

REPORTED TO Allterra Construction
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WORK ORDER 6100918

PO NUMBER

RECEIVED / TEMP 2016-10-14 12:15 / 10°C

PROJECT SIRM 460 Stebbings

REPORTED 2016-10-17

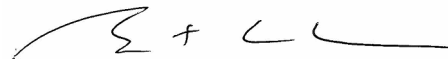
PROJECT INFO

COC NUMBER B33060

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.



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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
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	Richmond
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MS (SIM)	Richmond
Solids, Total Dissolved (Calc) in Water	APHA 1030 E	Calculation: 100 x ([Cations]-[Anions]) / ([Cations]+[Anions])	N/A
Solids, Total Suspended in Water	APHA 2540 D*	Gravimetry (Dried at 103-105C)	Richmond
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	Richmond
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

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Analyte	Result / Estimate of Recovery	Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
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Sample ID: 1 (6100918-01) [Water] Sampled: 2016-10-14 07:30

Anions

Chloride	42.3	± 1.9	0.10	mg/L	N/A	2016-10-15	
Fluoride	< 0.10		0.10	mg/L	N/A	2016-10-15	
Nitrate (as N)	1.02	± 0.13	0.010	mg/L	N/A	2016-10-15	
Nitrite (as N)	< 0.010		0.010	mg/L	N/A	2016-10-15	
Sulfate	149	± 18	1.0	mg/L	N/A	2016-10-15	

General Parameters

Alkalinity, Total (as CaCO3)	25	± 2	1	mg/L	2016-10-14	2016-10-16	
Alkalinity, Phenolphthalein (as CaCO3)	< 1		1	mg/L	2016-10-14	2016-10-16	
Alkalinity, Bicarbonate (as CaCO3)	25	± 1	1	mg/L	2016-10-14	2016-10-16	
Alkalinity, Carbonate (as CaCO3)	< 1		1	mg/L	2016-10-14	2016-10-16	
Alkalinity, Hydroxide (as CaCO3)	< 1		1	mg/L	2016-10-14	2016-10-16	
Colour, True	< 5		5	CU	N/A	2016-10-17	
Conductivity (EC)	528	± 8	2	µS/cm	2016-10-14	2016-10-16	
pH	7.54	± 0.03	0.01	pH units	N/A	2016-10-17	HT2
Solids, Total Suspended	13	± 2	2	mg/L	N/A	2016-10-15	
Turbidity	21.1	± 2.7	0.10	NTU	N/A	2016-10-14	

Calculated Parameters

Hardness, Total (as CaCO3)	187		0.50	mg/L	N/A	N/A	
Solids, Total Dissolved	304		10	mg/L	N/A	2016-10-17	

Dissolved Metals

Aluminum, dissolved	0.006	± 0.002	0.005	mg/L	N/A	2016-10-14	
Antimony, dissolved	0.0008	± 0.0001	0.0001	mg/L	N/A	2016-10-14	
Arsenic, dissolved	0.0013	± 0.0002	0.0005	mg/L	N/A	2016-10-14	
Barium, dissolved	0.014	± 0.002	0.005	mg/L	N/A	2016-10-14	
Beryllium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-10-14	
Bismuth, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-10-14	
Boron, dissolved	0.025	± 0.005	0.004	mg/L	N/A	2016-10-14	
Cadmium, dissolved	0.00004	± 0.00001	0.00001	mg/L	N/A	2016-10-14	
Calcium, dissolved	58.0	± 8.9	0.2	mg/L	N/A	2016-10-14	
Chromium, dissolved	0.0006	± 0.0002	0.0005	mg/L	N/A	2016-10-14	
Cobalt, dissolved	0.00039	± 0.00004	0.00005	mg/L	N/A	2016-10-14	
Copper, dissolved	0.0010	± 0.0004	0.0002	mg/L	N/A	2016-10-14	
Iron, dissolved	< 0.010		0.010	mg/L	N/A	2016-10-14	
Lead, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-10-14	
Lithium, dissolved	0.0003	± 0.0001	0.0001	mg/L	N/A	2016-10-14	
Magnesium, dissolved	10.3	± 1.7	0.01	mg/L	N/A	2016-10-14	
Manganese, dissolved	0.0538	± 0.0061	0.0002	mg/L	N/A	2016-10-14	
Mercury, dissolved	< 0.00002		0.00002	mg/L	2016-10-16	2016-10-16	
Molybdenum, dissolved	0.0009	± 0.0001	0.0001	mg/L	N/A	2016-10-14	
Nickel, dissolved	0.0019	± 0.0003	0.0002	mg/L	N/A	2016-10-14	
Phosphorus, dissolved	< 0.02		0.02	mg/L	N/A	2016-10-14	
Potassium, dissolved	1.52	± 0.21	0.02	mg/L	N/A	2016-10-14	
Selenium, dissolved	< 0.0005		0.0005	mg/L	N/A	2016-10-14	

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Analyte	Result / Recovery	Estimate of Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
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Sample ID: 1 (6100918-01) [Water] Sampled: 2016-10-14 07:30, Continued

Dissolved Metals, Continued

Silicon, dissolved	3.0	± 1.4	0.5	mg/L	N/A	2016-10-14	
Silver, dissolved	< 0.00005		0.00005	mg/L	N/A	2016-10-14	
Sodium, dissolved	23.4	± 3.6	0.02	mg/L	N/A	2016-10-14	
Strontium, dissolved	0.233	± 0.024	0.001	mg/L	N/A	2016-10-14	
Sulfur, dissolved	51	± 758	1	mg/L	N/A	2016-10-14	
Tellurium, dissolved	< 0.0002		0.0002	mg/L	N/A	2016-10-14	
Thallium, dissolved	< 0.00002		0.00002	mg/L	N/A	2016-10-14	
Thorium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-10-14	
Tin, dissolved	< 0.0002		0.0002	mg/L	N/A	2016-10-14	
Titanium, dissolved	< 0.005		0.005	mg/L	N/A	2016-10-14	
Uranium, dissolved	0.00012	± 0.00002	0.00002	mg/L	N/A	2016-10-14	
Vanadium, dissolved	< 0.001		0.001	mg/L	N/A	2016-10-14	
Zinc, dissolved	< 0.004		0.004	mg/L	N/A	2016-10-14	
Zirconium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-10-14	

