:39	WG887195

Metals (ICP) by Method 200.7

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Aluminum	8.09		0.0273	0.200	1	07/12/2016 04:06	WG887501
Boron	0.121	J	0.0159	0.200	1	07/12/2016 04:06	WG887501
Calcium	25.1		0.100	1.00	1	07/12/2016 04:06	WG887501
Iron	19.0		0.0282	0.100	1	07/12/2016 04:06	WG887501
Lithium	0.0130	J	0.00600	0.0150	1	07/12/2016 04:06	WG887501
Magnesium	6.21		0.0168	1.00	1	07/12/2016 04:06	WG887501
Silicon	13.0		0.143	1.00	5	07/13/2016 08:35	WG887501
Sodium	10.3		0.0939	1.00	1	07/12/2016 04:06	WG887501
Strontium	0.143		0.00150	0.0100	1	07/12/2016 04:06	WG887501
Sulfur	13.5		0.220	1.00	1	07/13/2016 08:32	WG887501

Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	U		0.000754	0.00200	1	07/18/2016 17:27	WG887494
Arsenic	0.00634		0.000170	0.00100	1	07/18/2016 17:27	WG887494
Barium	0.152		0.000550	0.00500	1	07/18/2016 17:27	WG887494
Beryllium	0.00110		0.000280	0.00100	1	07/18/2016 17:27	WG887494
Cadmium	0.000262	J	0.000220	0.00100	1	07/18/2016 17:27	WG887494
Chromium	0.0154		0.000320	0.00100	1	07/18/2016 17:27	WG887494
Cobalt	0.0103		0.000270	0.00200	1	07/18/2016 17:27	WG887494



Collected date/time: 07/06/16 13:15

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Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Copper	0.0237		0.000270	0.00100	1	07/18/2016 17:27	WG887494
Lead	0.0156		0.000260	0.00100	1	07/18/2016 17:27	WG887494
Manganese	0.597		0.000510	0.00500	1	07/18/2016 17:27	WG887494
Molybdenum	0.00162	U	0.000260	0.00500	1	07/18/2016 17:27	WG887494
Nickel	0.0140		0.000320	0.00100	1	07/18/2016 17:27	WG887494
Selenium	0.00134	U	0.000320	0.00200	1	07/18/2016 17:27	WG887494
Thallium	U		0.000280	0.00100	1	07/18/2016 17:27	WG887494
Vanadium	0.0366		0.000620	0.00500	1	07/18/2016 17:27	WG887494
Zinc	0.0947		0.00191	0.0100	1	07/18/2016 17:27	WG887494

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	1100		2.82	10.0	1	07/11/2016 16:32	WG887232

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Chloride	41.7		1.04	20.0	20	07/11/2016 15:23	WG887635
Sulfate	594		1.55	100	20	07/11/2016 15:23	WG887635

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Hexavalent Chromium	U		0.000150	0.000500	1	07/12/2016 14:43	WG887341

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.0200	J	0.0197	0.100	1	07/14/2016 02:40	WG888206

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus, Total	0.0836	J	0.0350	0.100	1	07/11/2016 23:43	WG887373

Mercury by Method 245.1

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Mercury	U		0.0000490	0.000200	1	07/11/2016 10:42	WG887195

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Aluminum	0.717		0.0273	0.200	1	07/12/2016 04:09	WG887501
Boron	1.99		0.0159	0.200	1	07/12/2016 04:09	WG887501
Calcium	217		0.100	1.00	1	07/12/2016 04:09	WG887501
Iron	66.1		0.0282	0.100	1	07/12/2016 04:09	WG887501
Lithium	0.220		0.00600	0.0150	1	07/12/2016 04:09	WG887501
Magnesium	42.3		0.0168	1.00	1	07/12/2016 04:09	WG887501
Silicon	8.47		0.0286	0.200	1	07/12/2016 04:09	WG887501
Sodium	23.1		0.0939	1.00	1	07/12/2016 04:09	WG887501
Strontium	5.73		0.00150	0.0100	1	07/12/2016 04:09	WG887501
Sulfur	179		1.10	5.00	5	07/13/2016 08:58	WG887501

Metals (ICPMS) by Method 200.8

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Antimony	U		0.000754	0.00200	1	07/18/2016 17:29	WG887494
Arsenic	0.0741		0.000170	0.00100	1	07/18/2016 17:29	WG887494
Barium	0.0549		0.000550	0.00500	1	07/18/2016 17:29	WG887494
Beryllium	U		0.000280	0.00100	1	07/18/2016 17:29	WG887494
Cadmium	U		0.000220	0.00100	1	07/18/2016 17:29	WG887494
Chromium	0.00148		0.000320	0.00100	1	07/18/2016 17:29	WG887494
Cobalt	0.0240		0.000270	0.00200	1	07/18/2016 17:29	WG887494



Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Copper	0.00303		0.000270	0.00100	1	07/18/2016 17:29	WG887494
Lead	0.00141		0.000260	0.00100	1	07/18/2016 17:29	WG887494
Manganese	6.57		0.00255	0.0250	5	07/18/2016 18:43	WG887494
Molybdenum	0.0431		0.000260	0.00500	1	07/18/2016 17:29	WG887494
Nickel	0.0537		0.000320	0.00100	1	07/18/2016 17:29	WG887494
Selenium	0.000418	L	0.000320	0.00200	1	07/18/2016 17:29	WG887494
Thallium	U		0.000280	0.00100	1	07/18/2016 17:29	WG887494
Vanadium	0.00416	L	0.000620	0.00500	1	07/18/2016 17:29	WG887494
Zinc	0.0108	B	0.00191	0.0100	1	07/18/2016 17:29	WG887494

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Collected date/time: 07/06/16 15:45

L845871

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Dissolved Solids	95.0		2.82	10.0	1	07/11/2016 16:32	WG887232

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Chloride	4.14		0.0519	1.00	1	07/11/2016 16:00	WG887635
Sulfate	14.3		0.0774	5.00	1	07/11/2016 16:00	WG887635

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Hexavalent Chromium	U		0.000150	0.000500	1	07/12/2016 14:51	WG887341

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Nitrate-Nitrite	0.0340	J	0.0197	0.100	1	07/14/2016 02:41	WG888206

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Phosphorus, Total	0.0762	J	0.0350	0.100	1	07/14/2016 01:13	WG887970

Mercury by Method 245.1

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Mercury	U		0.0000490	0.000200	1	07/11/2016 10:44	WG887195

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Aluminum	0.0921	J	0.0273	0.200	1	07/12/2016 03:42	WG887501
Boron	0.220		0.0159	0.200	1	07/12/2016 03:42	WG887501
Calcium	17.5		0.100	1.00	1	07/12/2016 03:42	WG887501
Iron	0.167		0.0282	0.100	1	07/12/2016 03:42	WG887501
Lithium	U		0.00600	0.0150	1	07/12/2016 03:42	WG887501
Magnesium	5.00		0.0168	1.00	1	07/12/2016 03:42	WG887501
Silicon	1.18		0.0286	0.200	1	07/12/2016 03:42	WG887501
Sodium	3.91		0.0939	1.00	1	07/12/2016 03:42	WG887501
Strontium	0.333		0.00150	0.0100	1	07/12/2016 03:42	WG887501
Sulfur	5.27		0.220	1.00	1	07/13/2016 08:08	WG887501

