

**REPORTED TO** Allterra Construction  
2158 Millstream Road  
Victoria, BC V9B 6H4

**TEL** (250) 508-0726  
**FAX**

**ATTENTION** Rahim Gaidhar

**WORK ORDER** 6111926

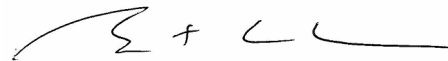
**PO NUMBER** P15-06 SIRM  
**PROJECT** SIRM 460 Stebbings  
**PROJECT INFO**

**RECEIVED / TEMP** 2016-11-28 10:45 / 7°C  
**REPORTED** 2016-12-05  
**COC NUMBER** 20161126

**General Comments:**

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.



Authorized By:

**Brent Coates, B.Sc.**  
Division Manager, Richmond

***If you have any questions or concerns, please contact your Account Manager:  
Bryan Shaw, Ph.D. (bshaw@caro.ca)***

**Locations:**

#110 4011 Viking Way  
Richmond, BC V6V 2K9  
Tel: 604-279-1499 Fax: 604-279-1599

#102 3677 Highway 97N  
Kelowna, BC V1X 5C3  
Tel: 250-765-9646 Fax: 250-765-3893

17225 109 Avenue  
Edmonton, AB T5S 1H7  
Tel: 780-489-9100 Fax: 780-489-9700

[www.caro.ca](http://www.caro.ca)

**REPORTED TO** Allterra Construction  
**PROJECT** SIRM 460 Stebbings

**WORK ORDER** 6111926  
**REPORTED** 2016-12-05

---

<b>Analysis Information</b> Analysis Descriptions, Method References, Glossary of Terms	Page 3
<b>Sample Analytical Data</b> Test Results, Reporting Limits, Analysis Dates, Sample & Analysis Notes	Page 4
<b>Quality Control Data</b> Method Blanks, Duplicates, Spikes, Reference Materials	Appendix 1
<b>Analytical Summary</b> Tabulated data in condensed format to assist with comparisons	Appendix 2
<b>Chain of Custody Document</b> Analysis instructions provided by client	Appendix 5

---

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analysis Description	Method Reference	Technique	Location
Alkalinity in Water	APHA 2320 B*	Titration with H2SO4	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Chromium, Hexavalent (Total) in Water	APHA 3500-Cr B	Colorimetry	Richmond
Colour, True in Water	APHA 2120 C	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	APHA 2510 B	Conductivity Meter	Kelowna
Dissolved Metals by ICPMS in Water	APHA 3030 B / APHA 3125 B	0.45 µm Filtration / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
EPH in Water	EPA 3511* / BCMOE EPHw	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Glycols in Water	EPA 8015B*	Gas Chromatography (GC-FID)	Richmond
Hardness (as CaCO3) in Water	APHA 2340 B	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
Hardness (as CaCO3) in Water	APHA 2340 B*	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Estimated)	N/A
HEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
LEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
Mercury, dissolved by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Mercury, total by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MS (SIM)	Richmond
Solids, Total Dissolved in Water	APHA 2540 C*	Gravimetry (Dried at 103-105C)	Kelowna
Solids, Total Suspended in Water	APHA 2540 D*	Gravimetry (Dried at 103-105C)	Kelowna
Total Metals by ICPMS in Water	APHA 3030E* / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
Turbidity in Water	APHA 2130 B	Nephelometry	Kelowna
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260B	Purge&Trap / GC-MS (SIM)	Richmond

**Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method**

**Method Reference Descriptions:**

APHA Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation  
 BCMOE British Columbia Environmental Laboratory Manual, 2013, British Columbia Ministry of Environment  
 EPA United States Environmental Protection Agency Test Methods

**Glossary of Terms:**

MRL Method Reporting Limit  
 < Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences  
 CU Colour Units (referenced against a platinum cobalt standard)  
 mg/L Milligrams per litre  
 NTU Nephelometric Turbidity Units  
 pH units pH < 7 = acidic, pH > 7 = basic  
 µg/L Micrograms per litre  
 µS/cm Microsiemens per centimetre

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result / Estimate of Recovery	Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
---------	-------------------------------	-------------	--------------	-------	----------	----------	-------

**Sample ID: 1-Weir (6111926-01) [Water] Sampled: 2016-11-26 10:50**

**Anions**

Chloride	23.1	± 1.1	0.10	mg/L	N/A	2016-11-29	
Fluoride	< 0.10		0.10	mg/L	N/A	2016-11-29	
Nitrate (as N)	0.216	± 0.027	0.010	mg/L	N/A	2016-11-29	
Nitrite (as N)	< 0.010		0.010	mg/L	N/A	2016-11-29	
Sulfate	38.5	± 4.6	1.0	mg/L	N/A	2016-11-29	

**General Parameters**

Alkalinity, Total (as CaCO3)	34	± 2	1	mg/L	N/A	2016-11-29	
Alkalinity, Phenolphthalein (as CaCO3)	< 1		1	mg/L	N/A	2016-11-29	
Alkalinity, Bicarbonate (as CaCO3)	34	± 2	1	mg/L	N/A	2016-11-29	
Alkalinity, Carbonate (as CaCO3)	< 1		1	mg/L	N/A	2016-11-29	
Alkalinity, Hydroxide (as CaCO3)	< 1		1	mg/L	N/A	2016-11-29	
Chromium, Hexavalent	< 0.001		0.001	mg/L	N/A	2016-11-29	
Colour, True	7	± 4	5	CU	N/A	2016-11-29	
Conductivity (EC)	237	± 4	2	µS/cm	N/A	2016-11-29	
pH	7.49	± 0.02	0.01	pH units	N/A	2016-11-29	HT2
Solids, Total Dissolved	151	± 16	10	mg/L	N/A	2016-11-30	
Solids, Total Suspended	36	± 3	2	mg/L	N/A	2016-11-30	
Turbidity	78.4	± 3.6	0.10	NTU	N/A	2016-11-29	

**Calculated Parameters**

Chromium, Trivalent	0.0070		0.0010	mg/L	N/A	N/A	
Hardness, Total (as CaCO3)	73.9		0.50	mg/L	N/A	N/A	

**Dissolved Metals**

Aluminum, dissolved	0.010	± 0.003	0.005	mg/L	N/A	2016-11-30	
Antimony, dissolved	0.0002	± 0.0001	0.0001	mg/L	N/A	2016-11-30	
Arsenic, dissolved	< 0.0005		0.0005	mg/L	N/A	2016-11-30	
Barium, dissolved	< 0.005		0.005	mg/L	N/A	2016-11-30	
Beryllium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-11-30	
Bismuth, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-11-30	
Boron, dissolved	0.014	± 0.003	0.004	mg/L	N/A	2016-11-30	
Cadmium, dissolved	< 0.00001		0.00001	mg/L	N/A	2016-11-30	
Calcium, dissolved	23.1	± 3.7	0.2	mg/L	N/A	2016-11-30	
Chromium, dissolved	< 0.0005		0.0005	mg/L	N/A	2016-11-30	
Cobalt, dissolved	0.00008	± 0.00001	0.00005	mg/L	N/A	2016-11-30	
Copper, dissolved	0.0005	± 0.0003	0.0002	mg/L	N/A	2016-11-30	
Iron, dissolved	< 0.010		0.010	mg/L	N/A	2016-11-30	
Lead, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-11-30	
Lithium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-11-30	
Magnesium, dissolved	3.95	± 0.64	0.01	mg/L	N/A	2016-11-30	
Manganese, dissolved	0.0040	± 0.0005	0.0002	mg/L	N/A	2016-11-30	
Mercury, dissolved	< 0.00002		0.00002	mg/L	2016-11-29	2016-11-29	
Molybdenum, dissolved	0.0005	± 0.0001	0.0001	mg/L	N/A	2016-11-30	
Nickel, dissolved	0.0006	± 0.0002	0.0002	mg/L	N/A	2016-11-30	
Phosphorus, dissolved	< 0.02		0.02	mg/L	N/A	2016-11-30	

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result / Estimate of Recovery	Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
---------	-------------------------------	-------------	--------------	-------	----------	----------	-------

**Sample ID: 1-Weir (6111926-01) [Water] Sampled: 2016-11-26 10:50, Continued**

***Dissolved Metals, Continued***

Potassium, dissolved	0.74	± 0.11	0.02	mg/L	N/A	2016-11-30	
Selenium, dissolved	< 0.0005		0.0005	mg/L	N/A	2016-11-30	
Silicon, dissolved	2.0	± 0.9	0.5	mg/L	N/A	2016-11-30	
Silver, dissolved	< 0.00005		0.00005	mg/L	N/A	2016-11-30	
Sodium, dissolved	13.3	± 2.1	0.02	mg/L	N/A	2016-11-30	
Strontium, dissolved	0.083	± 0.008	0.001	mg/L	N/A	2016-11-30	
Sulfur, dissolved	13	± 13	1	mg/L	N/A	2016-11-30	
Tellurium, dissolved	< 0.0002		0.0002	mg/L	N/A	2016-11-30	
Thallium, dissolved	< 0.00002		0.00002	mg/L	N/A	2016-11-30	
Thorium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-11-30	
Tin, dissolved	< 0.0002		0.0002	mg/L	N/A	2016-11-30	
Titanium, dissolved	< 0.005		0.005	mg/L	N/A	2016-11-30	
Uranium, dissolved	0.00018	± 0.00002	0.00002	mg/L	N/A	2016-11-30	
Vanadium, dissolved	< 0.001		0.001	mg/L	N/A	2016-11-30	
Zinc, dissolved	< 0.004		0.004	mg/L	N/A	2016-11-30	
Zirconium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-11-30	