Total Metals

Aluminum, total	1.93	± 0.35	0.005	mg/L	2016-10-14	2016-10-14	
Antimony, total	0.0004	± 0.0001	0.0001	mg/L	2016-10-14	2016-10-14	
Arsenic, total	0.0006	± 0.0001	0.0005	mg/L	2016-10-14	2016-10-14	
Barium, total	0.027	± 0.004	0.005	mg/L	2016-10-14	2016-10-14	
Beryllium, total	< 0.0001		0.0001	mg/L	2016-10-14	2016-10-14	
Bismuth, total	< 0.0001		0.0001	mg/L	2016-10-14	2016-10-14	
Boron, total	0.030	± 0.006	0.004	mg/L	2016-10-14	2016-10-14	
Cadmium, total	0.00002	± 0.00002	0.00001	mg/L	2016-10-14	2016-10-14	
Calcium, total	67.7	± 8.2	0.2	mg/L	2016-10-14	2016-10-14	
Chromium, total	0.0038	± 0.0005	0.0005	mg/L	2016-10-14	2016-10-14	
Cobalt, total	0.00122	± 0.00011	0.00005	mg/L	2016-10-14	2016-10-14	
Copper, total	0.0044	± 0.0005	0.0002	mg/L	2016-10-14	2016-10-14	
Iron, total	1.91	± 0.38	0.01	mg/L	2016-10-14	2016-10-14	
Lead, total	0.0008	± 0.0001	0.0001	mg/L	2016-10-14	2016-10-14	
Lithium, total	0.0014	± 0.0002	0.0001	mg/L	2016-10-14	2016-10-14	
Magnesium, total	12.6	± 1.9	0.01	mg/L	2016-10-14	2016-10-14	
Manganese, total	0.0848	± 0.0077	0.0002	mg/L	2016-10-14	2016-10-14	
Mercury, total	< 0.00002		0.00002	mg/L	2016-10-16	2016-10-16	
Molybdenum, total	0.0010	± 0.0001	0.0001	mg/L	2016-10-14	2016-10-14	
Nickel, total	0.0062	± 0.0006	0.0002	mg/L	2016-10-14	2016-10-14	
Phosphorus, total	0.05	± 8.82	0.02	mg/L	2016-10-14	2016-10-14	
Potassium, total	1.92	± 0.22	0.02	mg/L	2016-10-14	2016-10-14	
Selenium, total	< 0.0005		0.0005	mg/L	2016-10-14	2016-10-14	
Silicon, total	7.1	± 2.6	0.5	mg/L	2016-10-14	2016-10-14	
Silver, total	< 0.00005		0.00005	mg/L	2016-10-14	2016-10-14	
Sodium, total	25.4	± 3.7	0.02	mg/L	2016-10-14	2016-10-14	
Strontium, total	0.263	± 0.024	0.001	mg/L	2016-10-14	2016-10-14	
Sulfur, total	59	± 835	1	mg/L	2016-10-14	2016-10-14	
Tellurium, total	< 0.0002		0.0002	mg/L	2016-10-14	2016-10-14	
Thallium, total	< 0.00002		0.00002	mg/L	2016-10-14	2016-10-14	

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Sample ID: 1 (6100918-01) [Water] Sampled: 2016-10-14 07:30, Continued

Total Metals, Continued

Thorium, total	< 0.0001		0.0001	mg/L	2016-10-14	2016-10-14	
Tin, total	< 0.0002		0.0002	mg/L	2016-10-14	2016-10-14	
Titanium, total	0.106	± 0.014	0.005	mg/L	2016-10-14	2016-10-14	
Uranium, total	0.00016	± 0.00001	0.00002	mg/L	2016-10-14	2016-10-14	
Vanadium, total	0.005	± 0.001	0.001	mg/L	2016-10-14	2016-10-14	
Zinc, total	0.008	± 0.003	0.004	mg/L	2016-10-14	2016-10-14	
Zirconium, total	0.0007	± 0.0002	0.0001	mg/L	2016-10-14	2016-10-14	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250		250	µg/L	2016-10-14	2016-10-14	
EPHw19-32	< 250		250	µg/L	2016-10-14	2016-10-14	
LEPHw	< 250		250	µg/L	N/A	N/A	
HEPHw	< 250		250	µg/L	N/A	N/A	
<i>Surrogate: 2-Methylnonane</i>	85		60-140	%	2016-10-14	2016-10-14	