Metals (ICPMS) by Method 200.8

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Antimony	0.000851	J	0.000754	0.00200	1	07/18/2016 17:31	WG887494
Arsenic	0.0139		0.000170	0.00100	1	07/18/2016 17:31	WG887494
Barium	0.0710		0.000550	0.00500	1	07/18/2016 17:31	WG887494
Beryllium	U		0.000280	0.00100	1	07/18/2016 17:31	WG887494
Cadmium	U		0.000220	0.00100	1	07/18/2016 17:31	WG887494
Chromium	U		0.000320	0.00100	1	07/18/2016 17:31	WG887494
Cobalt	U		0.000270	0.00200	1	07/18/2016 17:31	WG887494



Collected date/time: 07/06/16 15:45

L845871

Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Copper	0.00171		0.000270	0.00100	1	07/18/2016 17:31	WG887494
Lead	U		0.000260	0.00100	1	07/18/2016 17:31	WG887494
Manganese	0.227		0.000510	0.00500	1	07/18/2016 17:31	WG887494
Molybdenum	0.00327	<u>L</u>	0.000260	0.00500	1	07/18/2016 17:31	WG887494
Nickel	0.000913	<u>L</u>	0.000320	0.00100	1	07/18/2016 17:31	WG887494
Selenium	0.00103	<u>L</u>	0.000320	0.00200	1	07/18/2016 17:31	WG887494
Thallium	U		0.000280	0.00100	1	07/18/2016 17:31	WG887494
Vanadium	0.00184	<u>L</u>	0.000620	0.00500	1	07/18/2016 17:31	WG887494
Zinc	0.00698	<u>B J</u>	0.00191	0.0100	1	07/18/2016 17:31	WG887494

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Collected date/time: 07/06/16 17:15

L845871

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	106		2.82	10.0	1	07/11/2016 16:32	WG887232

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	12.3		0.0519	1.00	1	07/11/2016 19:20	WG887635
Sulfate	12.9		0.0774	5.00	1	07/11/2016 19:20	WG887635

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.000150	0.000500	1	07/12/2016 15:32	WG887341

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	0.390		0.0197	0.100	1	07/14/2016 02:42	WG888206

Wet Chemistry by Method 365.4

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phosphorus, Total	0.0843	J	0.0350	0.100	1	07/14/2016 01:14	WG887970

Mercury by Method 245.1

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0000490	0.000200	1	07/11/2016 10:47	WG887195

Metals (ICP) by Method 200.7

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Aluminum	0.471		0.0273	0.200	1	07/12/2016 04:12	WG887501
Boron	0.0631	J	0.0159	0.200	1	07/12/2016 04:12	WG887501
Calcium	35.3		0.100	1.00	1	07/12/2016 04:12	WG887501
Iron	1.04		0.0282	0.100	1	07/12/2016 04:12	WG887501
Lithium	U		0.00600	0.0150	1	07/12/2016 04:12	WG887501
Magnesium	3.41		0.0168	1.00	1	07/12/2016 04:12	WG887501
Silicon	3.87		0.0286	0.200	1	07/12/2016 04:12	WG887501
Sodium	8.41		0.0939	1.00	1	07/12/2016 04:12	WG887501
Strontium	0.0799		0.00150	0.0100	1	07/12/2016 04:12	WG887501
Sulfur	6.71		0.220	1.00	1	07/13/2016 08:41	WG887501

Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	U		0.000754	0.00200	1	07/19/2016 01:44	WG888248
Arsenic	0.00107		0.000170	0.00100	1	07/19/2016 01:44	WG888248
Barium	0.0324		0.000550	0.00500	1	07/19/2016 01:44	WG888248
Beryllium	U		0.000280	0.00100	1	07/19/2016 01:44	WG888248
Cadmium	U		0.000220	0.00100	1	07/19/2016 01:44	WG888248
Chromium	0.00104	B	0.000320	0.00100	1	07/19/2016 01:44	WG888248
Cobalt	0.000523	J	0.000270	0.00200	1	07/19/2016 01:44	WG888248



Collected date/time: 07/06/16 17:15

L845871

Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Copper	0.00160		0.000270	0.00100	1	07/19/2016 01:44	WG888248
Lead	0.000878	U	0.000260	0.00100	1	07/19/2016 01:44	WG888248
Manganese	0.0808		0.000510	0.00500	1	07/19/2016 01:44	WG888248
Molybdenum	0.000565	U	0.000260	0.00500	1	07/19/2016 01:44	WG888248
Nickel	0.00169		0.000320	0.00100	1	07/19/2016 01:44	WG888248
Selenium	U		0.000320	0.00200	1	07/19/2016 01:44	WG888248
Thallium	U		0.000280	0.00100	1	07/19/2016 01:44	WG888248
Vanadium	0.00226	U	0.000620	0.00500	1	07/19/2016 01:44	WG888248
Zinc	0.540		0.00191	0.0100	1	07/19/2016 01:44	WG888248

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	54.6		1	07/09/2016 11:56	WG887258

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 3060A/7196A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		1.17	3.66	1	07/09/2016 15:38	WG887182

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	125		1.46	18.3	1	07/12/2016 15:44	WG887704
Nitrate-Nitrite	U		1.21	3.66	1	07/12/2016 15:44	WG887704
Sulfate	616		1.04	91.6	1	07/12/2016 15:44	WG887704
Phosphate as P	U		0.141	1.83	1	07/12/2016 15:44	WG887704

Mercury by Method 7471A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Mercury	0.0178	<u>J</u>	0.00513	0.0366	1	07/12/2016 10:22	WG887241

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Aluminum	6470		32.1	91.6	5	07/11/2016 15:01	WG887187
Boron	46.2	<u>B J</u>	11.5	91.6	5	07/11/2016 15:01	WG887187
Calcium	2120	<u>B</u>	42.5	916	5	07/11/2016 15:01	WG887187
Iron	178000		12.9	91.6	5	07/11/2016 15:01	WG887187
Lithium	7.21	<u>J</u>	4.85	45.8	5	07/11/2016 15:01	WG887187
Magnesium	806	<u>B J</u>	10.2	916	5	07/11/2016 15:01	WG887187
Silicon	11400		72.5	366	10	07/11/2016 18:02	WG887187
Sodium	U		90.1	916	5	07/11/2016 15:01	WG887187
Strontium	74.6	<u>B</u>	1.56	9.16	5	07/11/2016 15:01	WG887187
Sulfur	1740		202	916	5	07/11/2016 15:01	WG887187

Metals (ICPMS) by Method 6020

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Antimony	0.849	<u>J</u>	0.289	0.916	5	07/19/2016 21:35	WG888466
Arsenic	292		0.0229	0.916	5	07/19/2016 21:35	WG888466
Barium	39.8		0.293	1.83	5	07/19/2016 21:35	WG888466
Beryllium	0.527	<u>J</u>	0.110	0.916	5	07/19/2016 21:35	WG888466
Cadmium	0.290	<u>J</u>	0.147	0.916	5	07/19/2016 21:35	WG888466
Chromium	7.60		0.495	0.916	5	07/19/2016 21:35	WG888466
Cobalt	30.3		0.238	0.916	5	07/19/2016 21:35	WG888466
Copper	20.2		0.476	0.916	5	07/19/2016 21:35	WG888466
Lead	7.18		0.220	0.916	5	07/19/2016 21:35	WG888466
Manganese	586		0.229	1.83	5	07/19/2016 21:35	WG888466
Molybdenum	92.1		0.128	1.83	5	07/19/2016 21:35	WG888466
Nickel	60.2		0.321	0.916	5	07/20/2016 13:27	WG888466
Selenium	3.80		0.348	0.916	5	07/19/2016 21:35	WG888466
Thallium	0.352	<u>J</u>	0.174	0.916	5	07/19/2016 21:35	WG888466
Vanadium	29.6		0.165	1.83	5	07/19/2016 21:35	WG888466
Zinc	80.9		2.34	9.16	5	07/20/2016 13:27	WG888466



Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00110	0.0110	1	07/20/2016 06:41	WG890438
Acenaphthene	U		0.00110	0.0110	1	07/20/2016 06:41	WG890438
Acenaphthylene	U		0.00110	0.0110	1	07/20/2016 06:41	WG890438
Benzo(a)anthracene	0.00567	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
Benzo(a)pyrene	0.00594	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
Benzo(b)fluoranthene	0.00864	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
Benzo(g,h,i)perylene	0.00493	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
Benzo(k)fluoranthene	0.00220	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
Chrysene	0.00553	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
Dibenz(a,h)anthracene	0.00114	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
Fluoranthene	0.00817	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
Fluorene	U		0.00110	0.0110	1	07/20/2016 06:41	WG890438
Indeno(1,2,3-cd)pyrene	0.00388	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
Naphthalene	U		0.00366	0.0366	1	07/20/2016 06:41	WG890438
Phenanthrene	0.00217	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
Pyrene	0.00848	L	0.00110	0.0110	1	07/20/2016 06:41	WG890438
1-Methylnaphthalene	U		0.00366	0.0366	1	07/20/2016 06:41	WG890438
2-Methylnaphthalene	U		0.00366	0.0366	1	07/20/2016 06:41	WG890438
2-Chloronaphthalene	U		0.00366	0.0366	1	07/20/2016 06:41	WG890438
(S) p-Terphenyl-d14	66.4			32.2-131		07/20/2016 06:41	WG890438
(S) Nitrobenzene-d5	92.5			22.1-146		07/20/2016 06:41	WG890438
(S) 2-Fluorobiphenyl	86.8			40.6-122		07/20/2016 06:41	WG890438

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3149229-1 07/11/16 16:32

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		2.82	10.0

L845688-01 Original Sample (OS) • Duplicate (DUP)

(OS) L845688-01 07/11/16 16:32 • (DUP) R3149229-4 07/11/16 16:32

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	428	446	1	4.12		5

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

(LCS) R3149229-2 07/11/16 16:32 • (LCSD) R3149229-3 07/11/16 16:32

	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	%	%	%			%	%
Dissolved Solids	8800	8550	8980	97.2	102	85.0-115			4.91	5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3148633-1 07/09/16 11:56

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.000200			

L845863-02 Original Sample (OS) • Duplicate (DUP)

(OS) L845863-02 07/09/16 11:56 • (DUP) R3148633-3 07/09/16 11:56

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	88.0	88.2	1	0.180		5

Laboratory Control Sample (LCS)

(LCS) R3148633-2 07/09/16 11:56

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3148867-1 07/11/16 12:05

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Chloride	U		0.0519	1.00
Sulfate	U		0.0774	5.00

L845868-01 Original Sample (OS) • Duplicate (DUP)

(OS) L845868-01 07/11/16 14:29 • (DUP) R3148867-4 07/11/16 14:42

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	6.25	6.27	1	0		20
Sulfate	6.88	6.83	1	1		20

L845871-04 Original Sample (OS) • Duplicate (DUP)

(OS) L845871-04 07/11/16 19:20 • (DUP) R3148867-6 07/11/16 20:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	12.3	12.3	1	0		20
Sulfate	12.9	12.9	1	0		20

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

(LCS) R3148867-2 07/11/16 12:18 • (LCSD) R3148867-3 07/11/16 12:32

	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	%	%	%			%	%
Chloride	40.0	39.2	39.2	98	98	90-110			0	20
Sulfate	40.0	40.0	40.1	100	100	90-110			0	20

L845871-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L845871-01 07/11/16 14:56 • (MS) R3148867-5 07/11/16 15:09

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Chloride	50.0	16.2	65.1	98	1	80-120	
Sulfate	50.0	39.3	87.5	96	1	80-120	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Method Blank (MB)

(MB) R3148597-1 07/09/16 15:30

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

L845719-19 Original Sample (OS) • Duplicate (DUP)

(OS) L845719-19 07/09/16 15:33 • (DUP) R3148597-4 07/09/16 15:34

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

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

(LCS) R3148597-2 07/09/16 15:30 • (LCSD) R3148597-3 07/09/16 15:31

	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	%	%	%			%	%
Chromium,Hexavalent	56.9	63.8	63.0	112	111	80.0-120			1.00	20

L845719-19 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845719-19 07/09/16 15:33 • (MS) R3148597-5 07/09/16 15:34 • (MSD) R3148597-6 07/09/16 15:34

	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	%	%		%			%	%
Chromium,Hexavalent	20.0	U	18.6	19.8	93.0	99.0	1	75.0-125			6.00	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3149116-3 07/12/16 11:53

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Hexavalent Chromium	U		0.000150	0.000500

L845828-08 Original Sample (OS) • Duplicate (DUP)

(OS) L845828-08 07/12/16 12:14 • (DUP) R3149116-4 07/12/16 12:22

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Hexavalent Chromium	0.817	0.819	10	0.000		20

L845871-04 Original Sample (OS) • Duplicate (DUP)

(OS) L845871-04 07/12/16 15:32 • (DUP) R3149116-7 07/12/16 15:43

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

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

(LCS) R3149116-1 07/12/16 11:20 • (LCSD) R3149116-2 07/12/16 11:28

	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	%	%	%			%	%
Hexavalent Chromium	0.00200	0.00220	0.00200	110	100	90.0-110			10.0	20

L845829-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845829-02 07/12/16 14:02 • (MS) R3149116-5 07/12/16 14:10 • (MSD) R3149116-6 07/12/16 14:18

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Hexavalent Chromium	0.0500	ND	0.0513	0.0508	103	102	1	90.0-110			1.00	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3149569-1 07/14/16 02:26

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Nitrate-Nitrite	U		0.0197	0.100

L845871-01 Original Sample (OS) • Duplicate (DUP)

(OS) L845871-01 07/14/16 02:34 • (DUP) R3149569-4 07/14/16 02:39

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Nitrate-Nitrite	0.354	0.351	1	1.00		20

L845979-06 Original Sample (OS) • Duplicate (DUP)

(OS) L845979-06 07/14/16 02:55 • (DUP) R3149569-6 07/14/16 02:56

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Nitrate-Nitrite	0.596	0.593	1	1.00		20

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

(LCS) R3149569-2 07/14/16 02:27 • (LCSD) R3149569-3 07/14/16 02:28

	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	%	%	%			%	%
Nitrate-Nitrite	5.00	4.97	4.68	99.0	94.0	90.0-110			6.00	20

L845922-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L845922-01 07/14/16 02:44 • (MS) R3149569-5 07/14/16 02:45

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Nitrate-Nitrite	5.00	0.262	4.48	84.0	1	90.0-110	J6

L846129-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846129-01 07/14/16 03:05 • (MS) R3149569-7 07/14/16 03:06 • (MSD) R3149569-8 07/14/16 03:07

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Nitrate-Nitrite	5.00	0.109	5.29	4.71	104	92.0	1	90.0-110			12.0	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3148944-2 07/11/16 23:06

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Phosphorus,Total	U		0.0350	0.100

L845613-01 Original Sample (OS) • Duplicate (DUP)

(OS) L845613-01 07/11/16 23:11 • (DUP) R3148944-5 07/11/16 23:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Phosphorus,Total	2.10	2.36	1	12.0		20