***Total Metals***

Aluminum, total	3.81	± 0.69	0.005	mg/L	2016-11-29	2016-11-30	
Antimony, total	0.0002	± 0.0001	0.0001	mg/L	2016-11-29	2016-11-30	
Arsenic, total	0.0010	± 0.0001	0.0005	mg/L	2016-11-29	2016-11-30	
Barium, total	0.025	± 0.004	0.005	mg/L	2016-11-29	2016-11-30	
Beryllium, total	< 0.0001		0.0001	mg/L	2016-11-29	2016-11-30	
Bismuth, total	< 0.0001		0.0001	mg/L	2016-11-29	2016-11-30	
Boron, total	0.017	± 0.004	0.004	mg/L	2016-11-29	2016-11-30	
Cadmium, total	0.00002	± 0.00002	0.00001	mg/L	2016-11-29	2016-11-30	
Calcium, total	26.3	± 3.1	0.2	mg/L	2016-11-29	2016-11-30	
Chromium, total	0.0070	± 0.0009	0.0005	mg/L	2016-11-29	2016-11-30	
Cobalt, total	0.00195	± 0.00018	0.00005	mg/L	2016-11-29	2016-11-30	
Copper, total	0.0091	± 0.0010	0.0002	mg/L	2016-11-29	2016-11-30	
Iron, total	4.23	± 0.83	0.01	mg/L	2016-11-29	2016-11-30	
Lead, total	0.0021	± 0.0002	0.0001	mg/L	2016-11-29	2016-11-30	
Lithium, total	0.0022	± 0.0003	0.0001	mg/L	2016-11-29	2016-11-30	
Magnesium, total	5.18	± 0.79	0.01	mg/L	2016-11-29	2016-11-30	
Manganese, total	0.0666	± 0.0060	0.0002	mg/L	2016-11-29	2016-11-30	
Mercury, total	< 0.00002		0.00002	mg/L	2016-11-29	2016-11-30	
Molybdenum, total	0.0006	± 0.0001	0.0001	mg/L	2016-11-29	2016-11-30	
Nickel, total	0.0064	± 0.0006	0.0002	mg/L	2016-11-29	2016-11-30	
Phosphorus, total	0.08	± 0.19	0.02	mg/L	2016-11-29	2016-11-30	
Potassium, total	1.20	± 0.14	0.02	mg/L	2016-11-29	2016-11-30	
Selenium, total	< 0.0005		0.0005	mg/L	2016-11-29	2016-11-30	
Silicon, total	8.8	± 3.2	0.5	mg/L	2016-11-29	2016-11-30	
Silver, total	< 0.00005		0.00005	mg/L	2016-11-29	2016-11-30	
Sodium, total	13.9	± 2.0	0.02	mg/L	2016-11-29	2016-11-30	
Strontium, total	0.093	± 0.008	0.001	mg/L	2016-11-29	2016-11-30	
Sulfur, total	12	± 43	1	mg/L	2016-11-29	2016-11-30	

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result / Recovery	Estimate of Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
---------	----------------------	----------------------------	-----------------	-------	----------	----------	-------

**Sample ID: 1-Weir (6111926-01) [Water] Sampled: 2016-11-26 10:50, Continued**

**Total Metals, Continued**

Tellurium, total	< 0.0002		0.0002	mg/L	2016-11-29	2016-11-30	
Thallium, total	< 0.00002		0.00002	mg/L	2016-11-29	2016-11-30	
Thorium, total	<b>0.0001</b>		0.0001	mg/L	2016-11-29	2016-11-30	
Tin, total	< 0.0002		0.0002	mg/L	2016-11-29	2016-11-30	
Titanium, total	<b>0.205</b>	± 0.027	0.005	mg/L	2016-11-29	2016-11-30	
Uranium, total	<b>0.00029</b>	± 0.00002	0.00002	mg/L	2016-11-29	2016-11-30	
Vanadium, total	<b>0.011</b>	± 0.001	0.001	mg/L	2016-11-29	2016-11-30	
Zinc, total	<b>0.012</b>	± 0.003	0.004	mg/L	2016-11-29	2016-11-30	
Zirconium, total	<b>0.0031</b>	± 0.0007	0.0001	mg/L	2016-11-29	2016-11-30	

**BCMEOE Aggregate Hydrocarbons**

EPHw10-19	< 250		250	µg/L	2016-12-01	2016-12-01	
EPHw19-32	< 250		250	µg/L	2016-12-01	2016-12-01	
LEPHw	< 250		250	µg/L	N/A	N/A	
HEPHw	< 250		250	µg/L	N/A	N/A	
<i>Surrogate: 2-Methylnonane</i>	96		60-140	%	2016-12-01	2016-12-01	

**Glycols**

Propylene glycol	< 5		5	mg/L	N/A	2016-11-30	
Ethylene glycol	< 5		5	mg/L	N/A	2016-11-30	
Diethylene glycol	< 5		5	mg/L	N/A	2016-11-30	
Triethylene glycol	< 5		5	mg/L	N/A	2016-11-30	
<i>Surrogate: Tetramethylene Glycol</i>	105		66-125	%	N/A	2016-11-30	

**Polycyclic Aromatic Hydrocarbons (PAH)**

Acenaphthene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Acenaphthylene	< 0.20		0.20	µg/L	2016-12-01	2016-12-01	
Acridine	< 0.10		0.10	µg/L	2016-12-01	2016-12-01	
Anthracene	< 0.01		0.01	µg/L	2016-12-01	2016-12-01	
Benz (a) anthracene	< 0.01		0.01	µg/L	2016-12-01	2016-12-01	
Benzo (a) pyrene	< 0.01		0.01	µg/L	2016-12-01	2016-12-01	
Benzo (b) fluoranthene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Benzo (g,h,i) perylene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Benzo (k) fluoranthene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Chrysene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Dibenz (a,h) anthracene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Fluoranthene	< 0.03		0.03	µg/L	2016-12-01	2016-12-01	
Fluorene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Indeno (1,2,3-cd) pyrene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Naphthalene	< 0.20		0.20	µg/L	2016-12-01	2016-12-01	
Phenanthrene	< 0.10		0.10	µg/L	2016-12-01	2016-12-01	
Pyrene	< 0.02		0.02	µg/L	2016-12-01	2016-12-01	
Quinoline	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
<i>Surrogate: Acridine-d9</i>	60		60-130	%	2016-12-01	2016-12-01	
<i>Surrogate: Naphthalene-d8</i>	88		60-130	%	2016-12-01	2016-12-01	
<i>Surrogate: Perylene-d12</i>	103		60-130	%	2016-12-01	2016-12-01	

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result / Recovery	Estimate of Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
---------	----------------------	----------------------------	-----------------	-------	----------	----------	-------

**Sample ID: 1-Weir (6111926-01) [Water] Sampled: 2016-11-26 10:50, Continued**

<b>Volatile Organic Compounds (VOC)</b>							
Benzene	< 0.5		0.5	µg/L	N/A	2016-12-03	
Bromodichloromethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
Bromoform	< 1.0		1.0	µg/L	N/A	2016-12-03	
Bromomethane	< 2.0		2.0	µg/L	N/A	2016-12-03	
Carbon tetrachloride	< 1.0		1.0	µg/L	N/A	2016-12-03	
Chlorobenzene	< 1.0		1.0	µg/L	N/A	2016-12-03	
Chloroethane	< 2.0		2.0	µg/L	N/A	2016-12-03	
Chloroform	< 1.0		1.0	µg/L	N/A	2016-12-03	
Chloromethane	< 2.0		2.0	µg/L	N/A	2016-12-03	
Dibromochloromethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,2-Dibromoethane	< 0.3		0.3	µg/L	N/A	2016-12-03	
Dibromomethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,2-Dichlorobenzene	< 0.5		0.5	µg/L	N/A	2016-12-03	
1,3-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,4-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1-Dichloroethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,2-Dichloroethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-12-03	
cis-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-12-03	
trans-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,2-Dichloropropane	< 1.0		1.0	µg/L	N/A	2016-12-03	
cis-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2016-12-03	
trans-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2016-12-03	
Ethylbenzene	< 1.0		1.0	µg/L	N/A	2016-12-03	
Methyl tert-butyl ether	< 1.0		1.0	µg/L	N/A	2016-12-03	
Methylene chloride	< 3.0		3.0	µg/L	N/A	2016-12-03	
Styrene	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1,1,2-Tetrachloroethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1,2,2-Tetrachloroethane	< 1.0		1	µg/L	N/A	2016-12-03	
Tetrachloroethene	< 1.0		1.0	µg/L	N/A	2016-12-03	
Toluene	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1,1-Trichloroethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1,2-Trichloroethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
Trichloroethene	< 1.0		1.0	µg/L	N/A	2016-12-03	
Trichlorofluoromethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
Vinyl chloride	< 2.0		2.0	µg/L	N/A	2016-12-03	
Xylenes (total)	< 2.0		2.0	µg/L	N/A	2016-12-03	
Surrogate: Toluene-d8	105		70-130	%	N/A	2016-12-03	
Surrogate: 4-Bromofluorobenzene	101		70-130	%	N/A	2016-12-03	
Surrogate: 1,4-Dichlorobenzene-d4	92		70-130	%	N/A	2016-12-03	

**Sample ID: 2-SW1 (6111926-02) [Water] Sampled: 2016-11-26 11:10**

<b>Anions</b>							
Chloride	18.9 ± 0.9		0.10	mg/L	N/A	2016-11-29	

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result / Estimate of Recovery	Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
---------	-------------------------------	-------------	--------------	-------	----------	----------	-------

**Sample ID: 2-SW1 (6111926-02) [Water] Sampled: 2016-11-26 11:10, Continued**

**Anions, Continued**

Fluoride	< 0.10		0.10	mg/L	N/A	2016-11-29	
Nitrate (as N)	<b>0.400</b>	± 0.050	0.010	mg/L	N/A	2016-11-29	
Nitrite (as N)	< 0.010		0.010	mg/L	N/A	2016-11-29	
Sulfate	<b>50.5</b>	± 6.0	1.0	mg/L	N/A	2016-11-29	

**General Parameters**

Alkalinity, Total (as CaCO <sub>3</sub> )	<b>40</b>	± 2	1	mg/L	N/A	2016-11-29	
Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> )	< 1		1	mg/L	N/A	2016-11-29	
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	<b>40</b>	± 2	1	mg/L	N/A	2016-11-29	
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	< 1		1	mg/L	N/A	2016-11-29	
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	< 1		1	mg/L	N/A	2016-11-29	
Chromium, Hexavalent	<b>0.001</b>	± 0.002	0.001	mg/L	N/A	2016-11-29	
Colour, True	<b>5</b>	± 4	5	CU	N/A	2016-11-29	
Conductivity (EC)	<b>262</b>	± 4	2	µS/cm	N/A	2016-11-29	
pH	<b>7.44</b>	± 0.02	0.01	pH units	N/A	2016-11-29	HT2
Solids, Total Dissolved	<b>174</b>	± 17	10	mg/L	N/A	2016-11-30	
Solids, Total Suspended	<b>15</b>	± 1	2	mg/L	N/A	2016-11-30	
Turbidity	<b>28.0</b>	± 1.3	0.10	NTU	N/A	2016-11-29	