Glycols

Propylene glycol	< 5		5	mg/L	N/A	2016-10-14	
Ethylene glycol	< 5		5	mg/L	N/A	2016-10-14	
Diethylene glycol	< 5		5	mg/L	N/A	2016-10-14	
Triethylene glycol	< 5		5	mg/L	N/A	2016-10-14	
<i>Surrogate: Tetramethylene Glycol</i>	90		66-125	%	N/A	2016-10-14	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Acenaphthylene	< 0.20		0.20	µg/L	2016-10-14	2016-10-15	
Acridine	< 0.10		0.10	µg/L	2016-10-14	2016-10-15	
Anthracene	< 0.01		0.01	µg/L	2016-10-14	2016-10-15	
Benz (a) anthracene	< 0.01		0.01	µg/L	2016-10-14	2016-10-15	
Benzo (a) pyrene	< 0.01		0.01	µg/L	2016-10-14	2016-10-15	
Benzo (b) fluoranthene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Benzo (g,h,i) perylene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Benzo (k) fluoranthene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Chrysene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Dibenz (a,h) anthracene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Fluoranthene	< 0.03		0.03	µg/L	2016-10-14	2016-10-15	
Fluorene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Indeno (1,2,3-cd) pyrene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Naphthalene	< 0.20		0.20	µg/L	2016-10-14	2016-10-15	
Phenanthrene	< 0.10		0.10	µg/L	2016-10-14	2016-10-15	
Pyrene	< 0.02		0.02	µg/L	2016-10-14	2016-10-15	
Quinoline	< 0.10		0.10	µg/L	2016-10-14	2016-10-15	
<i>Surrogate: Acridine-d9</i>	79		60-130	%	2016-10-14	2016-10-15	
<i>Surrogate: Naphthalene-d8</i>	95		60-130	%	2016-10-14	2016-10-15	
<i>Surrogate: Perylene-d12</i>	145		60-130	%	2016-10-14	2016-10-15	S02

Volatile Organic Compounds (VOC)

Benzene	< 0.5		0.5	µg/L	N/A	2016-10-14	
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Sample ID: 1 (6100918-01) [Water] Sampled: 2016-10-14 07:30, Continued

Volatile Organic Compounds (VOC), Continued

Bromodichloromethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
Bromoform	< 1.0		1.0	µg/L	N/A	2016-10-14	
Bromomethane	< 2.0		2.0	µg/L	N/A	2016-10-14	
Carbon tetrachloride	< 1.0		1.0	µg/L	N/A	2016-10-14	
Chlorobenzene	< 1.0		1.0	µg/L	N/A	2016-10-14	
Chloroethane	< 2.0		2.0	µg/L	N/A	2016-10-14	
Chloroform	< 1.0		1.0	µg/L	N/A	2016-10-14	
Chloromethane	< 2.0		2.0	µg/L	N/A	2016-10-14	
Dibromochloromethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,2-Dibromoethane	< 0.3		0.3	µg/L	N/A	2016-10-14	
Dibromomethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,2-Dichlorobenzene	< 0.5		0.5	µg/L	N/A	2016-10-14	
1,3-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,4-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1-Dichloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,2-Dichloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-10-14	
cis-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-10-14	
trans-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,2-Dichloropropane	< 1.0		1.0	µg/L	N/A	2016-10-14	
cis-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2016-10-14	
trans-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2016-10-14	
Ethylbenzene	< 1.0		1.0	µg/L	N/A	2016-10-14	
Methyl tert-butyl ether	< 1.0		1.0	µg/L	N/A	2016-10-14	
Methylene chloride	< 3.0		3.0	µg/L	N/A	2016-10-14	
Styrene	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1,1,2-Tetrachloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1,2,2-Tetrachloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
Tetrachloroethene	< 1.0		1.0	µg/L	N/A	2016-10-14	
Toluene	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1,1-Trichloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1,2-Trichloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
Trichloroethene	< 1.0		1.0	µg/L	N/A	2016-10-14	
Trichlorofluoromethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
Vinyl chloride	< 2.0		2.0	µg/L	N/A	2016-10-14	
Xylenes (total)	< 2.0		2.0	µg/L	N/A	2016-10-14	
Surrogate: Toluene-d8	94		70-130	%	N/A	2016-10-14	
Surrogate: 4-Bromofluorobenzene	103		70-130	%	N/A	2016-10-14	
Surrogate: 1,4-Dichlorobenzene-d4	99		70-130	%	N/A	2016-10-14	

Sample ID: 2 (6100918-02) [Water] Sampled: 2016-10-14 07:51

Anions

Chloride	42.8 ± 2.0		0.10	mg/L	N/A	2016-10-15	
Fluoride	< 0.10		0.10	mg/L	N/A	2016-10-15	

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Sample ID: 2 (6100918-02) [Water] Sampled: 2016-10-14 07:51, Continued

Anions, Continued

Nitrate (as N)	1.35	± 0.17	0.010	mg/L	N/A	2016-10-15	
Nitrite (as N)	< 0.010		0.010	mg/L	N/A	2016-10-15	
Sulfate	165	± 20	1.0	mg/L	N/A	2016-10-15	

General Parameters

Alkalinity, Total (as CaCO3)	44	± 3	1	mg/L	2016-10-14	2016-10-16	
Alkalinity, Phenolphthalein (as CaCO3)	< 1		1	mg/L	2016-10-14	2016-10-16	
Alkalinity, Bicarbonate (as CaCO3)	44	± 2	1	mg/L	2016-10-14	2016-10-16	
Alkalinity, Carbonate (as CaCO3)	< 1		1	mg/L	2016-10-14	2016-10-16	
Alkalinity, Hydroxide (as CaCO3)	< 1		1	mg/L	2016-10-14	2016-10-16	
Colour, True	< 5		5	CU	N/A	2016-10-17	
Conductivity (EC)	591	± 9	2	µS/cm	2016-10-14	2016-10-16	
pH	7.51	± 0.03	0.01	pH units	N/A	2016-10-17	HT2
Solids, Total Suspended	6	± 2	2	mg/L	N/A	2016-10-15	
Turbidity	9.95	± 1.25	0.10	NTU	N/A	2016-10-14	

Calculated Parameters

Hardness, Total (as CaCO3)	221		0.50	mg/L	N/A	N/A	
Solids, Total Dissolved	346		10	mg/L	N/A	2016-10-17	