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

(LCS) R3148944-3 07/11/16 23:08 • (LCSD) R3148944-4 07/11/16 23:09

	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	%	%	%			%	%
Phosphorus,Total	1.00	1.07	1.08	107	108	90.0-110			1.00	20

L845803-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845803-01 07/11/16 23:25 • (MS) R3148944-6 07/11/16 23:27 • (MSD) R3148944-7 07/11/16 23:28

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Phosphorus,Total	2.50	0.714	3.32	3.20	104	99.0	1	90.0-110			4.00	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3149563-1 07/14/16 01:07

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Phosphorus,Total	U		0.0350	0.100

L845971-01 Original Sample (OS) • Duplicate (DUP)

(OS) L845971-01 07/14/16 01:19 • (DUP) R3149563-6 07/14/16 01:23

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Phosphorus,Total	2.79	2.65	1	5.00		20

L846319-02 Original Sample (OS) • Duplicate (DUP)

(OS) L846319-02 07/14/16 01:38 • (DUP) R3149563-7 07/14/16 01:39

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Phosphorus,Total	3.10	2.93	1	6.00		20

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

(LCS) R3149563-2 07/14/16 01:09 • (LCSD) R3149563-3 07/14/16 01:10

	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	%	%	%			%	%
Phosphorus,Total	1.00	0.908	0.918	91.0	92.0	90.0-110			1.00	20

L845915-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845915-01 07/14/16 01:15 • (MS) R3149563-4 07/14/16 01:16 • (MSD) R3149563-5 07/14/16 01:18

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Phosphorus,Total	2.50	0.673	3.05	2.94	95.0	91.0	1	90.0-110			4.00	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3149143-1 07/12/16 09:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		0.795	10.0
Nitrate-Nitrite	U		0.667	2.00
Sulfate	U		0.57	50.0
Phosphate as P	U		0.0769	1.00

L845098-01 Original Sample (OS) • Duplicate (DUP)

(OS) L845098-01 07/12/16 12:40 • (DUP) R3149143-4 07/12/16 13:03

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	37.0	85.3	1	79	J3	15
Sulfate	120	121	1	1		15
Phosphate as P	29.6	29.9	1	1		15

L846195-04 Original Sample (OS) • Duplicate (DUP)

(OS) L846195-04 07/12/16 21:28 • (DUP) R3149143-8 07/12/16 21:51

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	63.5	62.1	1	2		15
Sulfate	5.20	4.97	1	5	J	15
Phosphate as P	U	0	1	0		15

L846195-02 Original Sample (OS) • Duplicate (DUP)

(OS) L846195-02 07/13/16 10:06 • (DUP) R3149143-9 07/13/16 10:29

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	79.4	79.4	1	0		15

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

(LCS) R3149143-2 07/12/16 09:53 • (LCSD) R3149143-3 07/12/16 10:17

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 %
Chloride	200	200	200	100	100	80-120			0	15
Nitrate-Nitrite	40.0	40.1	40.3	100	101	80-120			0	15

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



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

(LCS) R3149143-2 07/12/16 09:53 • (LCSD) R3149143-3 07/12/16 10:17

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 %
Sulfate	200	197	197	99	98	80-120			0	15
Phosphate as P	20.0	18.9	19.1	94	96	80-120			1	15

L846195-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846195-03 07/12/16 18:47 • (MS) R3149143-6 07/12/16 19:10 • (MSD) R3149143-7 07/12/16 19:33

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	616	86.1	719	662	103	93	1	80-120			8	15
Nitrate-Nitrite	123	1.43	131	131	105	105	1	80-120			0	15
Sulfate	616	25.6	646	645	101	101	1	80-120			0	15
Phosphate as P	61.6	U	43.8	45.2	71	73	1	80-120	J6	J6	3	15

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3148774-1 07/11/16 10:14

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Mercury	U		0.000049	0.000200

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

(LCS) R3148774-2 07/11/16 10:16 • (LCSD) R3148774-3 07/11/16 10:19

	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	%	%	%			%	%
Mercury	0.00300	0.00317	0.00315	106	105	85-115			1	20

L845901-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845901-01 07/11/16 10:21 • (MS) R3148774-4 07/11/16 10:24 • (MSD) R3148774-5 07/11/16 10:27

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Mercury	0.00300	ND	0.00333	0.00324	111	108	1	70-130			3	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3149037-1 07/12/16 09:11

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0028	0.0200

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

(LCS) R3149037-2 07/12/16 09:14 • (LCSD) R3149037-3 07/12/16 09:17

	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	%	%	%			%	%
Mercury	0.300	0.273	0.257	91	86	80-120			6	20

L845706-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845706-10 07/12/16 09:20 • (MS) R3149037-4 07/12/16 09:23 • (MSD) R3149037-5 07/12/16 09:32

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.347	0.0147	0.352	0.344	97	95	1	75-125			2	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3148956-1 07/12/16 03:34

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Aluminum	U		0.0273	0.200
Boron	U		0.0159	0.200
Calcium	U		0.1	1.00
Iron	U		0.0282	0.100
Lithium	U		0.006	0.0150
Magnesium	U		0.0168	1.00
Silicon	U		0.0286	0.200
Sodium	U		0.0939	1.00
Strontium	U		0.0015	0.0100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3149302-1 07/13/16 08:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sulfur	U		0.22	1.00

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

(LCS) R3148956-2 07/12/16 03:37 • (LCSD) R3148956-3 07/12/16 03:39

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 %
Aluminum	10.0	10.4	10.4	104	104	85-115			0	20
Boron	1.00	1.05	1.05	105	105	85-115			0	20
Calcium	10.0	10.3	10.2	103	102	85-115			1	20
Iron	10.0	10.2	10.1	102	101	85-115			1	20
Lithium	1.00	1.06	1.06	106	106	85-115			1	20
Magnesium	10.0	10.2	10.1	102	101	85-115			1	20
Silicon	1.00	0.976	0.978	98	98	85-115			0	20
Sodium	10.0	10.2	10.1	102	101	85-115			1	20
Strontium	1.00	1.03	1.03	103	103	85-115			0	20

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

(LCS) R3149302-2 07/13/16 08:03 • (LCSD) R3149302-3 07/13/16 08:05

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 %
Sulfur	10.0	10.5	10.5	105	105	85-115			0	20



L845871-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845871-03 07/12/16 03:42 • (MS) R3148956-5 07/12/16 03:47 • (MSD) R3148956-6 07/12/16 03:50

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 %
Aluminum	10.0	0.0921	10.4	10.3	103	102	1	70-130			1	20
Boron	1.00	0.220	1.26	1.24	104	102	1	70-130			2	20
Calcium	10.0	17.5	28.8	28.6	113	111	1	70-130			1	20
Iron	10.0	0.167	10.3	10.1	101	99	1	70-130			2	20
Lithium	1.00	U	1.08	1.06	108	106	1	70-130			2	20
Magnesium	10.0	5.00	15.0	14.7	100	97	1	70-130			2	20
Silicon	1.00	1.18	2.15	2.13	97	94	1	70-130			1	20
Sodium	10.0	3.91	14.1	13.9	102	100	1	70-130			1	20
Strontium	1.00	0.333	1.35	1.33	101	100	1	70-130			1	20

L846018-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846018-02 07/12/16 03:53 • (MS) R3148956-7 07/12/16 03:55 • (MSD) R3148956-8 07/12/16 03:58