**Calculated Parameters**

Chromium, Trivalent	<b>0.0013</b>		0.0010	mg/L	N/A	N/A	
Hardness, Total (as CaCO <sub>3</sub> )	<b>90.8</b>		0.50	mg/L	N/A	N/A	

**Dissolved Metals**

Aluminum, dissolved	<b>0.014</b>	± 0.003	0.005	mg/L	N/A	2016-11-30	
Antimony, dissolved	<b>0.0002</b>	± 0.0001	0.0001	mg/L	N/A	2016-11-30	
Arsenic, dissolved	< 0.0005		0.0005	mg/L	N/A	2016-11-30	
Barium, dissolved	<b>0.007</b>	± 0.001	0.005	mg/L	N/A	2016-11-30	
Beryllium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-11-30	
Bismuth, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-11-30	
Boron, dissolved	<b>0.017</b>	± 0.003	0.004	mg/L	N/A	2016-11-30	
Cadmium, dissolved	<b>0.00002</b>	± 0.00001	0.00001	mg/L	N/A	2016-11-30	
Calcium, dissolved	<b>28.3</b>	± 4.6	0.2	mg/L	N/A	2016-11-30	
Chromium, dissolved	< 0.0005		0.0005	mg/L	N/A	2016-11-30	
Cobalt, dissolved	<b>0.00006</b>	± 0.00001	0.00005	mg/L	N/A	2016-11-30	
Copper, dissolved	<b>0.0012</b>	± 0.0004	0.0002	mg/L	N/A	2016-11-30	
Iron, dissolved	<b>0.022</b>	± 0.009	0.010	mg/L	N/A	2016-11-30	
Lead, dissolved	<b>0.0003</b>	± 0.0001	0.0001	mg/L	N/A	2016-11-30	
Lithium, dissolved	<b>0.0001</b>		0.0001	mg/L	N/A	2016-11-30	
Magnesium, dissolved	<b>4.87</b>	± 0.78	0.01	mg/L	N/A	2016-11-30	
Manganese, dissolved	<b>0.0028</b>	± 0.0004	0.0002	mg/L	N/A	2016-11-30	
Mercury, dissolved	< 0.00002		0.00002	mg/L	2016-11-29	2016-11-29	
Molybdenum, dissolved	<b>0.0007</b>	± 0.0001	0.0001	mg/L	N/A	2016-11-30	
Nickel, dissolved	<b>0.0008</b>	± 0.0002	0.0002	mg/L	N/A	2016-11-30	
Phosphorus, dissolved	< 0.02		0.02	mg/L	N/A	2016-11-30	
Potassium, dissolved	<b>0.78</b>	± 0.11	0.02	mg/L	N/A	2016-11-30	



**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result / Recovery	Estimate of Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
---------	----------------------	----------------------------	-----------------	-------	----------	----------	-------

**Sample ID: 2-SW1 (6111926-02) [Water] Sampled: 2016-11-26 11:10, Continued**

***Dissolved Metals, Continued***

Selenium, dissolved	< 0.0005		0.0005	mg/L	N/A	2016-11-30	
Silicon, dissolved	<b>3.2</b>	± 1.4	0.5	mg/L	N/A	2016-11-30	
Silver, dissolved	< 0.00005		0.00005	mg/L	N/A	2016-11-30	
Sodium, dissolved	<b>11.7</b>	± 1.8	0.02	mg/L	N/A	2016-11-30	
Strontium, dissolved	<b>0.091</b>	± 0.009	0.001	mg/L	N/A	2016-11-30	
Sulfur, dissolved	<b>17</b>	± 17	1	mg/L	N/A	2016-11-30	
Tellurium, dissolved	< 0.0002		0.0002	mg/L	N/A	2016-11-30	
Thallium, dissolved	< 0.00002		0.00002	mg/L	N/A	2016-11-30	
Thorium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-11-30	
Tin, dissolved	< 0.0002		0.0002	mg/L	N/A	2016-11-30	
Titanium, dissolved	< 0.005		0.005	mg/L	N/A	2016-11-30	
Uranium, dissolved	<b>0.00023</b>	± 0.00003	0.00002	mg/L	N/A	2016-11-30	
Vanadium, dissolved	< 0.001		0.001	mg/L	N/A	2016-11-30	
Zinc, dissolved	<b>0.122</b>	± 0.016	0.004	mg/L	N/A	2016-11-30	
Zirconium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-11-30	

***Total Metals***

Aluminum, total	<b>1.38</b>	± 0.25	0.005	mg/L	2016-11-29	2016-11-30	
Antimony, total	<b>0.0002</b>	± 0.0001	0.0001	mg/L	2016-11-29	2016-11-30	
Arsenic, total	< 0.0005		0.0005	mg/L	2016-11-29	2016-11-30	
Barium, total	<b>0.013</b>	± 0.002	0.005	mg/L	2016-11-29	2016-11-30	
Beryllium, total	< 0.0001		0.0001	mg/L	2016-11-29	2016-11-30	
Bismuth, total	< 0.0001		0.0001	mg/L	2016-11-29	2016-11-30	
Boron, total	<b>0.018</b>	± 0.004	0.004	mg/L	2016-11-29	2016-11-30	
Cadmium, total	< 0.00001		0.00001	mg/L	2016-11-29	2016-11-30	
Calcium, total	<b>31.1</b>	± 3.6	0.2	mg/L	2016-11-29	2016-11-30	
Chromium, total	<b>0.0025</b>	± 0.0003	0.0005	mg/L	2016-11-29	2016-11-30	
Cobalt, total	<b>0.00073</b>	± 0.00007	0.00005	mg/L	2016-11-29	2016-11-30	
Copper, total	<b>0.0040</b>	± 0.0005	0.0002	mg/L	2016-11-29	2016-11-30	
Iron, total	<b>1.48</b>	± 0.29	0.01	mg/L	2016-11-29	2016-11-30	
Lead, total	<b>0.0008</b>	± 0.0001	0.0001	mg/L	2016-11-29	2016-11-30	
Lithium, total	<b>0.0009</b>	± 0.0001	0.0001	mg/L	2016-11-29	2016-11-30	
Magnesium, total	<b>5.16</b>	± 0.79	0.01	mg/L	2016-11-29	2016-11-30	
Manganese, total	<b>0.0251</b>	± 0.0023	0.0002	mg/L	2016-11-29	2016-11-30	
Mercury, total	< 0.00002		0.00002	mg/L	2016-11-29	2016-11-30	
Molybdenum, total	<b>0.0007</b>	± 0.0001	0.0001	mg/L	2016-11-29	2016-11-30	
Nickel, total	<b>0.0025</b>	± 0.0002	0.0002	mg/L	2016-11-29	2016-11-30	
Phosphorus, total	<b>0.04</b>	± 0.09	0.02	mg/L	2016-11-29	2016-11-30	
Potassium, total	<b>0.92</b>	± 0.11	0.02	mg/L	2016-11-29	2016-11-30	
Selenium, total	< 0.0005		0.0005	mg/L	2016-11-29	2016-11-30	
Silicon, total	<b>5.7</b>	± 2.1	0.5	mg/L	2016-11-29	2016-11-30	
Silver, total	< 0.00005		0.00005	mg/L	2016-11-29	2016-11-30	
Sodium, total	<b>11.8</b>	± 1.7	0.02	mg/L	2016-11-29	2016-11-30	
Strontium, total	<b>0.095</b>	± 0.008	0.001	mg/L	2016-11-29	2016-11-30	
Sulfur, total	<b>16</b>	± 57	1	mg/L	2016-11-29	2016-11-30	
Tellurium, total	< 0.0002		0.0002	mg/L	2016-11-29	2016-11-30	

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result / Recovery	Estimate of Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
---------	----------------------	----------------------------	-----------------	-------	----------	----------	-------

**Sample ID: 2-SW1 (6111926-02) [Water] Sampled: 2016-11-26 11:10, Continued**

**Total Metals, Continued**

Thallium, total	< 0.00002		0.00002	mg/L	2016-11-29	2016-11-30	
Thorium, total	< 0.0001		0.0001	mg/L	2016-11-29	2016-11-30	
Tin, total	< 0.0002		0.0002	mg/L	2016-11-29	2016-11-30	
Titanium, total	<b>0.079</b>	± 0.011	0.005	mg/L	2016-11-29	2016-11-30	
Uranium, total	<b>0.00027</b>	± 0.00002	0.00002	mg/L	2016-11-29	2016-11-30	
Vanadium, total	<b>0.004</b>	± 0.001	0.001	mg/L	2016-11-29	2016-11-30	
Zinc, total	<b>0.006</b>	± 0.002	0.004	mg/L	2016-11-29	2016-11-30	
Zirconium, total	<b>0.0004</b>	± 0.0001	0.0001	mg/L	2016-11-29	2016-11-30	

**BCMOE Aggregate Hydrocarbons**

EPHw10-19	< 250		250	µg/L	2016-12-01	2016-12-01	
EPHw19-32	< 250		250	µg/L	2016-12-01	2016-12-01	
LEPHw	< 250		250	µg/L	N/A	N/A	
HEPHw	< 250		250	µg/L	N/A	N/A	
Surrogate: 2-Methylnonane	92		60-140	%	2016-12-01	2016-12-01	

**Glycols**

Propylene glycol	< 5		5	mg/L	N/A	2016-11-30	
Ethylene glycol	< 5		5	mg/L	N/A	2016-11-30	
Diethylene glycol	< 5		5	mg/L	N/A	2016-11-30	
Triethylene glycol	< 5		5	mg/L	N/A	2016-11-30	
Surrogate: Tetramethylene Glycol	106		66-125	%	N/A	2016-11-30	