Dissolved Metals

Aluminum, dissolved	0.009	± 0.002	0.005	mg/L	N/A	2016-10-14	
Antimony, dissolved	0.0005	± 0.0001	0.0001	mg/L	N/A	2016-10-14	
Arsenic, dissolved	0.0006	± 0.0001	0.0005	mg/L	N/A	2016-10-14	
Barium, dissolved	0.018	± 0.002	0.005	mg/L	N/A	2016-10-14	
Beryllium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-10-14	
Bismuth, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-10-14	
Boron, dissolved	0.024	± 0.005	0.004	mg/L	N/A	2016-10-14	
Cadmium, dissolved	0.00002	± 0.00001	0.00001	mg/L	N/A	2016-10-14	
Calcium, dissolved	68.4	± 10.5	0.2	mg/L	N/A	2016-10-14	
Chromium, dissolved	0.0006	± 0.0002	0.0005	mg/L	N/A	2016-10-14	
Cobalt, dissolved	0.00041	± 0.00004	0.00005	mg/L	N/A	2016-10-14	
Copper, dissolved	0.0012	± 0.0004	0.0002	mg/L	N/A	2016-10-14	
Iron, dissolved	< 0.010		0.010	mg/L	N/A	2016-10-14	
Lead, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-10-14	
Lithium, dissolved	0.0002	± 0.0001	0.0001	mg/L	N/A	2016-10-14	
Magnesium, dissolved	12.1	± 2.0	0.01	mg/L	N/A	2016-10-14	
Manganese, dissolved	0.0384	± 0.0043	0.0002	mg/L	N/A	2016-10-14	
Mercury, dissolved	< 0.00002		0.00002	mg/L	2016-10-16	2016-10-16	
Molybdenum, dissolved	0.0013	± 0.0001	0.0001	mg/L	N/A	2016-10-14	
Nickel, dissolved	0.0013	± 0.0003	0.0002	mg/L	N/A	2016-10-14	
Phosphorus, dissolved	< 0.02		0.02	mg/L	N/A	2016-10-14	
Potassium, dissolved	1.70	± 0.23	0.02	mg/L	N/A	2016-10-14	
Selenium, dissolved	0.0006	± 0.0002	0.0005	mg/L	N/A	2016-10-14	
Silicon, dissolved	4.1	± 1.8	0.5	mg/L	N/A	2016-10-14	
Silver, dissolved	< 0.00005		0.00005	mg/L	N/A	2016-10-14	

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Sample ID: 2 (6100918-02) [Water] Sampled: 2016-10-14 07:51, Continued

Dissolved Metals, Continued

Sodium, dissolved	22.7	± 3.5	0.02	mg/L	N/A	2016-10-14	
Strontium, dissolved	0.249	± 0.025	0.001	mg/L	N/A	2016-10-14	
Sulfur, dissolved	57	± 839	1	mg/L	N/A	2016-10-14	
Tellurium, dissolved	< 0.0002		0.0002	mg/L	N/A	2016-10-14	
Thallium, dissolved	< 0.00002		0.00002	mg/L	N/A	2016-10-14	
Thorium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-10-14	
Tin, dissolved	< 0.0002		0.0002	mg/L	N/A	2016-10-14	
Titanium, dissolved	< 0.005		0.005	mg/L	N/A	2016-10-14	
Uranium, dissolved	0.00060	± 0.00008	0.00002	mg/L	N/A	2016-10-14	
Vanadium, dissolved	< 0.001		0.001	mg/L	N/A	2016-10-14	
Zinc, dissolved	< 0.004		0.004	mg/L	N/A	2016-10-14	
Zirconium, dissolved	< 0.0001		0.0001	mg/L	N/A	2016-10-14	

Total Metals

Aluminum, total	0.583	± 0.106	0.005	mg/L	2016-10-14	2016-10-14	
Antimony, total	0.0004	± 0.0001	0.0001	mg/L	2016-10-14	2016-10-14	
Arsenic, total	< 0.0005		0.0005	mg/L	2016-10-14	2016-10-14	
Barium, total	0.024	± 0.004	0.005	mg/L	2016-10-14	2016-10-14	
Beryllium, total	< 0.0001		0.0001	mg/L	2016-10-14	2016-10-14	
Bismuth, total	< 0.0001		0.0001	mg/L	2016-10-14	2016-10-14	
Boron, total	0.031	± 0.006	0.004	mg/L	2016-10-14	2016-10-14	
Cadmium, total	0.00002	± 0.00002	0.00001	mg/L	2016-10-14	2016-10-14	
Calcium, total	80.9	± 9.9	0.2	mg/L	2016-10-14	2016-10-14	
Chromium, total	0.0016	± 0.0002	0.0005	mg/L	2016-10-14	2016-10-14	
Cobalt, total	0.00075	± 0.00007	0.00005	mg/L	2016-10-14	2016-10-14	
Copper, total	0.0029	± 0.0004	0.0002	mg/L	2016-10-14	2016-10-14	
Iron, total	0.58	± 0.11	0.01	mg/L	2016-10-14	2016-10-14	
Lead, total	0.0004	± 0.0001	0.0001	mg/L	2016-10-14	2016-10-14	
Lithium, total	0.0005	± 0.0001	0.0001	mg/L	2016-10-14	2016-10-14	
Magnesium, total	13.5	± 2.1	0.01	mg/L	2016-10-14	2016-10-14	
Manganese, total	0.0545	± 0.0049	0.0002	mg/L	2016-10-14	2016-10-14	
Mercury, total	< 0.00002		0.00002	mg/L	2016-10-16	2016-10-16	
Molybdenum, total	0.0015	± 0.0001	0.0001	mg/L	2016-10-14	2016-10-14	
Nickel, total	0.0025	± 0.0003	0.0002	mg/L	2016-10-14	2016-10-14	
Phosphorus, total	0.02	± 3.98	0.02	mg/L	2016-10-14	2016-10-14	
Potassium, total	1.91	± 0.22	0.02	mg/L	2016-10-14	2016-10-14	
Selenium, total	0.0007	± 0.0001	0.0005	mg/L	2016-10-14	2016-10-14	
Silicon, total	5.6	± 2.1	0.5	mg/L	2016-10-14	2016-10-14	
Silver, total	< 0.00005		0.00005	mg/L	2016-10-14	2016-10-14	
Sodium, total	25.1	± 3.7	0.02	mg/L	2016-10-14	2016-10-14	
Strontium, total	0.277	± 0.026	0.001	mg/L	2016-10-14	2016-10-14	
Sulfur, total	63	± 898	1	mg/L	2016-10-14	2016-10-14	
Tellurium, total	< 0.0002		0.0002	mg/L	2016-10-14	2016-10-14	
Thallium, total	< 0.00002		0.00002	mg/L	2016-10-14	2016-10-14	
Thorium, total	< 0.0001		0.0001	mg/L	2016-10-14	2016-10-14	
Tin, total	< 0.0002		0.0002	mg/L	2016-10-14	2016-10-14	