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 %
Aluminum	10.0	ND	10.4	10.4	103	103	1	70-130			0	20
Boron	1.00	0.502	1.54	1.53	104	103	1	70-130			0	20
Calcium	10.0	116	124	124	82	74	1	70-130			1	20
Iron	10.0	0.172	10.1	10.0	99	99	1	70-130			1	20
Lithium	1.00	0.0192	1.17	1.16	115	114	1	70-130			1	20
Magnesium	10.0	32.8	42.4	42.1	95	92	1	70-130			1	20
Silicon	1.00	3.92	4.74	4.80	82	88	1	70-130			1	20
Sodium	10.0	150	157	157	71	63	1	70-130		V	0	20
Strontium	1.00	0.533	1.54	1.53	100	99	1	70-130			1	20

L845871-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845871-03 07/13/16 08:08 • (MS) R3149302-5 07/13/16 08:13 • (MSD) R3149302-6 07/13/16 08:16

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 %
Sulfur	10.0	5.27	15.9	15.5	106	103	1	70-130			2	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3148791-1 07/11/16 08:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Aluminum	28.6		3.5	10.0
Boron	4.13	⬇	1.26	10.0
Calcium	76.2	⬇	4.63	100
Iron	2.15	⬇	1.41	10.0
Lithium	U		0.53	5.00
Magnesium	9.96	⬇	1.11	100
Silicon	U		3.96	20.0
Sodium	15.5	⬇	9.85	100
Strontium	1.89		0.17	1.00
Sulfur	U		22	100

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3148791-2 07/11/16 08:38 • (LCSD) R3148791-3 07/11/16 08:41

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 %
Aluminum	1000	991	938	99	94	80-120			6	20
Boron	100	102	94.9	102	95	80-120			7	20
Calcium	1000	1010	929	101	93	80-120			8	20
Iron	1000	976	929	98	93	80-120			5	20
Lithium	100	97.0	91.9	97	92	80-120			5	20
Magnesium	1000	967	916	97	92	80-120			5	20
Silicon	100	100	95.9	100	96	80-120			4	20
Sodium	1000	980	927	98	93	80-120			6	20
Strontium	100	99.7	93.9	100	94	80-120			6	20
Sulfur	1000	946	899	95	90	80-120			5	20

L845845-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845845-02 07/11/16 08:44 • (MS) R3148791-6 07/11/16 08:51 • (MSD) R3148791-7 07/11/16 08:53

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum	1120	18500	20000	20100	136	149	1	75-125	⬇	⬇	1	20
Boron	112	ND	106	108	93	95	1	75-125			2	20
Calcium	1120	2010	3230	3190	108	104	1	75-125			1	20
Iron	1120	18300	19400	18900	94	52	1	75-125		⬇	2	20
Lithium	112	7.91	115	117	95	97	1	75-125			2	20
Magnesium	1120	3890	4920	4780	92	79	1	75-125			3	20



L845845-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845845-02 07/11/16 08:44 • (MS) R3148791-6 07/11/16 08:51 • (MSD) R3148791-7 07/11/16 08:53

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Silicon	112	6000	4490	4210	0	0	1	75-125	EV	EV	7	20
Sodium	1120	188	1180	1190	89	89	1	75-125			1	20
Strontium	112	17.5	126	128	97	98	1	75-125			1	20
Sulfur	1120	444	1500	1520	94	95	1	75-125			1	20

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3149499-1 07/13/16 14:40

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.00017	0.00100
Barium	U		0.00055	0.00500
Beryllium	U		0.00028	0.00100
Cadmium	U		0.00022	0.00100
Chromium	U		0.00032	0.00100
Cobalt	U		0.00027	0.00200
Copper	U		0.00027	0.00100
Lead	U		0.00026	0.00100
Manganese	0.000754	U	0.00051	0.00500
Molybdenum	U		0.00026	0.00500
Nickel	U		0.00032	0.00100
Selenium	U		0.00032	0.00200
Thallium	U		0.00028	0.00100
Vanadium	U		0.00062	0.00500
Zinc	0.00272	U	0.00191	0.0100

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3150458-1 07/18/16 16:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony	U		0.000754	0.00200

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

(LCS) R3149499-2 07/13/16 14:45 • (LCSD) R3149499-3 07/13/16 14:50

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	0.0500	0.0535	0.0514	107	103	85-115			4	20
Barium	0.0500	0.0497	0.0480	99	96	85-115			3	20
Beryllium	0.0500	0.0508	0.0513	102	103	85-115			1	20
Cadmium	0.0500	0.0502	0.0503	100	101	85-115			0	20
Chromium	0.0500	0.0498	0.0509	100	102	85-115			2	20
Cobalt	0.0500	0.0511	0.0518	102	104	85-115			1	20
Copper	0.0500	0.0513	0.0521	103	104	85-115			1	20
Lead	0.0500	0.0527	0.0508	105	102	85-115			4	20
Manganese	0.0500	0.0488	0.0535	98	107	85-115			9	20
Molybdenum	0.0500	0.0514	0.0505	103	101	85-115			2	20
Nickel	0.0500	0.0526	0.0509	105	102	85-115			3	20



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

(LCS) R3149499-2 07/13/16 14:45 • (LCSD) R3149499-3 07/13/16 14:50

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 %
Selenium	0.0500	0.0487	0.0497	97	99	85-115			2	20
Thallium	0.0500	0.0503	0.0507	101	101	85-115			1	20
Vanadium	0.0500	0.0490	0.0496	98	99	85-115			1	20
Zinc	0.0500	0.0521	0.0519	104	104	85-115			0	20

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

(LCS) R3150458-2 07/18/16 16:10 • (LCSD) R3150458-3 07/18/16 16:12

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 %
Antimony	0.0579	0.0613	0.0617	106	107	85-115			1	20

L845419-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845419-01 07/13/16 14:55 • (MS) R3149499-5 07/13/16 15:04 • (MSD) R3149499-6 07/13/16 15:09

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 %
Arsenic	0.0500	0.00271	0.0585	0.0581	112	111	1	70-130			1	20
Barium	0.0500	0.0543	0.108	0.105	108	102	1	70-130			3	20
Beryllium	0.0500	ND	0.0514	0.0524	103	105	1	70-130			2	20
Cadmium	0.0500	ND	0.0522	0.0513	103	102	1	70-130			2	20
Chromium	0.0500	ND	0.0517	0.0519	102	102	1	70-130			0	20
Cobalt	0.0500	ND	0.0520	0.0526	103	105	1	70-130			1	20
Copper	0.0500	0.125	0.169	0.168	88	87	1	70-130			1	20
Lead	0.0500	0.00106	0.0523	0.0520	103	102	1	70-130			1	20
Manganese	0.0500	0.152	0.191	0.186	78	69	1	70-130		J6	2	20
Molybdenum	0.0500	ND	0.0538	0.0541	108	108	1	70-130			1	20
Nickel	0.0500	0.00183	0.0554	0.0544	107	105	1	70-130			2	20
Selenium	0.0500	ND	0.0522	0.0500	103	98	1	70-130			4	20
Thallium	0.0500	ND	0.0510	0.0513	101	102	1	70-130			1	20
Vanadium	0.0500	ND	0.0539	0.0543	102	102	1	70-130			1	20
Zinc	0.0500	0.220	0.255	0.250	70	60	1	70-130		V	2	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L845871-01,02,03

L846100-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846100-01 07/13/16 15:33 • (MS) R3149499-7 07/13/16 15:38 • (MSD) R3149499-8 07/13/16 15:43