**Polycyclic Aromatic Hydrocarbons (PAH)**

Acenaphthene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Acenaphthylene	< 0.20		0.20	µg/L	2016-12-01	2016-12-01	
Acridine	< 0.10		0.10	µg/L	2016-12-01	2016-12-01	
Anthracene	< 0.01		0.01	µg/L	2016-12-01	2016-12-01	
Benz (a) anthracene	< 0.01		0.01	µg/L	2016-12-01	2016-12-01	
Benzo (a) pyrene	< 0.01		0.01	µg/L	2016-12-01	2016-12-01	
Benzo (b) fluoranthene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Benzo (g,h,i) perylene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Benzo (k) fluoranthene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Chrysene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Dibenz (a,h) anthracene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Fluoranthene	< 0.03		0.03	µg/L	2016-12-01	2016-12-01	
Fluorene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Indeno (1,2,3-cd) pyrene	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Naphthalene	< 0.20		0.20	µg/L	2016-12-01	2016-12-01	
Phenanthrene	< 0.10		0.10	µg/L	2016-12-01	2016-12-01	
Pyrene	< 0.02		0.02	µg/L	2016-12-01	2016-12-01	
Quinoline	< 0.05		0.05	µg/L	2016-12-01	2016-12-01	
Surrogate: Acridine-d9	55		60-130	%	2016-12-01	2016-12-01	S02
Surrogate: Naphthalene-d8	92		60-130	%	2016-12-01	2016-12-01	
Surrogate: Perylene-d12	96		60-130	%	2016-12-01	2016-12-01	

**Volatile Organic Compounds (VOC)**

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result / Recovery	Estimate of Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
---------	----------------------	----------------------------	-----------------	-------	----------	----------	-------

**Sample ID: 2-SW1 (6111926-02) [Water] Sampled: 2016-11-26 11:10, Continued**

**Volatile Organic Compounds (VOC), Continued**

Benzene	< 0.5		0.5	µg/L	N/A	2016-12-03	
Bromodichloromethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
Bromoform	< 1.0		1.0	µg/L	N/A	2016-12-03	
Bromomethane	< 2.0		2.0	µg/L	N/A	2016-12-03	
Carbon tetrachloride	< 1.0		1.0	µg/L	N/A	2016-12-03	
Chlorobenzene	< 1.0		1.0	µg/L	N/A	2016-12-03	
Chloroethane	< 2.0		2.0	µg/L	N/A	2016-12-03	
Chloroform	< 1.0		1.0	µg/L	N/A	2016-12-03	
Chloromethane	< 2.0		2.0	µg/L	N/A	2016-12-03	
Dibromochloromethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,2-Dibromoethane	< 0.3		0.3	µg/L	N/A	2016-12-03	
Dibromomethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,2-Dichlorobenzene	< 0.5		0.5	µg/L	N/A	2016-12-03	
1,3-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,4-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1-Dichloroethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,2-Dichloroethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-12-03	
cis-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-12-03	
trans-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,2-Dichloropropane	< 1.0		1.0	µg/L	N/A	2016-12-03	
cis-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2016-12-03	
trans-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2016-12-03	
Ethylbenzene	< 1.0		1.0	µg/L	N/A	2016-12-03	
Methyl tert-butyl ether	< 1.0		1.0	µg/L	N/A	2016-12-03	
Methylene chloride	< 3.0		3.0	µg/L	N/A	2016-12-03	
Styrene	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1,1,2-Tetrachloroethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1,2,2-Tetrachloroethane	< 1.0		1	µg/L	N/A	2016-12-03	
Tetrachloroethene	< 1.0		1.0	µg/L	N/A	2016-12-03	
Toluene	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1,1-Trichloroethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
1,1,2-Trichloroethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
Trichloroethene	< 1.0		1.0	µg/L	N/A	2016-12-03	
Trichlorofluoromethane	< 1.0		1.0	µg/L	N/A	2016-12-03	
Vinyl chloride	< 2.0		2.0	µg/L	N/A	2016-12-03	
Xylenes (total)	< 2.0		2.0	µg/L	N/A	2016-12-03	
Surrogate: Toluene-d8	105		70-130	%	N/A	2016-12-03	
Surrogate: 4-Bromofluorobenzene	101		70-130	%	N/A	2016-12-03	
Surrogate: 1,4-Dichlorobenzene-d4	90		70-130	%	N/A	2016-12-03	

**Sample / Analysis Qualifiers:**

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.  
S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk):** Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup):** Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS):** A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM):** A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
---------	--------	-----------	-------------	---------------	-------	-----------	-------	-----------	-------

**Anions, Batch B6K1831**

Blank (B6K1831-BLK1) Prepared: 2016-11-29, Analyzed: 2016-11-29									
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Sulfate	< 1.0	1.0 mg/L							

LCS (B6K1831-BS1) Prepared: 2016-11-29, Analyzed: 2016-11-29									
Chloride	16.1	0.10 mg/L	16.0		101	90-110			
Fluoride	3.78	0.10 mg/L	4.00		94	88-108			
Nitrate (as N)	4.29	0.010 mg/L	4.00		107	93-108			
Nitrite (as N)	1.98	0.010 mg/L	2.00		99	83-110			
Sulfate	15.9	1.0 mg/L	16.0		99	91-109			

**BCMOE Aggregate Hydrocarbons, Batch B6L0003**

Blank (B6L0003-BLK1) Prepared: 2016-12-01, Analyzed: 2016-12-01									
EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							
Surrogate: 2-Methylnonane	411	µg/L	444		92	60-140			

LCS (B6L0003-BS2) Prepared: 2016-12-01, Analyzed: 2016-12-01									
EPHw10-19	17700	250 µg/L	15600		113	70-130			
EPHw19-32	20200	250 µg/L	22200		91	70-130			
Surrogate: 2-Methylnonane	474	µg/L	444		107	60-140			

**Dissolved Metals, Batch B6K1883**

Blank (B6K1883-BLK1) Prepared: 2016-11-29, Analyzed: 2016-11-29									
Mercury, dissolved	< 0.00002	0.00002 mg/L							

Reference (B6K1883-SRM1) Prepared: 2016-11-29, Analyzed: 2016-11-29									
Mercury, dissolved	0.00529	0.00002 mg/L	0.00489		108	50-150			

**APPENDIX 1: QUALITY CONTROL DATA**

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
---------	--------	-----------	-------------	---------------	-------	-----------	-------	-----------	-------

*Dissolved Metals, Batch B6K1883, Continued*

*Dissolved Metals, Batch B6K1943*

**Blank (B6K1943-BLK1)**

Prepared: 2016-11-30, Analyzed: 2016-11-30

Aluminum, dissolved	< 0.005	0.005 mg/L							
Antimony, dissolved	< 0.0001	0.0001 mg/L							
Arsenic, dissolved	< 0.0005	0.0005 mg/L							
Barium, dissolved	< 0.005	0.005 mg/L							
Beryllium, dissolved	< 0.0001	0.0001 mg/L							
Bismuth, dissolved	< 0.0001	0.0001 mg/L							
Boron, dissolved	< 0.004	0.004 mg/L							
Cadmium, dissolved	< 0.00001	0.00001 mg/L							
Calcium, dissolved	< 0.2	0.2 mg/L							
Chromium, dissolved	< 0.0005	0.0005 mg/L							
Cobalt, dissolved	< 0.00005	0.00005 mg/L							
Copper, dissolved	< 0.0002	0.0002 mg/L							
Iron, dissolved	< 0.010	0.010 mg/L							
Lead, dissolved	< 0.0001	0.0001 mg/L							
Lithium, dissolved	< 0.0001	0.0001 mg/L							
Magnesium, dissolved	< 0.01	0.01 mg/L							
Manganese, dissolved	< 0.0002	0.0002 mg/L							
Molybdenum, dissolved	< 0.0001	0.0001 mg/L							
Nickel, dissolved	< 0.0002	0.0002 mg/L							
Phosphorus, dissolved	< 0.02	0.02 mg/L							
Potassium, dissolved	< 0.02	0.02 mg/L							
Selenium, dissolved	< 0.0005	0.0005 mg/L							
Silicon, dissolved	< 0.5	0.5 mg/L							
Silver, dissolved	< 0.00005	0.00005 mg/L							
Sodium, dissolved	< 0.02	0.02 mg/L							
Strontium, dissolved	< 0.001	0.001 mg/L							
Sulfur, dissolved	< 1	1 mg/L							
Tellurium, dissolved	< 0.0002	0.0002 mg/L							
Thallium, dissolved	< 0.00002	0.00002 mg/L							
Thorium, dissolved	< 0.0001	0.0001 mg/L							
Tin, dissolved	< 0.0002	0.0002 mg/L							
Titanium, dissolved	< 0.005	0.005 mg/L							
Uranium, dissolved	< 0.00002	0.00002 mg/L							
Vanadium, dissolved	< 0.001	0.001 mg/L							
Zinc, dissolved	< 0.004	0.004 mg/L							
Zirconium, dissolved	< 0.0001	0.0001 mg/L							

**Reference (B6K1943-SRM1)**

Prepared: 2016-11-30, Analyzed: 2016-11-30

Aluminum, dissolved	0.225	0.005 mg/L	0.233	97	58-142
Antimony, dissolved	0.0454	0.0001 mg/L	0.0430	106	75-125
Arsenic, dissolved	0.454	0.0005 mg/L	0.438	104	81-119
Barium, dissolved	3.33	0.005 mg/L	3.35	99	83-117
Beryllium, dissolved	0.215	0.0001 mg/L	0.213	101	80-120
Boron, dissolved	1.71	0.004 mg/L	1.74	98	74-117
Cadmium, dissolved	0.235	0.00001 mg/L	0.224	105	83-117
Calcium, dissolved	7.6	0.2 mg/L	7.69	99	76-124
Chromium, dissolved	0.441	0.0005 mg/L	0.437	101	81-119
Cobalt, dissolved	0.135	0.00005 mg/L	0.128	106	76-124
Copper, dissolved	0.881	0.0002 mg/L	0.844	104	84-116
Iron, dissolved	1.31	0.010 mg/L	1.29	102	74-126
Lead, dissolved	0.116	0.0001 mg/L	0.112	104	72-128
Lithium, dissolved	0.104	0.0001 mg/L	0.104	100	60-140
Magnesium, dissolved	7.06	0.01 mg/L	6.92	102	81-119
Manganese, dissolved	0.347	0.0002 mg/L	0.345	101	84-116