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Sample ID: 2 (6100918-02) [Water] Sampled: 2016-10-14 07:51, Continued

Total Metals, Continued

Titanium, total	0.028	± 0.004	0.005	mg/L	2016-10-14	2016-10-14	
Uranium, total	0.00075	± 0.00005	0.00002	mg/L	2016-10-14	2016-10-14	
Vanadium, total	0.003		0.001	mg/L	2016-10-14	2016-10-14	
Zinc, total	0.005	± 0.002	0.004	mg/L	2016-10-14	2016-10-14	
Zirconium, total	0.0002		0.0001	mg/L	2016-10-14	2016-10-14	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250		250	µg/L	2016-10-14	2016-10-14	
EPHw19-32	< 250		250	µg/L	2016-10-14	2016-10-14	
LEPHw	< 250		250	µg/L	N/A	N/A	
HEPHw	< 250		250	µg/L	N/A	N/A	
Surrogate: 2-Methylnonane	95		60-140	%	2016-10-14	2016-10-14	

Glycols

Propylene glycol	< 5		5	mg/L	N/A	2016-10-14	
Ethylene glycol	< 5		5	mg/L	N/A	2016-10-14	
Diethylene glycol	< 5		5	mg/L	N/A	2016-10-14	
Triethylene glycol	< 5		5	mg/L	N/A	2016-10-14	
Surrogate: Tetramethylene Glycol	107		66-125	%	N/A	2016-10-14	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Acenaphthylene	< 0.20		0.20	µg/L	2016-10-14	2016-10-15	
Acridine	< 0.10		0.10	µg/L	2016-10-14	2016-10-15	
Anthracene	< 0.01		0.01	µg/L	2016-10-14	2016-10-15	
Benz (a) anthracene	< 0.01		0.01	µg/L	2016-10-14	2016-10-15	
Benzo (a) pyrene	< 0.01		0.01	µg/L	2016-10-14	2016-10-15	
Benzo (b) fluoranthene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Benzo (g,h,i) perylene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Benzo (k) fluoranthene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Chrysene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Dibenz (a,h) anthracene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Fluoranthene	< 0.03		0.03	µg/L	2016-10-14	2016-10-15	
Fluorene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Indeno (1,2,3-cd) pyrene	< 0.05		0.05	µg/L	2016-10-14	2016-10-15	
Naphthalene	< 0.20		0.20	µg/L	2016-10-14	2016-10-15	
Phenanthrene	< 0.10		0.10	µg/L	2016-10-14	2016-10-15	
Pyrene	< 0.02		0.02	µg/L	2016-10-14	2016-10-15	
Quinoline	< 0.10		0.10	µg/L	2016-10-14	2016-10-15	
Surrogate: Acridine-d9	87		60-130	%	2016-10-14	2016-10-15	
Surrogate: Naphthalene-d8	109		60-130	%	2016-10-14	2016-10-15	
Surrogate: Perylene-d12	158		60-130	%	2016-10-14	2016-10-15	S02

Volatile Organic Compounds (VOC)

Benzene	< 0.5		0.5	µg/L	N/A	2016-10-14	
Bromodichloromethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
Bromoform	< 1.0		1.0	µg/L	N/A	2016-10-14	

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Sample ID: 2 (6100918-02) [Water] Sampled: 2016-10-14 07:51, Continued

Volatile Organic Compounds (VOC), Continued

Bromomethane	< 2.0		2.0	µg/L	N/A	2016-10-14	
Carbon tetrachloride	< 1.0		1.0	µg/L	N/A	2016-10-14	
Chlorobenzene	< 1.0		1.0	µg/L	N/A	2016-10-14	
Chloroethane	< 2.0		2.0	µg/L	N/A	2016-10-14	
Chloroform	< 1.0		1.0	µg/L	N/A	2016-10-14	
Chloromethane	< 2.0		2.0	µg/L	N/A	2016-10-14	
Dibromochloromethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,2-Dibromoethane	< 0.3		0.3	µg/L	N/A	2016-10-14	
Dibromomethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,2-Dichlorobenzene	< 0.5		0.5	µg/L	N/A	2016-10-14	
1,3-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,4-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1-Dichloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,2-Dichloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-10-14	
cis-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-10-14	
trans-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,2-Dichloropropane	< 1.0		1.0	µg/L	N/A	2016-10-14	
cis-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2016-10-14	
trans-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2016-10-14	
Ethylbenzene	< 1.0		1.0	µg/L	N/A	2016-10-14	
Methyl tert-butyl ether	< 1.0		1.0	µg/L	N/A	2016-10-14	
Methylene chloride	< 3.0		3.0	µg/L	N/A	2016-10-14	
Styrene	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1,1,2-Tetrachloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1,2,2-Tetrachloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
Tetrachloroethene	< 1.0		1.0	µg/L	N/A	2016-10-14	
Toluene	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1,1-Trichloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
1,1,2-Trichloroethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
Trichloroethene	< 1.0		1.0	µg/L	N/A	2016-10-14	
Trichlorofluoromethane	< 1.0		1.0	µg/L	N/A	2016-10-14	
Vinyl chloride	< 2.0		2.0	µg/L	N/A	2016-10-14	
Xylenes (total)	< 2.0		2.0	µg/L	N/A	2016-10-14	
Surrogate: Toluene-d8	103		70-130	%	N/A	2016-10-14	
Surrogate: 4-Bromofluorobenzene	102		70-130	%	N/A	2016-10-14	
Surrogate: 1,4-Dichlorobenzene-d4	98		70-130	%	N/A	2016-10-14	

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.