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 %
Arsenic	0.0500	0.00170	0.0545	0.0542	106	105	1	70-130			0	20
Barium	0.0500	0.0661	0.119	0.114	105	96	1	70-130			4	20
Cadmium	0.0500	U	0.0502	0.0501	100	100	1	70-130			0	20
Chromium	0.0500	U	0.0503	0.0496	101	99	1	70-130			1	20
Cobalt	0.0500	U	0.0492	0.0503	98	101	1	70-130			2	20
Copper	0.0500	0.000982	0.0494	0.0493	97	97	1	70-130			0	20
Manganese	0.0500	0.206	0.245	0.243	77	73	1	70-130			1	20
Molybdenum	0.0500	0.0389	0.0924	0.0897	107	102	1	70-130			3	20
Nickel	0.0500	0.00101	0.0522	0.0514	102	101	1	70-130			1	20
Selenium	0.0500	0.00248	0.0524	0.0532	100	101	1	70-130			1	20
Vanadium	0.0500	0.0124	0.0613	0.0629	98	101	1	70-130			3	20
Zinc	0.0500	0.0102	0.0572	0.0590	94	97	1	70-130			3	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3150497-1 07/19/16 01:24

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony	U		0.000754	0.00200
Arsenic	U		0.00017	0.00100
Barium	U		0.00055	0.00500
Beryllium	U		0.00028	0.00100
Cadmium	U		0.00022	0.00100
Chromium	0.000397	J	0.00032	0.00100
Cobalt	U		0.00027	0.00200
Copper	U		0.00027	0.00100
Lead	U		0.00026	0.00100
Manganese	U		0.00051	0.00500
Molybdenum	U		0.00026	0.00500
Nickel	U		0.00032	0.00100
Selenium	U		0.00032	0.00200
Thallium	U		0.00028	0.00100
Vanadium	U		0.00062	0.00500
Zinc	0.00193	J	0.00191	0.0100

1

Cp

2

Tc

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Ss

4

Cn

5

Sr

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Qc

7

Gl

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Al

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Sc

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

(LCS) R3150497-2 07/19/16 01:26 • (LCSD) R3150497-3 07/19/16 01:29

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 %
Antimony	0.0579	0.0616	0.0615	106	106	85-115			0	20
Arsenic	0.0500	0.0498	0.0460	100	92	85-115			8	20
Barium	0.0500	0.0493	0.0487	99	97	85-115			1	20
Beryllium	0.0500	0.0483	0.0477	97	95	85-115			1	20
Cadmium	0.0500	0.0506	0.0471	101	94	85-115			7	20
Chromium	0.0500	0.0503	0.0488	101	98	85-115			3	20
Cobalt	0.0500	0.0501	0.0507	100	101	85-115			1	20
Copper	0.0500	0.0513	0.0509	103	102	85-115			1	20
Lead	0.0500	0.0506	0.0487	101	97	85-115			4	20
Manganese	0.0500	0.0498	0.0488	100	98	85-115			2	20
Molybdenum	0.0500	0.0504	0.0509	101	102	85-115			1	20
Nickel	0.0500	0.0506	0.0516	101	103	85-115			2	20
Selenium	0.0500	0.0476	0.0488	95	98	85-115			3	20
Thallium	0.0500	0.0494	0.0488	99	98	85-115			1	20
Vanadium	0.0500	0.0489	0.0490	98	98	85-115			0	20
Zinc	0.0500	0.0525	0.0509	105	102	85-115			3	20



L845901-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L845901-01 07/19/16 01:31 • (MS) R3150497-5 07/19/16 01:35 • (MSD) R3150497-6 07/19/16 01:37

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 %
Antimony	0.0579	ND	0.0640	0.0657	111	113	1	70-130			3	20
Arsenic	0.0500	0.00562	0.0573	0.0577	103	104	1	70-130			1	20
Barium	0.0500	ND	0.0552	0.0537	107	104	1	70-130			3	20
Beryllium	0.0500	ND	0.0508	0.0496	102	99	1	70-130			2	20
Cadmium	0.0500	ND	0.0508	0.0507	102	101	1	70-130			0	20
Chromium	0.0500	0.00208	0.0510	0.0498	98	95	1	70-130			3	20
Cobalt	0.0500	ND	0.0491	0.0491	98	98	1	70-130			0	20
Copper	0.0500	0.0127	0.0606	0.0607	96	96	1	70-130			0	20
Lead	0.0500	ND	0.0506	0.0507	101	101	1	70-130			0	20
Manganese	0.0500	0.0897	0.135	0.138	90	96	1	70-130			2	20
Molybdenum	0.0500	0.0137	0.0673	0.0675	107	108	1	70-130			0	20
Nickel	0.0500	0.0223	0.0707	0.0699	97	95	1	70-130			1	20
Selenium	0.0500	ND	0.0517	0.0495	103	99	1	70-130			4	20
Thallium	0.0500	ND	0.0502	0.0499	100	100	1	70-130			1	20
Vanadium	0.0500	0.0692	0.115	0.116	91	93	1	70-130			1	20
Zinc	0.0500	0.0785	0.122	0.125	87	93	1	70-130			2	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L846334-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846334-02 07/19/16 02:11 • (MS) R3150497-7 07/19/16 02:13 • (MSD) R3150497-8 07/19/16 02:15

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 %
Antimony	0.0579	U	0.0640	0.0632	111	109	1	70-130			1	20
Arsenic	0.0500	0.000728	0.0508	0.0522	100	103	1	70-130			3	20
Barium	0.0500	0.0322	0.0847	0.0823	105	100	1	70-130			3	20
Beryllium	0.0500	U	0.0534	0.0544	107	109	1	70-130			2	20
Cadmium	0.0500	U	0.0496	0.0494	99	99	1	70-130			0	20
Chromium	0.0500	0.000434	0.0489	0.0475	97	94	1	70-130			3	20
Cobalt	0.0500	U	0.0485	0.0480	97	96	1	70-130			1	20
Copper	0.0500	0.000554	0.0492	0.0485	97	96	1	70-130			1	20
Lead	0.0500	U	0.0497	0.0495	99	99	1	70-130			1	20
Manganese	0.0500	0.00230	0.0514	0.0494	98	94	1	70-130			4	20
Molybdenum	0.0500	0.00122	0.0548	0.0538	107	105	1	70-130			2	20
Nickel	0.0500	U	0.0486	0.0479	97	96	1	70-130			1	20
Selenium	0.0500	0.00375	0.0520	0.0538	97	100	1	70-130			3	20
Thallium	0.0500	U	0.0503	0.0501	101	100	1	70-130			0	20
Vanadium	0.0500	U	0.0490	0.0490	98	98	1	70-130			0	20
Zinc	0.0500	0.00351	0.0516	0.0489	96	91	1	70-130			5	20



Method Blank (MB)

(MB) R3150771-1 07/19/16 20:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Antimony	U		0.158	0.500
Arsenic	U		0.0125	0.500
Barium	U		0.16	1.00
Beryllium	U		0.06	0.500
Cadmium	U		0.08	0.500
Chromium	U		0.27	0.500
Cobalt	U		0.13	0.500
Copper	U		0.26	0.500
Lead	U		0.12	0.500
Manganese	0.294	J	0.125	1.00
Molybdenum	U		0.07	1.00
Selenium	U		0.19	0.500
Thallium	U		0.095	0.500
Vanadium	U		0.09	1.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3150988-1 07/20/16 13:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Nickel	U		0.175	0.500
Zinc	U		1.28	5.00