## APPENDIX 1: QUALITY CONTROL DATA

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
<b>Dissolved Metals, Batch B6K1943, Continued</b>									
<b>Reference (B6K1943-SRM1), Continued</b>					Prepared: 2016-11-30, Analyzed: 2016-11-30				
Molybdenum, dissolved	0.426	0.0001 mg/L	0.426		100	83-117			
Nickel, dissolved	0.871	0.0002 mg/L	0.840		104	74-126			
Phosphorus, dissolved	0.52	0.02 mg/L	0.495		105	68-132			
Potassium, dissolved	3.24	0.02 mg/L	3.19		102	74-126			
Selenium, dissolved	0.0364	0.0005 mg/L	0.0331		110	70-130			
Sodium, dissolved	19.1	0.02 mg/L	19.1		100	72-128			
Strontium, dissolved	0.899	0.001 mg/L	0.916		98	84-113			
Thallium, dissolved	0.0406	0.00002 mg/L	0.0393		103	57-143			
Uranium, dissolved	0.268	0.00002 mg/L	0.266		101	85-115			
Vanadium, dissolved	0.859	0.001 mg/L	0.869		99	87-113			
Zinc, dissolved	0.910	0.004 mg/L	0.881		103	72-128			
<b>General Parameters, Batch B6K1770</b>									
<b>Blank (B6K1770-BLK1)</b>					Prepared: 2016-11-30, Analyzed: 2016-11-30				
Solids, Total Suspended	< 1	2 mg/L							
<b>LCS (B6K1770-BS1)</b>					Prepared: 2016-11-30, Analyzed: 2016-11-30				
Solids, Total Suspended	48	2 mg/L	50.0		96	85-110			
<b>General Parameters, Batch B6K1888</b>									
<b>Blank (B6K1888-BLK1)</b>					Prepared: 2016-11-29, Analyzed: 2016-11-29				
Chromium, Hexavalent	< 0.001	0.001 mg/L							
<b>LCS (B6K1888-BS1)</b>					Prepared: 2016-11-29, Analyzed: 2016-11-29				
Chromium, Hexavalent	0.101	0.001 mg/L	0.100		101	90-111			
<b>General Parameters, Batch B6K1901</b>									
<b>Blank (B6K1901-BLK1)</b>					Prepared: 2016-11-29, Analyzed: 2016-11-29				
Alkalinity, Total (as CaCO3)	< 1	1 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	1 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	1 mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1	1 mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1	1 mg/L							
Conductivity (EC)	< 2	2 µS/cm							
<b>LCS (B6K1901-BS1)</b>					Prepared: 2016-11-29, Analyzed: 2016-11-29				
Alkalinity, Total (as CaCO3)	102	1 mg/L	100		102	96-108			
<b>LCS (B6K1901-BS2)</b>					Prepared: 2016-11-29, Analyzed: 2016-11-29				
Conductivity (EC)	1410	2 µS/cm	1410		100	95-104			
<b>Duplicate (B6K1901-DUP1)</b>					Source: 6111926-01 Prepared: 2016-11-29, Analyzed: 2016-11-29				
Alkalinity, Total (as CaCO3)	35	1 mg/L	34			4	10		
Alkalinity, Phenolphthalein (as CaCO3)	< 1	1 mg/L	< 1				10		
Alkalinity, Bicarbonate (as CaCO3)	35	1 mg/L	34			4	10		
Alkalinity, Carbonate (as CaCO3)	< 1	1 mg/L	< 1				10		
Alkalinity, Hydroxide (as CaCO3)	< 1	1 mg/L	< 1				10		
Conductivity (EC)	235	2 µS/cm	237			< 1	5		
pH	7.54	0.01 pH units	7.49			< 1	5		
<b>Reference (B6K1901-SRM1)</b>					Prepared: 2016-11-29, Analyzed: 2016-11-29				
pH	7.01	0.01 pH units	7.00		100	98-102			

## APPENDIX 1: QUALITY CONTROL DATA

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
<b>General Parameters, Batch B6K1905</b>									
<b>Blank (B6K1905-BLK1)</b>			Prepared: 2016-11-29, Analyzed: 2016-11-29						
Colour, True	< 5	5 CU							
<b>LCS (B6K1905-BS1)</b>			Prepared: 2016-11-29, Analyzed: 2016-11-29						
Colour, True	11	5 CU	10.0		108	85-115			
<b>Duplicate (B6K1905-DUP1)</b>			Source: 6111926-02		Prepared: 2016-11-29, Analyzed: 2016-11-29				
Colour, True	5	5 CU		5				5	
<b>General Parameters, Batch B6K1992</b>									
<b>Blank (B6K1992-BLK1)</b>			Prepared: 2016-11-30, Analyzed: 2016-11-30						
Solids, Total Dissolved	< 10	10 mg/L							
<b>Reference (B6K1992-SRM1)</b>			Prepared: 2016-11-30, Analyzed: 2016-11-30						
Solids, Total Dissolved	241	10 mg/L	240		100	85-115			
<b>General Parameters, Batch B6K2003</b>									
<b>Blank (B6K2003-BLK1)</b>			Prepared: 2016-11-30, Analyzed: 2016-11-30						
Turbidity	< 0.10	0.10 NTU							
<b>LCS (B6K2003-BS1)</b>			Prepared: 2016-11-30, Analyzed: 2016-11-30						
Turbidity	40.7	0.10 NTU	40.0		102	90-110			
<b>Glycols, Batch B6K1864</b>									
<b>Blank (B6K1864-BLK1)</b>			Prepared: 2016-11-30, Analyzed: 2016-11-30						
Propylene glycol	< 5	5 mg/L							
Ethylene glycol	< 5	5 mg/L							
Diethylene glycol	< 5	5 mg/L							
Triethylene glycol	< 5	5 mg/L							
Surrogate: Tetramethylene Glycol	104	mg/L	95.6		109	66-125			
<b>LCS (B6K1864-BS1)</b>			Prepared: 2016-11-30, Analyzed: 2016-11-30						
Propylene glycol	52	5 mg/L	50.0		104	71-114			
Ethylene glycol	55	5 mg/L	49.9		110	82-124			
Diethylene glycol	56	5 mg/L	50.0		113	80-116			
Triethylene glycol	58	5 mg/L	49.8		117	73-120			
Surrogate: Tetramethylene Glycol	107	mg/L	95.6		112	66-125			
<b>LCS Dup (B6K1864-BSD1)</b>			Prepared: 2016-11-30, Analyzed: 2016-11-30						
Propylene glycol	52	5 mg/L	50.0		103	71-114	< 1	20	
Ethylene glycol	55	5 mg/L	49.9		110	82-124	< 1	20	
Diethylene glycol	56	5 mg/L	50.0		113	80-116	< 1	20	
Triethylene glycol	52	5 mg/L	49.8		104	73-120	12	20	
Surrogate: Tetramethylene Glycol	106	mg/L	95.6		110	66-125			
<b>Polycyclic Aromatic Hydrocarbons (PAH), Batch B6L0003</b>									
<b>Blank (B6L0003-BLK1)</b>			Prepared: 2016-12-01, Analyzed: 2016-12-01						
Acenaphthene	< 0.05	0.05 µg/L							
Acenaphthylene	< 0.20	0.20 µg/L							
Acridine	< 0.10	0.10 µg/L							
Anthracene	< 0.01	0.01 µg/L							
Benz (a) anthracene	< 0.01	0.01 µg/L							



**APPENDIX 1: QUALITY CONTROL DATA**

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
<b>Polycyclic Aromatic Hydrocarbons (PAH), Batch B6L0003, Continued</b>									
<b>Blank (B6L0003-BLK1), Continued</b>					Prepared: 2016-12-01, Analyzed: 2016-12-01				
Benzo (a) pyrene	< 0.01	0.01 µg/L							
Benzo (b) fluoranthene	< 0.05	0.05 µg/L							
Benzo (g,h,i) perylene	< 0.05	0.05 µg/L							
Benzo (k) fluoranthene	< 0.05	0.05 µg/L							
Chrysene	< 0.05	0.05 µg/L							
Dibenz (a,h) anthracene	< 0.05	0.05 µg/L							
Fluoranthene	< 0.03	0.03 µg/L							
Fluorene	< 0.05	0.05 µg/L							
Indeno (1,2,3-cd) pyrene	< 0.05	0.05 µg/L							
Naphthalene	< 0.20	0.20 µg/L							
Phenanthrene	< 0.10	0.10 µg/L							
Pyrene	< 0.02	0.02 µg/L							
Quinoline	< 0.05	0.05 µg/L							
Surrogate: Acridine-d9	2.85	µg/L	4.44		64	60-130			
Surrogate: Naphthalene-d8	3.71	µg/L	4.44		84	60-130			
Surrogate: Perylene-d12	4.27	µg/L	4.44		96	60-130			
<b>LCS (B6L0003-BS1)</b>					Prepared: 2016-12-01, Analyzed: 2016-12-01				
Acenaphthene	5.02	0.05 µg/L	4.44		113	70-130			
Acenaphthylene	4.84	0.20 µg/L	4.44		109	70-130			
Acridine	3.71	0.10 µg/L	4.44		83	60-130			
Anthracene	4.33	0.01 µg/L	4.44		97	70-130			
Benz (a) anthracene	5.13	0.01 µg/L	4.44		115	70-130			
Benzo (a) pyrene	4.89	0.01 µg/L	4.44		110	70-130			
Benzo (b) fluoranthene	4.77	0.05 µg/L	4.44		107	70-130			
Benzo (g,h,i) perylene	5.16	0.05 µg/L	4.44		116	70-130			
Benzo (k) fluoranthene	4.65	0.05 µg/L	4.44		105	70-130			
Chrysene	4.77	0.05 µg/L	4.44		107	70-130			
Dibenz (a,h) anthracene	5.07	0.05 µg/L	4.44		114	70-130			
Fluoranthene	5.28	0.03 µg/L	4.44		119	70-130			
Fluorene	4.53	0.05 µg/L	4.44		102	70-130			
Indeno (1,2,3-cd) pyrene	5.00	0.05 µg/L	4.44		113	70-130			
Naphthalene	4.84	0.20 µg/L	4.44		109	70-130			
Phenanthrene	4.21	0.10 µg/L	4.44		95	70-130			
Pyrene	4.77	0.02 µg/L	4.44		107	70-130			
Quinoline	4.52	0.05 µg/L	4.44		102	70-130			
Surrogate: Acridine-d9	2.58	µg/L	4.44		58	60-130			S02
Surrogate: Naphthalene-d8	4.89	µg/L	4.44		110	60-130			
Surrogate: Perylene-d12	5.00	µg/L	4.44		112	60-130			
<b>LCS Dup (B6L0003-BSD1)</b>					Prepared: 2016-12-01, Analyzed: 2016-12-01				
Acenaphthene	4.37	0.05 µg/L	4.44		98	70-130	14	20	
Acenaphthylene	4.21	0.20 µg/L	4.44		95	70-130	14	20	
Acridine	4.17	0.10 µg/L	4.44		94	60-130	12	20	
Anthracene	4.62	0.01 µg/L	4.44		104	70-130	7	20	
Benz (a) anthracene	5.22	0.01 µg/L	4.44		117	70-130	2	20	
Benzo (a) pyrene	4.79	0.01 µg/L	4.44		108	70-130	2	20	
Benzo (b) fluoranthene	5.18	0.05 µg/L	4.44		117	70-130	8	20	
Benzo (g,h,i) perylene	5.23	0.05 µg/L	4.44		118	70-130	1	20	
Benzo (k) fluoranthene	5.19	0.05 µg/L	4.44		117	70-130	11	20	
Chrysene	5.13	0.05 µg/L	4.44		116	70-130	7	20	
Dibenz (a,h) anthracene	5.04	0.05 µg/L	4.44		113	70-130	< 1	20	
Fluoranthene	4.85	0.03 µg/L	4.44		109	70-130	8	20	
Fluorene	4.41	0.05 µg/L	4.44		99	70-130	3	20	
Indeno (1,2,3-cd) pyrene	5.10	0.05 µg/L	4.44		115	70-130	2	20	
Naphthalene	3.59	0.20 µg/L	4.44		81	70-130	30	20	RPD