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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 B6J0896									
Blank (B6J0896-BLK1) Prepared: 2016-10-15, Analyzed: 2016-10-15									
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 (B6J0896-BS1) Prepared: 2016-10-15, Analyzed: 2016-10-15									
Chloride	16.4	0.10 mg/L	16.0		103	90-110			
Fluoride	3.77	0.10 mg/L	4.00		94	88-108			
Nitrate (as N)	4.19	0.010 mg/L	4.00		105	93-108			
Nitrite (as N)	1.97	0.010 mg/L	2.00		99	83-110			
Sulfate	16.0	1.0 mg/L	16.0		100	91-109			
Duplicate (B6J0896-DUP1) Prepared: 2016-10-15, Analyzed: 2016-10-15									
Chloride	1.99	mg/L					200	10	
Fluoride	< 0.10	mg/L						10	
Nitrate (as N)	0.061	mg/L					200	10	
Nitrite (as N)	< 0.010	mg/L						6	
Sulfate	11.2	mg/L					200	6	
Matrix Spike (B6J0896-MS1) Prepared: 2016-10-15, Analyzed: 2016-10-15									
Chloride	18.1	0.10 mg/L	16.0		113	75-125			
Fluoride	3.72	0.10 mg/L	4.00		93	75-125			
Nitrate (as N)	4.21	0.010 mg/L	4.00		105	75-125			
Nitrite (as N)	1.97	0.010 mg/L	2.00		99	75-125			
Sulfate	25.3	1.0 mg/L	16.0		158	75-125			
BCMOE Aggregate Hydrocarbons, Batch B6J0840									
Blank (B6J0840-BLK1) Prepared: 2016-10-14, Analyzed: 2016-10-14									
EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							

APPENDIX 1: QUALITY CONTROL DATA

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
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BCMOE Aggregate Hydrocarbons, Batch B6J0840, Continued

Blank (B6J0840-BLK1), Continued

Prepared: 2016-10-14, Analyzed: 2016-10-14

Surrogate: 2-Methylnonane	352	µg/L	444		79	60-140			
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LCS (B6J0840-BS2)

Prepared: 2016-10-14, Analyzed: 2016-10-15

EPHw10-19	17100	250 µg/L	15400		111	70-130			
EPHw19-32	19800	250 µg/L	22200		89	70-130			
Surrogate: 2-Methylnonane	502	µg/L	444		113	60-140			

Dissolved Metals, Batch B6J0882

Blank (B6J0882-BLK1)

Prepared: 2016-10-14, Analyzed: 2016-10-14

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 (B6J0882-SRM1)

Prepared: 2016-10-14, Analyzed: 2016-10-14

Aluminum, dissolved	0.247	0.005 mg/L	0.233		106	58-142			
Antimony, dissolved	0.0489	0.0001 mg/L	0.0430		114	75-125			
Arsenic, dissolved	0.503	0.0005 mg/L	0.438		115	81-119			
Barium, dissolved	3.51	0.005 mg/L	3.35		105	83-117			
Beryllium, dissolved	0.207	0.0001 mg/L	0.213		97	80-120			
Boron, dissolved	1.44	0.004 mg/L	1.74		83	74-117			
Cadmium, dissolved	0.229	0.00001 mg/L	0.224		102	83-117			
Calcium, dissolved	7.6	0.2 mg/L	7.69		98	76-124			

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
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Dissolved Metals, Batch B6J0882, Continued

Reference (B6J0882-SRM1), Continued

Prepared: 2016-10-14, Analyzed: 2016-10-14

Chromium, dissolved	0.463	0.0005 mg/L	0.437		106	81-119			
Cobalt, dissolved	0.138	0.00005 mg/L	0.128		108	76-124			
Copper, dissolved	0.902	0.0002 mg/L	0.844		107	84-116			
Iron, dissolved	1.37	0.010 mg/L	1.29		106	74-126			
Lead, dissolved	0.110	0.0001 mg/L	0.112		98	72-128			
Lithium, dissolved	0.0971	0.0001 mg/L	0.104		93	60-140			
Magnesium, dissolved	7.35	0.01 mg/L	6.92		106	81-119			
Manganese, dissolved	0.365	0.0002 mg/L	0.345		106	84-116			
Molybdenum, dissolved	0.435	0.0001 mg/L	0.426		102	83-117			
Nickel, dissolved	0.900	0.0002 mg/L	0.840		107	74-126			
Phosphorus, dissolved	0.59	0.02 mg/L	0.495		120	68-132			
Potassium, dissolved	3.47	0.02 mg/L	3.19		109	74-126			
Selenium, dissolved	0.0331	0.0005 mg/L	0.0331		100	70-130			
Sodium, dissolved	19.9	0.02 mg/L	19.1		104	72-128			
Strontium, dissolved	0.955	0.001 mg/L	0.916		104	84-113			
Thallium, dissolved	0.0378	0.00002 mg/L	0.0393		96	57-143			
Uranium, dissolved	0.248	0.00002 mg/L	0.266		93	85-115			
Vanadium, dissolved	0.919	0.001 mg/L	0.869		106	87-113			
Zinc, dissolved	0.999	0.004 mg/L	0.881		113	72-128			