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

(LCS) R3150771-2 07/19/16 21:00 • (LCSD) R3150771-3 07/19/16 21:02

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 %
Antimony	116	113	115	97	99	80-120			2	20
Arsenic	100	95.2	94.6	95	95	80-120			1	20
Barium	100	97.3	102	97	102	80-120			5	20
Beryllium	100	99.0	103	99	103	80-120			4	20
Cadmium	100	96.5	97.0	97	97	80-120			0	20
Chromium	100	96.2	101	96	101	80-120			4	20
Cobalt	100	98.4	103	98	103	80-120			4	20
Copper	100	99.0	106	99	106	80-120			7	20
Lead	100	97.5	102	97	102	80-120			5	20
Manganese	100	94.2	96.8	94	97	80-120			3	20
Molybdenum	100	94.4	97.3	94	97	80-120			3	20



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

(LCS) R3150771-2 07/19/16 21:00 • (LCSD) R3150771-3 07/19/16 21:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Selenium	100	92.4	94.3	92	94	80-120			2	20
Thallium	100	96.5	101	97	101	80-120			5	20
Vanadium	100	96.1	98.5	96	98	80-120			2	20

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

(LCS) R3150988-2 07/20/16 13:12 • (LCSD) R3150988-3 07/20/16 13:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Nickel	100	99.3	102	99	102	80-120			3	20
Zinc	100	96.7	101	97	101	80-120			4	20

L846635-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846635-12 07/19/16 21:04 • (MS) R3150771-6 07/19/16 21:11 • (MSD) R3150771-7 07/19/16 21:13

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Antimony	26.3	0.195	113	113	86	86	5	75-125			0	20
Arsenic	22.6	0.584	99.6	105	87	92	5	75-125			5	20
Barium	22.6	17.1	127	128	97	98	5	75-125			0	20
Beryllium	22.6	0.184	109	118	96	104	5	75-125			8	20
Cadmium	22.6	0.105	104	109	92	96	5	75-125			5	20
Chromium	22.6	8.69	119	121	97	99	5	75-125			2	20
Cobalt	22.6	2.78	117	118	100	101	5	75-125			1	20
Copper	22.6	3.89	118	119	101	102	5	75-125			1	20
Lead	22.6	10.2	124	132	101	108	5	75-125			6	20
Manganese	22.6	76.7	187	183	98	94	5	75-125			2	20
Molybdenum	22.6	0.132	104	104	92	92	5	75-125			0	20
Selenium	22.6	0.312	100	116	88	102	5	75-125			14	20
Thallium	22.6	U	109	118	97	104	5	75-125			8	20
Vanadium	22.6	14.2	122	125	95	98	5	75-125			2	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L846635-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L846635-12 07/20/16 13:16 • (MS) R3150988-6 07/20/16 13:22 • (MSD) R3150988-7 07/20/16 13:24

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nickel	22.6	4.01	118	122	101	104	5	75-125			3	20
Zinc	22.6	26.1	138	142	99	102	5	75-125			3	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3150938-3 07/20/16 02:30

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.000600	0.00600
Acenaphthene	U		0.000600	0.00600
Acenaphthylene	U		0.000600	0.00600
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(g,h,i)perylene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Fluoranthene	U		0.000600	0.00600
Fluorene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
Phenanthrene	U		0.000600	0.00600
Pyrene	U		0.000600	0.00600
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
2-Chloronaphthalene	U		0.00200	0.0200
(S) p-Terphenyl-d14	101			32.2-131
(S) Nitrobenzene-d5	103			22.1-146
(S) 2-Fluorobiphenyl	98.1			40.6-122

1

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

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

(LCS) R3150938-1 07/20/16 01:48 • (LCSD) R3150938-2 07/20/16 02:09

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 %
Anthracene	0.0800	0.0847	0.0813	106	102	50.3-130			4.18	20
Acenaphthene	0.0800	0.0816	0.0799	102	99.8	52.4-120			2.13	20
Acenaphthylene	0.0800	0.0808	0.0792	101	99.1	49.6-120			1.91	20
Benzo(a)anthracene	0.0800	0.0911	0.0859	114	107	46.7-125			5.86	20
Benzo(a)pyrene	0.0800	0.0860	0.0833	107	104	42.3-119			3.18	20
Benzo(b)fluoranthene	0.0800	0.0909	0.0890	114	111	43.6-124			2.10	20
Benzo(g,h,i)perylene	0.0800	0.0887	0.0844	111	105	45.1-132			5.04	20
Benzo(k)fluoranthene	0.0800	0.0863	0.0815	108	102	46.1-131			5.70	20
Chrysene	0.0800	0.0873	0.0824	109	103	49.5-131			5.82	20
Dibenz(a,h)anthracene	0.0800	0.0886	0.0839	111	105	44.8-133			5.45	20
Fluoranthene	0.0800	0.0796	0.0776	99.5	97.0	49.3-128			2.63	20

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

(LCS) R3150938-1 07/20/16 01:48 • (LCSD) R3150938-2 07/20/16 02:09

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 %
Fluorene	0.0800	0.0780	0.0752	97.5	94.0	50.6-121			3.70	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0886	0.0847	111	106	46.1-135			4.43	20
Naphthalene	0.0800	0.0763	0.0769	95.4	96.1	49.6-115			0.700	20
Phenanthrene	0.0800	0.0852	0.0811	107	101	48.8-121			5.00	20
Pyrene	0.0800	0.0882	0.0856	110	107	44.7-130			2.95	20
1-Methylnaphthalene	0.0800	0.0840	0.0849	105	106	50.6-122			1.09	20
2-Methylnaphthalene	0.0800	0.0824	0.0875	103	109	50.4-120			5.96	20
2-Chloronaphthalene	0.0800	0.0808	0.0786	101	98.3	53.9-121			2.72	20
(S) p-Terphenyl-d14				85.6	83.6	32.2-131				
(S) Nitrobenzene-d5				98.7	105	22.1-146				
(S) 2-Fluorobiphenyl				100	98.7	40.6-122				

L847806-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L847806-01 07/20/16 05:38 • (MS) R3150938-4 07/20/16 05:59 • (MSD) R3150938-5 07/20/16 06:20

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0941	U	0.0925	0.0855	98.3	90.8	1	26.5-141			7.88	21.2
Acenaphthene	0.0941	0.00324	0.0922	0.0861	94.5	88.0	1	31.9-130			6.88	20
Acenaphthylene	0.0941	0.00247	0.0919	0.0855	95.1	88.3	1	33.7-129			7.21	20
Benzo(a)anthracene	0.0941	0.000873	0.0948	0.0893	99.8	93.9	1	18.3-136			6.04	24.6
Benzo(a)pyrene	0.0941	U	0.0986	0.0940	105	99.9	1	16.9-135			4.77	25.2
Benzo(b)fluoranthene	0.0941	U	0.0959	0.0829	102	88.1	1	10.0-134			14.5	30.9
Benzo(g,h,i)perylene	0.0941	U	0.0924	0.105	98.2	112	1	14.1-140			13.1	25.5
Benzo(k)fluoranthene	0.0941	U	0.0835	0.0875	88.7	93.0	1	18.2-138			4.69	25.6
Chrysene	0.0941	U	0.0909	0.0856	96.6	91.0	1	17.1-145			5.95	24.2
Dibenz(a,h)anthracene	0.0941	U	0.0917	0.105	97.5	112	1	18.5-138			13.7	24.3
Fluoranthene	0.0941	0.00108	0.101	0.0806	107	84.5	1	15.4-144			22.8	27.1
Fluorene	0.0941	0.00166	0.0874	0.0949	91.1	99.0	1	23.5-136			8.21	20
Indeno(1,2,3-cd)pyrene	0.0941	U	0.0919	0.105	97.6	111	1	14.5-142			13.3	25.8
Naphthalene	0.0941	1.17	1.33	0.922	173	0.000	1	29.2-128	V	J3 V	36.2	20
Phenanthrene	0.0941	0.00164	0.0940	0.0867	98.2	90.4	1	20.1-134			8.13	23.6
Pyrene	0.0941	0.00118	0.111	0.103	117	108	1	11.0-148			8.06	26.1
1-Methylnaphthalene	0.0941	0.352	0.462	0.338	117	0.000	1	28.4-137		J3 J6	31.1	20
2-Methylnaphthalene	0.0941	0.850	0.971	0.677	129	0.000	1	26.6-137		J3 V	35.7	20
2-Chloronaphthalene	0.0941	U	0.0891	0.0828	94.7	87.9	1	38.6-126			7.38	20
(S) p-Terphenyl-d14					93.8	89.5		32.2-131				
(S) Nitrobenzene-d5					187	160		22.1-146	J1	J1		
(S) 2-Fluorobiphenyl					99.1	93.4		40.6-122				