**APPENDIX 1: QUALITY CONTROL DATA**

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
---------	--------	-----------	-------------	---------------	-------	-----------	-------	-----------	-------

**Polycyclic Aromatic Hydrocarbons (PAH), Batch B6L0003, Continued**

**LCS Dup (B6L0003-BSD1), Continued**

Prepared: 2016-12-01, Analyzed: 2016-12-01

Phenanthrene	4.92	0.10 µg/L	4.44		111	70-130	16	20	
Pyrene	5.08	0.02 µg/L	4.44		114	70-130	6	20	
Quinoline	5.10	0.05 µg/L	4.44		115	70-130	12	20	
Surrogate: Acridine-d9	2.98	µg/L	4.44		67	60-130			
Surrogate: Naphthalene-d8	3.31	µg/L	4.44		74	60-130			
Surrogate: Perylene-d12	4.71	µg/L	4.44		106	60-130			

**Total Metals, Batch B6K1925**

**Blank (B6K1925-BLK1)**

Prepared: 2016-11-29, Analyzed: 2016-11-30

Aluminum, total	< 0.005	0.005 mg/L							
Antimony, total	< 0.0001	0.0001 mg/L							
Arsenic, total	< 0.0005	0.0005 mg/L							
Barium, total	< 0.005	0.005 mg/L							
Beryllium, total	< 0.0001	0.0001 mg/L							
Bismuth, total	< 0.0001	0.0001 mg/L							
Boron, total	< 0.004	0.004 mg/L							
Cadmium, total	< 0.00001	0.00001 mg/L							
Calcium, total	< 0.2	0.2 mg/L							
Chromium, total	< 0.0005	0.0005 mg/L							
Cobalt, total	< 0.00005	0.00005 mg/L							
Copper, total	< 0.0002	0.0002 mg/L							
Iron, total	< 0.01	0.01 mg/L							
Lead, total	< 0.0001	0.0001 mg/L							
Lithium, total	< 0.0001	0.0001 mg/L							
Magnesium, total	< 0.01	0.01 mg/L							
Manganese, total	< 0.0002	0.0002 mg/L							
Molybdenum, total	< 0.0001	0.0001 mg/L							
Nickel, total	< 0.0002	0.0002 mg/L							
Phosphorus, total	< 0.02	0.02 mg/L							
Potassium, total	< 0.02	0.02 mg/L							
Selenium, total	< 0.0005	0.0005 mg/L							
Silicon, total	< 0.5	0.5 mg/L							
Silver, total	< 0.00005	0.00005 mg/L							
Sodium, total	< 0.02	0.02 mg/L							
Strontium, total	< 0.001	0.001 mg/L							
Sulfur, total	< 1	1 mg/L							
Tellurium, total	< 0.0002	0.0002 mg/L							
Thallium, total	< 0.00002	0.00002 mg/L							
Thorium, total	< 0.0001	0.0001 mg/L							
Tin, total	< 0.0002	0.0002 mg/L							
Titanium, total	< 0.005	0.005 mg/L							
Uranium, total	< 0.00002	0.00002 mg/L							
Vanadium, total	< 0.001	0.001 mg/L							
Zinc, total	< 0.004	0.004 mg/L							
Zirconium, total	< 0.0001	0.0001 mg/L							

**Matrix Spike (B6K1925-MS1)**

Source: 6111926-02

Prepared: 2016-11-29, Analyzed: 2016-11-30

Antimony, total	0.426	0.0001 mg/L	0.400	0.0002	106	84-125			
Arsenic, total	0.208	0.0005 mg/L	0.200	< 0.0005	104	85-116			
Barium, total	1.01	0.005 mg/L	1.00	0.013	100	87-114			
Beryllium, total	0.0991	0.0001 mg/L	0.100	< 0.0001	99	72-116			
Cadmium, total	0.104	0.00001 mg/L	0.100	< 0.00001	104	90-112			
Chromium, total	0.410	0.0005 mg/L	0.400	0.0025	102	89-120			
Cobalt, total	0.414	0.00005 mg/L	0.400	0.00073	103	88-120			
Copper, total	0.423	0.0002 mg/L	0.400	0.0040	105	88-125			

**APPENDIX 1: QUALITY CONTROL DATA**

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
---------	--------	-----------	-------------	---------------	-------	-----------	-------	-----------	-------

**Total Metals, Batch B6K1925, Continued**

Matrix Spike (B6K1925-MS1), Continued	Source: 6111926-02		Prepared: 2016-11-29, Analyzed: 2016-11-30						
Iron, total	3.59	0.01 mg/L	2.00	1.48	106	88-119			
Lead, total	0.212	0.0001 mg/L	0.200	0.0008	106	89-118			
Manganese, total	0.435	0.0002 mg/L	0.400	0.0251	103	84-120			
Nickel, total	0.419	0.0002 mg/L	0.400	0.0025	104	87-119			
Selenium, total	0.109	0.0005 mg/L	0.100	< 0.0005	109	85-113			
Silver, total	0.104	0.00005 mg/L	0.100	< 0.00005	104	89-119			
Thallium, total	0.104	0.00002 mg/L	0.100	< 0.00002	104	92-119			
Vanadium, total	0.402	0.001 mg/L	0.400	0.004	99	87-117			
Zinc, total	1.04	0.004 mg/L	1.00	0.006	103	85-116			

Reference (B6K1925-SRM1)	Prepared: 2016-11-29, Analyzed: 2016-11-30								
Aluminum, total	0.288	0.005 mg/L	0.303		95	81-129			
Antimony, total	0.0520	0.0001 mg/L	0.0511		102	88-114			
Arsenic, total	0.117	0.0005 mg/L	0.118		99	88-114			
Barium, total	0.764	0.005 mg/L	0.823		93	72-104			
Beryllium, total	0.0480	0.0001 mg/L	0.0496		97	76-131			
Boron, total	3.29	0.004 mg/L	3.45		95	75-121			
Cadmium, total	0.0499	0.00001 mg/L	0.0495		101	89-111			
Calcium, total	11.7	0.2 mg/L	11.6		100	86-121			
Chromium, total	0.244	0.0005 mg/L	0.250		97	89-114			
Cobalt, total	0.0381	0.00005 mg/L	0.0377		101	91-113			
Copper, total	0.497	0.0002 mg/L	0.486		102	91-115			
Iron, total	0.49	0.01 mg/L	0.488		101	77-124			
Lead, total	0.203	0.0001 mg/L	0.204		100	92-113			
Lithium, total	0.375	0.0001 mg/L	0.403		93	85-115			
Magnesium, total	3.81	0.01 mg/L	3.79		101	78-120			
Manganese, total	0.104	0.0002 mg/L	0.109		95	90-114			
Molybdenum, total	0.199	0.0001 mg/L	0.198		101	90-111			
Nickel, total	0.248	0.0002 mg/L	0.249		100	90-111			
Phosphorus, total	0.22	0.02 mg/L	0.227		99	85-115			
Potassium, total	7.12	0.02 mg/L	7.21		99	84-113			
Selenium, total	0.131	0.0005 mg/L	0.121		108	85-115			
Sodium, total	7.56	0.02 mg/L	7.54		100	82-123			
Strontium, total	0.374	0.001 mg/L	0.375		100	88-112			
Thallium, total	0.0816	0.00002 mg/L	0.0805		101	91-114			
Uranium, total	0.0298	0.00002 mg/L	0.0306		98	85-120			
Vanadium, total	0.371	0.001 mg/L	0.386		96	86-111			
Zinc, total	2.44	0.004 mg/L	2.49		98	85-111			

**Total Metals, Batch B6K1927**

Blank (B6K1927-BLK1)	Prepared: 2016-11-29, Analyzed: 2016-11-30								
Mercury, total	< 0.00002	0.00002 mg/L							
Blank (B6K1927-BLK2)	Prepared: 2016-11-29, Analyzed: 2016-11-30								
Mercury, total	< 0.00002	0.00002 mg/L							
Reference (B6K1927-SRM1)	Prepared: 2016-11-29, Analyzed: 2016-11-30								
Mercury, total	0.00526	0.00002 mg/L	0.00489		108	50-150			
Reference (B6K1927-SRM2)	Prepared: 2016-11-29, Analyzed: 2016-11-30								
Mercury, total	0.00503	0.00002 mg/L	0.00489		103	50-150			

**Volatile Organic Compounds (VOC), Batch B6L0044**

**APPENDIX 1: QUALITY CONTROL DATA**

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
---------	--------	-----------	-------------	---------------	-------	-----------	-------	-----------	-------