Dissolved Metals, Batch B6J0937

Blank (B6J0937-BLK1)

Prepared: 2016-10-16, Analyzed: 2016-10-16

Mercury, dissolved	< 0.00002	0.00002 mg/L							
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Duplicate (B6J0937-DUP1)

Source: 6100918-01

Prepared: 2016-10-16, Analyzed: 2016-10-16

Mercury, dissolved	< 0.00002	0.00002 mg/L		< 0.00002				20	
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Matrix Spike (B6J0937-MS1)

Source: 6100918-02

Prepared: 2016-10-16, Analyzed: 2016-10-16

Mercury, dissolved	0.00023	0.00002 mg/L	0.000250	< 0.00002	94	70-130			
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Reference (B6J0937-SRM1)

Prepared: 2016-10-16, Analyzed: 2016-10-16

Mercury, dissolved	0.00458	0.00002 mg/L	0.00486		94	50-150			
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General Parameters, Batch B6J0885

Blank (B6J0885-BLK1)

Prepared: 2016-10-14, Analyzed: 2016-10-16

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							

Blank (B6J0885-BLK2)

Prepared: 2016-10-16, Analyzed: 2016-10-16

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							

Blank (B6J0885-BLK3)

Prepared: 2016-10-16, Analyzed: 2016-10-16

Alkalinity, Total (as CaCO3)	< 1	1 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	1 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	1 mg/L							

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B6J0885, Continued									
Blank (B6J0885-BLK3), Continued			Prepared: 2016-10-16, Analyzed: 2016-10-16						
Alkalinity, Carbonate (as CaCO ₃)	< 1	1 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1	1 mg/L							
Conductivity (EC)	< 2	2 µS/cm							
LCS (B6J0885-BS1)			Prepared: 2016-10-14, Analyzed: 2016-10-16						
Alkalinity, Total (as CaCO ₃)	104	1 mg/L	100		104	96-108			
LCS (B6J0885-BS2)			Prepared: 2016-10-14, Analyzed: 2016-10-16						
Conductivity (EC)	1400	2 µS/cm	1410		99	95-104			
LCS (B6J0885-BS3)			Prepared: 2016-10-16, Analyzed: 2016-10-16						
Alkalinity, Total (as CaCO ₃)	102	1 mg/L	100		102	96-108			
LCS (B6J0885-BS4)			Prepared: 2016-10-16, Analyzed: 2016-10-16						
Conductivity (EC)	1410	2 µS/cm	1410		100	95-104			
LCS (B6J0885-BS5)			Prepared: 2016-10-16, Analyzed: 2016-10-16						
Alkalinity, Total (as CaCO ₃)	103	1 mg/L	100		103	96-108			
LCS (B6J0885-BS6)			Prepared: 2016-10-16, Analyzed: 2016-10-16						
Conductivity (EC)	1420	2 µS/cm	1410		101	95-104			
General Parameters, Batch B6J0887									
Blank (B6J0887-BLK1)			Prepared: 2016-10-14, Analyzed: 2016-10-14						
Turbidity	< 0.10	0.10 NTU							
LCS (B6J0887-BS1)			Prepared: 2016-10-14, Analyzed: 2016-10-14						
Turbidity	11.2	0.10 NTU	10.0		112	82-115			
General Parameters, Batch B6J0907									
Blank (B6J0907-BLK1)			Prepared: 2016-10-15, Analyzed: 2016-10-15						
Solids, Total Suspended	< 2	2 mg/L							
LCS (B6J0907-BS1)			Prepared: 2016-10-15, Analyzed: 2016-10-15						
Solids, Total Suspended	47	2 mg/L	51.4		91	83-107			
General Parameters, Batch B6J0955									
Reference (B6J0955-SRM1)			Prepared: 2016-10-17, Analyzed: 2016-10-17						
pH	7.06	0.01 pH units	7.02		101	98-102			
Reference (B6J0955-SRM2)			Prepared: 2016-10-17, Analyzed: 2016-10-17						
pH	7.06	0.01 pH units	7.02		101	98-102			
General Parameters, Batch B6J0959									
Blank (B6J0959-BLK1)			Prepared: 2016-10-17, Analyzed: 2016-10-17						
Colour, True	< 5	5 CU							
LCS (B6J0959-BS1)			Prepared: 2016-10-17, Analyzed: 2016-10-17						
Colour, True	10	5 CU	10.0		100	85-115			