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	Not detected at the Reporting Limit (or MDL where applicable).
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.

Qualifier Description

B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
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.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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		

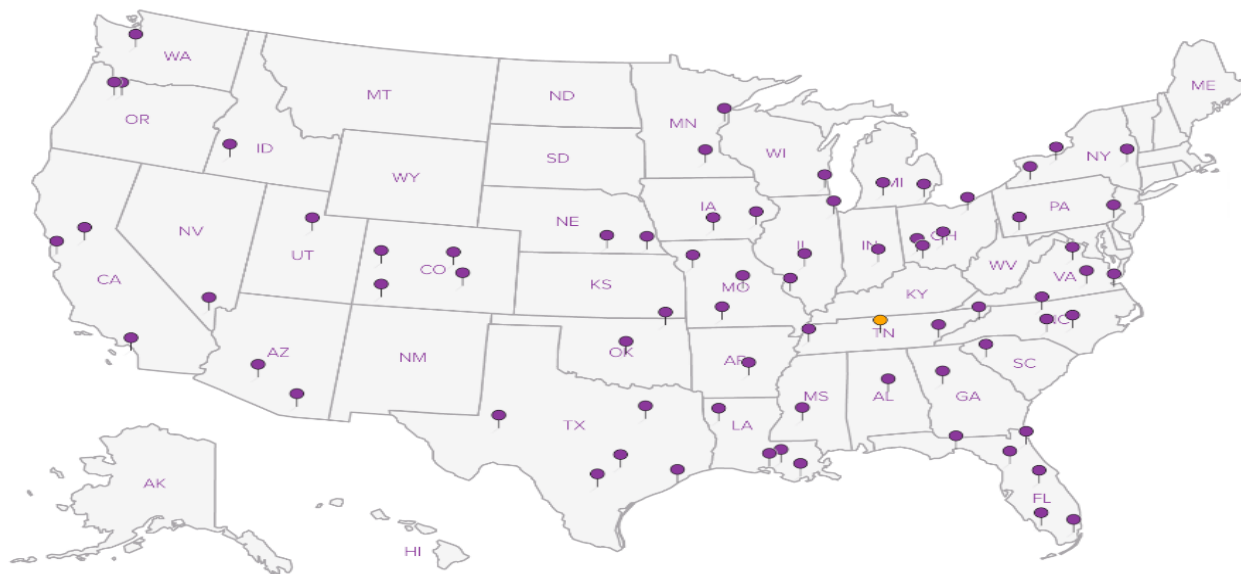
Third Party & Federal Accreditations

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.**



Barry Sulkin

4443 Pecan Valley Road
Nashville, TN 37218

Billing Information:

Mr. Barry Sulkin
4443 Pecan Valley Road
Nashville, TN 37218

Report to:
Mr. Barry Sulkin

Email To: sulkin@hughes.net

Project
Description: Chesterfield

City/State Chesterfield
Collected: VA

Phone: 615-255-2079
Fax: ~~251-0111~~

Client Project #
CHESTERFIELD

Lab Project #
SULK07-CHESTERFIELD

Collected by (print):
Barry Sulkin

Site/Facility ID #

P.O. #

Collected by (signature):
Barry Sulkin

Rush? (Lab MUST Be Notified)

Date Results Needed

Immediately
Packed on Ice N Y

 Same Day200%
 Next Day100%
 Two Day50%
 Three Day25%

Email? No Yes

FAX? No Yes

No.
of
Cnts

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cnts	CR6 2ozClr-NoPres	CR6ICFP 50mlTube/plungerPres	Cl,SO4, TDS 500mlHDPE-NoPres	Cl,SO4,NO2NO3,Phos 4ozClr-NoPres	Metals 250mlHDPE-HNO3 < 2	Metals 2ozClr-NoPres	NO2NO3, Phos 250mlHDPE-H2SO4 < 2	Total Solids 4ozClr-NoPres	Rem./Contaminant	Sample # (lab only)
1 Sample 1 by bird house	G	WW	Surf	7/6/16	1:15 pm	4		X	X		X		X			81
2 " 2 red cove		WW			2:15	4		X	X		X		X			82
3 " 3 outfall 005		WW			3:45	4		X	X		X		X			83
4 " 4 Osborne Landing		WW			5:15	4		X	X		X		X			84
		WW				4		X	X		X		X			
		WW				4		X	X		X		X			
		WW				4		X	X		X		X			
		WW				4		X	X		X		X			
2 Sample 2 red cove	G	SS	Surf	7/6/16	2:15	4	X			X		X		X		85
		SS				4	X			X		X		X		

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

Remarks: Shipped on Ice via FedEx

pH _____ Temp _____

Flow _____ Other _____

Relinquished by: (Signature)
Barry Sulkin

Date:
7/7/16

Time:
3:45 pm

Received by: (Signature)
[Signature]

Samples returned via: ☐ UPS

☐ FedEx ☐ Courier ☐ _____

Hold #

Condition: (lab use only)
u GM

Relinquished by: (Signature)
[Signature]

Date:

Time:

Received by: (Signature)
[Signature]

Temp: _____ °C Bottles Received:
3.7 28 20

Date: 7-8-16 Time: 9:10

COC Seal Intact: Y N NA

Relinquished by: (Signature)
[Signature]

Date:

Time:

Received for lab by: (Signature)
[Signature]

Date: 7-8-16

pH Checked:

NCF:

Matt Shacklock

From: Linda Cashman
Sent: Tuesday, July 19, 2016 1:16 PM
To: Login; Due SVOC; Extractions
Subject: SULK07 L845871-05 add SV8270PAHSIM-Limited Holding Time Remaining

Please add per client request below. Sample goes out of holding time on 7/20.

Please scan this email with COC.

Thank you,
Linda

**Linda Cashman | Senior Technical Service Representative
ESC Lab Sciences**

12065 Lebanon Road | Mt. Juliet, TN 37122
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ESC Lab Sciences, Your Lab of Choice
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From: Barry Sulkin [<mailto:sulkin@hughes.net>]
Sent: Tuesday, July 19, 2016 9:37 AM
To: Linda Cashman
Subject: Fwd: Re: Bremo & Chesterfield - preliminary results

So...

I do want to keep - and pay for - PAHs on the Bremo sed sample

AND

add to the Chesterfield sed sample: 2. Red Cove

thanks,

I'll write up next order for SC in a minute and send - Barry