**Volatile Organic Compounds (VOC), Batch B6L0044, Continued**

Blank (B6L0044-BLK1)			Prepared: 2016-12-03, Analyzed: 2016-12-03						
Benzene	< 0.5	0.5 µg/L							
Bromodichloromethane	< 1.0	1.0 µg/L							
Bromoform	< 1.0	1.0 µg/L							
Bromomethane	< 2.0	2.0 µg/L							
Carbon tetrachloride	< 1.0	1.0 µg/L							
Chlorobenzene	< 1.0	1.0 µg/L							
Chloroethane	< 2.0	2.0 µg/L							
Chloroform	< 1.0	1.0 µg/L							
Chloromethane	< 2.0	2.0 µg/L							
Dibromochloromethane	< 1.0	1.0 µg/L							
1,2-Dibromoethane	< 0.3	0.3 µg/L							
Dibromomethane	< 1.0	1.0 µg/L							
1,2-Dichlorobenzene	< 0.5	0.5 µg/L							
1,3-Dichlorobenzene	< 1.0	1.0 µg/L							
1,4-Dichlorobenzene	< 1.0	1.0 µg/L							
1,1-Dichloroethane	< 1.0	1.0 µg/L							
1,2-Dichloroethane	< 1.0	1.0 µg/L							
1,1-Dichloroethene	< 1.0	1.0 µg/L							
cis-1,2-Dichloroethene	< 1.0	1.0 µg/L							
trans-1,2-Dichloroethene	< 1.0	1.0 µg/L							
1,2-Dichloropropane	< 1.0	1.0 µg/L							
cis-1,3-Dichloropropene	< 1.0	1.0 µg/L							
trans-1,3-Dichloropropene	< 1.0	1.0 µg/L							
Ethylbenzene	< 1.0	1.0 µg/L							
Methyl tert-butyl ether	< 1.0	1.0 µg/L							
Methylene chloride	< 3.0	3.0 µg/L							
Styrene	< 1.0	1.0 µg/L							
1,1,1,2-Tetrachloroethane	< 1.0	1.0 µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L							
Tetrachloroethene	< 1.0	1.0 µg/L							
Toluene	< 1.0	1.0 µg/L							
1,1,1-Trichloroethane	< 1.0	1.0 µg/L							
1,1,2-Trichloroethane	< 1.0	1.0 µg/L							
Trichloroethene	< 1.0	1.0 µg/L							
Trichlorofluoromethane	< 1.0	1.0 µg/L							
Vinyl chloride	< 2.0	2.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	25.3	µg/L	25.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	25.0	µg/L	25.0		100	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	22.4	µg/L	25.0		90	70-130			

LCS (B6L0044-BS1)			Prepared: 2016-12-03, Analyzed: 2016-12-03						
Benzene	16.9	0.5 µg/L	20.0		85	70-130			
Bromodichloromethane	16.3	1.0 µg/L	20.0		82	70-130			
Bromoform	15.9	1.0 µg/L	20.0		80	70-130			
Bromomethane	12.6	2.0 µg/L	20.0		63	70-130			SPK
Carbon tetrachloride	17.9	1.0 µg/L	20.0		89	70-130			
Chlorobenzene	16.4	1.0 µg/L	20.0		82	70-130			
Chloroethane	15.8	2.0 µg/L	20.0		79	70-130			
Chloroform	17.5	1.0 µg/L	20.0		87	70-130			
Chloromethane	22.6	2.0 µg/L	20.0		113	70-130			
Dibromochloromethane	15.7	1.0 µg/L	20.0		78	70-130			
1,2-Dibromoethane	16.4	0.3 µg/L	20.0		82	70-130			
Dibromomethane	17.7	1.0 µg/L	20.0		88	70-130			
1,2-Dichlorobenzene	16.9	0.5 µg/L	20.0		85	70-130			
1,3-Dichlorobenzene	16.5	1.0 µg/L	20.0		82	70-130			

**APPENDIX 1: QUALITY CONTROL DATA**

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
<b>Volatile Organic Compounds (VOC), Batch B6L0044, Continued</b>									
<b>LCS (B6L0044-BS1), Continued</b>					Prepared: 2016-12-03, Analyzed: 2016-12-03				
1,4-Dichlorobenzene	16.0	1.0 µg/L	20.0		80	70-130			
1,1-Dichloroethane	17.2	1.0 µg/L	20.0		86	70-130			
1,2-Dichloroethane	17.6	1.0 µg/L	20.0		88	70-130			
1,1-Dichloroethene	16.4	1.0 µg/L	20.0		82	70-130			
cis-1,2-Dichloroethene	18.1	1.0 µg/L	20.0		90	70-130			
trans-1,2-Dichloroethene	18.0	1.0 µg/L	20.0		90	70-130			
1,2-Dichloropropane	16.1	1.0 µg/L	20.0		81	70-130			
cis-1,3-Dichloropropene	16.0	1.0 µg/L	20.0		80	70-130			
trans-1,3-Dichloropropene	15.2	1.0 µg/L	20.0		76	70-130			
Ethylbenzene	16.7	1.0 µg/L	20.0		83	70-130			
Methyl tert-butyl ether	24.1	1.0 µg/L	20.0		120	70-130			
Methylene chloride	17.6	3.0 µg/L	20.0		88	70-130			
Styrene	16.5	1.0 µg/L	20.0		82	70-130			
1,1,1,2-Tetrachloroethane	15.9	1.0 µg/L	20.0		80	70-130			
1,1,2,2-Tetrachloroethane	16.4	0.5 µg/L	20.0		82	70-130			
Tetrachloroethene	19.1	1.0 µg/L	20.0		96	70-130			
Toluene	16.2	1.0 µg/L	20.0		81	70-130			
1,1,1-Trichloroethane	18.6	1.0 µg/L	20.0		93	70-130			
1,1,2-Trichloroethane	17.0	1.0 µg/L	20.0		85	70-130			
Trichloroethene	16.7	1.0 µg/L	20.0		83	70-130			
Trichlorofluoromethane	18.0	1.0 µg/L	20.0		90	70-130			
Vinyl chloride	21.9	2.0 µg/L	20.0		109	70-130			
Xylenes (total)	52.4	2.0 µg/L	60.0		87	70-130			
Surrogate: Toluene-d8	26.4	µg/L	25.0		105	70-130			
Surrogate: 4-Bromofluorobenzene	26.5	µg/L	25.0		106	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	27.6	µg/L	25.0		110	70-130			

**QC Qualifiers:**

- RPD Relative percent difference (RPD) of duplicate analysis are outside of control limits for unknown reason(s).
- S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
- SPK The recovery of this analyte was outside of established control limits.

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

		6111926-01	6111926-02
		Water	Water
		2016-11-26	2016-11-26
		1-Weir	2-SW1
Anions	Chloride (mg/L)	23.1	18.9
	Fluoride (mg/L)	< 0.10	< 0.10
	Nitrate (as N) (mg/L)	0.216	0.400
	Nitrite (as N) (mg/L)	< 0.010	< 0.010
	Sulfate (mg/L)	38.5	50.5
General Parameters	Alkalinity, Total (as CaCO3) (mg/L)	34	40
	Alkalinity, Phenolphthalein (as CaCO3) (mg/	< 1	< 1
	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	34	40
	Alkalinity, Carbonate (as CaCO3) (mg/L)	< 1	< 1
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	< 1	< 1
	Chromium, Hexavalent (mg/L)	< 0.001	0.001
	Colour, True (CU)	7	5
	Conductivity (EC) (uS/cm)	237	262
	pH (pH units)	7.49	7.44
	Solids, Total Dissolved (mg/L)	151	174
	Solids, Total Suspended (mg/L)	36	15
	Turbidity (NTU)	78.4	28.0
Calculated Parameters	Chromium, Trivalent (mg/L)	0.0070	0.0013
	Hardness, Total (as CaCO3) (mg/L)	73.9	90.8
Dissolved Metals	Aluminum, dissolved (mg/L)	0.010	0.014
	Antimony, dissolved (mg/L)	0.0002	0.0002
	Arsenic, dissolved (mg/L)	< 0.0005	< 0.0005
	Barium, dissolved (mg/L)	< 0.005	0.007
	Beryllium, dissolved (mg/L)	< 0.0001	< 0.0001
	Bismuth, dissolved (mg/L)	< 0.0001	< 0.0001
	Boron, dissolved (mg/L)	0.014	0.017
	Cadmium, dissolved (mg/L)	< 0.00001	0.00002
	Calcium, dissolved (mg/L)	23.1	28.3
	Chromium, dissolved (mg/L)	< 0.0005	< 0.0005
	Cobalt, dissolved (mg/L)	0.00008	0.00006
	Copper, dissolved (mg/L)	0.0005	0.0012
	Iron, dissolved (mg/L)	< 0.010	0.022
	Lead, dissolved (mg/L)	< 0.0001	0.0003
	Lithium, dissolved (mg/L)	< 0.0001	0.0001
	Magnesium, dissolved (mg/L)	3.95	4.87
	Manganese, dissolved (mg/L)	0.0040	0.0028
	Mercury, dissolved (mg/L)	< 0.00002	< 0.00002
	Molybdenum, dissolved (mg/L)	0.0005	0.0007
	Nickel, dissolved (mg/L)	0.0006	0.0008
	Phosphorus, dissolved (mg/L)	< 0.02	< 0.02
	Potassium, dissolved (mg/L)	0.74	0.78
	Selenium, dissolved (mg/L)	< 0.0005	< 0.0005
	Silicon, dissolved (mg/L)	2.0	3.2
	Silver, dissolved (mg/L)	< 0.00005	< 0.00005

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

		6111926-01	6111926-02
		Water	Water
		2016-11-26	2016-11-26
		1-Weir	2-SW1
Dissolved Metals	Sodium, dissolved (mg/L)	13.3	11.7
	Strontium, dissolved (mg/L)	0.083	0.091
	Sulfur, dissolved (mg/L)	13	17
	Tellurium, dissolved (mg/L)	< 0.0002	< 0.0002
	Thallium, dissolved (mg/L)	< 0.00002	< 0.00002
	Thorium, dissolved (mg/L)	< 0.0001	< 0.0001
	Tin, dissolved (mg/L)	< 0.0002	< 0.0002
	Titanium, dissolved (mg/L)	< 0.005	< 0.005
	Uranium, dissolved (mg/L)	0.00018	0.00023
	Vanadium, dissolved (mg/L)	< 0.001	< 0.001
	Zinc, dissolved (mg/L)	< 0.004	0.122
	Zirconium, dissolved (mg/L)	< 0.0001	< 0.0001
	Total Metals	Aluminum, total (mg/L)	3.81
Antimony, total (mg/L)		0.0002	0.0002
Arsenic, total (mg/L)		0.0010	< 0.0005
Barium, total (mg/L)		0.025	0.013
Beryllium, total (mg/L)		< 0.0001	< 0.0001
Bismuth, total (mg/L)		< 0.0001	< 0.0001
Boron, total (mg/L)		0.017	0.018
Cadmium, total (mg/L)		0.00002	< 0.00001
Calcium, total (mg/L)		26.3	31.1
Chromium, total (mg/L)		0.0070	0.0025
Cobalt, total (mg/L)		0.00195	0.00073
Copper, total (mg/L)		0.0091	0.0040
Iron, total (mg/L)		4.23	1.48
Lead, total (mg/L)		0.0021	0.0008
Lithium, total (mg/L)		0.0022	0.0009
Magnesium, total (mg/L)		5.18	5.16
Manganese, total (mg/L)		0.0666	0.0251
Mercury, total (mg/L)		< 0.00002	< 0.00002
Molybdenum, total (mg/L)		0.0006	0.0007
Nickel, total (mg/L)		0.0064	0.0025
Phosphorus, total (mg/L)		0.08	0.04
Potassium, total (mg/L)		1.20	0.92
Selenium, total (mg/L)		< 0.0005	< 0.0005
Silicon, total (mg/L)		8.8	5.7
Silver, total (mg/L)		< 0.00005	< 0.00005
Sodium, total (mg/L)		13.9	11.8
Strontium, total (mg/L)		0.093	0.095
Sulfur, total (mg/L)		12	16
Tellurium, total (mg/L)		< 0.0002	< 0.0002
Thallium, total (mg/L)		< 0.00002	< 0.00002
Thorium, total (mg/L)		0.0001	< 0.0001
Tin, total (mg/L)		< 0.0002	< 0.0002
Titanium, total (mg/L)		0.205	0.079

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

		6111926-01	6111926-02
		Water	Water
		2016-11-26	2016-11-26
		1-Weir	2-SW1
Total Metals	Uranium, total (mg/L)	0.00029	0.00027
	Vanadium, total (mg/L)	0.011	0.004
	Zinc, total (mg/L)	0.012	0.006
	Zirconium, total (mg/L)	0.0031	0.0004
BCMOE Aggregate Hydrocarbons	EPHw10-19 (ug/L)	< 250	< 250
	EPHw19-32 (ug/L)	< 250	< 250
	LEPHw (ug/L)	< 250	< 250
	HEPHw (ug/L)	< 250	< 250
	Sur: 2-Methylnonane (%)	96	92
Glycols	Propylene glycol (mg/L)	< 5	< 5
	Ethylene glycol (mg/L)	< 5	< 5
	Diethylene glycol (mg/L)	< 5	< 5
	Triethylene glycol (mg/L)	< 5	< 5
	Sur: Tetramethylene Glycol (%)	105	106
Polycyclic Aromatic Hydrocarbons (PAH)	Acenaphthene (ug/L)	< 0.05	< 0.05
	Acenaphthylene (ug/L)	< 0.20	< 0.20
	Acridine (ug/L)	< 0.10	< 0.10
	Anthracene (ug/L)	< 0.01	< 0.01
	Benz (a) anthracene (ug/L)	< 0.01	< 0.01
	Benzo (a) pyrene (ug/L)	< 0.01	< 0.01
	Benzo (b) fluoranthene (ug/L)	< 0.05	< 0.05
	Benzo (g,h,i) perylene (ug/L)	< 0.05	< 0.05
	Benzo (k) fluoranthene (ug/L)	< 0.05	< 0.05
	Chrysene (ug/L)	< 0.05	< 0.05
	Dibenz (a,h) anthracene (ug/L)	< 0.05	< 0.05
	Fluoranthene (ug/L)	< 0.03	< 0.03
	Fluorene (ug/L)	< 0.05	< 0.05
	Indeno (1,2,3-cd) pyrene (ug/L)	< 0.05	< 0.05
	Naphthalene (ug/L)	< 0.20	< 0.20
	Phenanthrene (ug/L)	< 0.10	< 0.10
	Pyrene (ug/L)	< 0.02	< 0.02
	Quinoline (ug/L)	< 0.05	< 0.05
	Sur: Acridine-d9 (%)	60	55
	Sur: Naphthalene-d8 (%)	88	92
Sur: Perylene-d12 (%)	103	96	
Volatile Organic Compounds (VOC)	Benzene (ug/L)	< 0.5	< 0.5
	Bromodichloromethane (ug/L)	< 1.0	< 1.0
	Bromoform (ug/L)	< 1.0	< 1.0
	Bromomethane (ug/L)	< 2.0	< 2.0
	Carbon tetrachloride (ug/L)	< 1.0	< 1.0
	Chlorobenzene (ug/L)	< 1.0	< 1.0
	Chloroethane (ug/L)	< 2.0	< 2.0
	Chloroform (ug/L)	< 1.0	< 1.0
	Chloromethane (ug/L)	< 2.0	< 2.0
	Dibromochloromethane (ug/L)	< 1.0	< 1.0

**REPORTED TO PROJECT** Allterra Construction  
SIRM 460 Stebbings

**WORK ORDER REPORTED** 6111926  
2016-12-05

		6111926-01	6111926-02
		Water	Water
		2016-11-26	2016-11-26
		1-Weir	2-SW1
Volatile Organic Compounds (VOC)	1,2-Dibromoethane (ug/L)	< 0.3	< 0.3
	Dibromomethane (ug/L)	< 1.0	< 1.0
	1,2-Dichlorobenzene (ug/L)	< 0.5	< 0.5
	1,3-Dichlorobenzene (ug/L)	< 1.0	< 1.0
	1,4-Dichlorobenzene (ug/L)	< 1.0	< 1.0
	1,1-Dichloroethane (ug/L)	< 1.0	< 1.0
	1,2-Dichloroethane (ug/L)	< 1.0	< 1.0
	1,1-Dichloroethene (ug/L)	< 1.0	< 1.0
	cis-1,2-Dichloroethene (ug/L)	< 1.0	< 1.0
	trans-1,2-Dichloroethene (ug/L)	< 1.0	< 1.0
	1,2-Dichloropropane (ug/L)	< 1.0	< 1.0
	cis-1,3-Dichloropropene (ug/L)	< 1.0	< 1.0
	trans-1,3-Dichloropropene (ug/L)	< 1.0	< 1.0
	Ethylbenzene (ug/L)	< 1.0	< 1.0
	Methyl tert-butyl ether (ug/L)	< 1.0	< 1.0
	Methylene chloride (ug/L)	< 3.0	< 3.0
	Styrene (ug/L)	< 1.0	< 1.0
	1,1,1,2-Tetrachloroethane (ug/L)	< 1.0	< 1.0
	1,1,2,2-Tetrachloroethane (ug/L)	< 1.0	< 1.0
	Tetrachloroethene (ug/L)	< 1.0	< 1.0
	Toluene (ug/L)	< 1.0	< 1.0
	1,1,1-Trichloroethane (ug/L)	< 1.0	< 1.0
	1,1,2-Trichloroethane (ug/L)	< 1.0	< 1.0
	Trichloroethene (ug/L)	< 1.0	< 1.0
	Trichlorofluoromethane (ug/L)	< 1.0	< 1.0
	Vinyl chloride (ug/L)	< 2.0	< 2.0
	Xylenes (total) (ug/L)	< 2.0	< 2.0
	Sur: Toluene-d8 (%)	105	105
	Sur: 4-Bromofluorobenzene (%)	101	101
	Sur: 1,4-Dichlorobenzene-d4 (%)	92	90



<b>Client Information</b> Allterra Construction 2158 Millstream Road Victoria BC V9B 6H4 Phone: (250) 508-0726	<b>Project Information</b> SIRM 460 Stebbings Number: [none] Sample count: 2 TAT: 5	<b>Laboratory Information</b> CARO Analytical Services #110 - 4011 Viking Way Richmond BC V6V 2K9 Phone: (604) 279-1499 Fax: (604) 279-1599	<b>COC Information</b> Number: 20161126 Shipped via: Harbour Air
--	---	--	--

#1	1-Weir (Template: 01) 11/26/2016 10:50 Grab / Water	<p style="text-align: center;"><b>Analyses</b></p> Alkalinity, all (KEL) TAT: 5 Anions in Water by IC, 5 Analytes (KEL) TAT: 5 Colour, True - 456 nm (KEL) TAT: 5 Conductivity in Water (KEL) TAT: 5 Glycols in Water (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss CVAFS Reg & Low (RMD) TAT: 5 Mercury, total CVAFS Reg & Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: Chromium Speciation Required pH in Water (KEL) TAT: 5 Solids, Total Dissolved (KEL) TAT: 5 Solids, Total Suspended (KEL) TAT: 5 Turbidity (KEL) TAT: 5 VOC in Water (RMD) TAT: 5	<p style="text-align: center;"><b>Containers</b></p> C03_250 mL Glass (EPH/PAH) (1) C04_40 mL Vial (VOC Water) (2) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) C19_40 mL Vial (General CG) (2) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1) C09_125 mL Plastic (CN/Cr6) (1)
#2	2-SW1 (Template: 01) 11/26/2016 11:10 Grab / Water	<p style="text-align: center;"><b>Analyses</b></p> Alkalinity, all (KEL) TAT: 5 Anions in Water by IC, 5 Analytes (KEL) TAT: 5 Colour, True - 456 nm (KEL) TAT: 5 Conductivity in Water (KEL) TAT: 5 Glycols in Water (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss CVAFS Reg & Low (RMD) TAT: 5 Mercury, total CVAFS Reg & Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: Chromium Speciation Required pH in Water (KEL) TAT: 5 Solids, Total Dissolved (KEL) TAT: 5 Solids, Total Suspended (KEL) TAT: 5 Turbidity (KEL) TAT: 5 VOC in Water (RMD) TAT: 5	<p style="text-align: center;"><b>Containers</b></p> C03_250 mL Glass (EPH/PAH) (1) C04_40 mL Vial (VOC Water) (2) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) C19_40 mL Vial (General CG) (2) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1) C09_125 mL Plastic (CN/Cr6) (1)

Relinquished by	Date/Time	Accepted by	Date/Time