Glycols, Batch B6J0862

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Glycols, Batch B6J0862, Continued									
Blank (B6J0862-BLK1)			Prepared: 2016-10-14, Analyzed: 2016-10-14						
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	94.3	mg/L	95.6		99	66-125			
LCS (B6J0862-BS1)			Prepared: 2016-10-14, Analyzed: 2016-10-14						
Propylene glycol	58	5 mg/L	50.0		115	71-114			SPK1
Ethylene glycol	49	5 mg/L	49.9		98	82-124			
Diethylene glycol	51	5 mg/L	50.0		102	80-116			
Triethylene glycol	48	5 mg/L	49.8		96	73-120			
Surrogate: Tetramethylene Glycol	101	mg/L	95.6		106	66-125			
LCS Dup (B6J0862-BSD1)			Prepared: 2016-10-14, Analyzed: 2016-10-14						
Propylene glycol	53	5 mg/L	50.0		105	71-114	9	20	
Ethylene glycol	51	5 mg/L	49.9		103	82-124	5	20	
Diethylene glycol	52	5 mg/L	50.0		103	80-116	1	20	
Triethylene glycol	52	5 mg/L	49.8		105	73-120	8	20	
Surrogate: Tetramethylene Glycol	98.7	mg/L	95.6		103	66-125			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B6J0840									
Blank (B6J0840-BLK1)			Prepared: 2016-10-14, Analyzed: 2016-10-15						
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							
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	< 0.10	0.10 µg/L							
Surrogate: Acridine-d9	3.68	µg/L	4.44		83	60-130			
Surrogate: Naphthalene-d8	4.53	µg/L	4.44		102	60-130			
Surrogate: Perylene-d12	6.75	µg/L	4.44		152	60-130			S02
LCS (B6J0840-BS1)			Prepared: 2016-10-14, Analyzed: 2016-10-15						
Acenaphthene	4.82	0.05 µg/L	4.44		108	70-130			
Acenaphthylene	4.59	0.20 µg/L	4.44		103	70-130			
Acridine	4.37	0.10 µg/L	4.44		98	60-130			
Anthracene	4.89	0.01 µg/L	4.44		110	70-130			
Benz (a) anthracene	4.94	0.01 µg/L	4.44		111	70-130			
Benzo (a) pyrene	5.13	0.01 µg/L	4.44		115	70-130			
Benzo (b) fluoranthene	5.09	0.05 µg/L	4.44		115	70-130			
Benzo (g,h,i) perylene	5.32	0.05 µg/L	4.44		120	70-130			
Benzo (k) fluoranthene	4.87	0.05 µg/L	4.44		109	70-130			
Chrysene	5.07	0.05 µg/L	4.44		114	70-130			

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
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Polycyclic Aromatic Hydrocarbons (PAH), Batch B6J0840, Continued

LCS (B6J0840-BS1), Continued

Prepared: 2016-10-14, Analyzed: 2016-10-15

Dibenz (a,h) anthracene	5.73	0.05 µg/L	4.44		129	70-130			
Fluoranthene	5.30	0.03 µg/L	4.44		119	70-130			
Fluorene	4.57	0.05 µg/L	4.44		103	70-130			
Indeno (1,2,3-cd) pyrene	4.98	0.05 µg/L	4.44		112	70-130			
Naphthalene	4.97	0.20 µg/L	4.44		112	70-130			
Phenanthrene	5.31	0.10 µg/L	4.44		119	70-130			
Pyrene	5.26	0.02 µg/L	4.44		118	70-130			
Quinoline	4.62	0.10 µg/L	4.44		104	70-130			
Surrogate: Acridine-d9	4.07	µg/L	4.44		91	60-130			
Surrogate: Naphthalene-d8	4.82	µg/L	4.44		108	60-130			
Surrogate: Perylene-d12	6.28	µg/L	4.44		141	60-130			S02

LCS Dup (B6J0840-BSD1)

Prepared: 2016-10-14, Analyzed: 2016-10-15

Acenaphthene	4.69	0.05 µg/L	4.44		105	70-130	3	20	
Acenaphthylene	4.51	0.20 µg/L	4.44		101	70-130	2	20	
Acridine	4.43	0.10 µg/L	4.44		100	60-130	1	20	
Anthracene	4.84	0.01 µg/L	4.44		109	70-130	< 1	20	
Benz (a) anthracene	5.02	0.01 µg/L	4.44		113	70-130	2	20	
Benzo (a) pyrene	4.68	0.01 µg/L	4.44		105	70-130	9	20	
Benzo (b) fluoranthene	5.34	0.05 µg/L	4.44		120	70-130	5	20	
Benzo (g,h,i) perylene	5.66	0.05 µg/L	4.44		127	70-130	6	20	
Benzo (k) fluoranthene	5.54	0.05 µg/L	4.44		125	70-130	13	20	
Chrysene	5.23	0.05 µg/L	4.44		118	70-130	3	20	
Dibenz (a,h) anthracene	5.09	0.05 µg/L	4.44		115	70-130	12	20	
Fluoranthene	4.69	0.03 µg/L	4.44		105	70-130	12	20	
Fluorene	4.52	0.05 µg/L	4.44		102	70-130	1	20	
Indeno (1,2,3-cd) pyrene	5.20	0.05 µg/L	4.44		117	70-130	4	20	
Naphthalene	4.82	0.20 µg/L	4.44		108	70-130	3	20	
Phenanthrene	5.20	0.10 µg/L	4.44		117	70-130	2	20	
Pyrene	4.99	0.02 µg/L	4.44		112	70-130	5	20	
Quinoline	4.64	0.10 µg/L	4.44		104	70-130	< 1	20	
Surrogate: Acridine-d9	3.96	µg/L	4.44		89	60-130			
Surrogate: Naphthalene-d8	4.62	µg/L	4.44		104	60-130			
Surrogate: Perylene-d12	6.11	µg/L	4.44		138	60-130			S02

Total Metals, Batch B6J0856

Blank (B6J0856-BLK1)

Prepared: 2016-10-14, Analyzed: 2016-10-14

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							

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Metals, Batch B6J0856, Continued									
Blank (B6J0856-BLK1), Continued					Prepared: 2016-10-14, Analyzed: 2016-10-14				
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 (B6J0856-MS1)			Source: 6100918-01		Prepared: 2016-10-14, Analyzed: 2016-10-14				
Antimony, total	0.410	0.0001 mg/L	0.400	0.0004	102	84-125			
Arsenic, total	0.219	0.0005 mg/L	0.200	0.0006	109	85-116			
Barium, total	1.03	0.005 mg/L	1.00	0.027	100	87-114			
Beryllium, total	0.0939	0.0001 mg/L	0.100	< 0.0001	94	72-116			
Cadmium, total	0.0990	0.00001 mg/L	0.100	0.00002	99	90-112			
Chromium, total	0.412	0.0005 mg/L	0.400	0.0038	102	89-120			
Cobalt, total	0.411	0.00005 mg/L	0.400	0.00122	102	88-120			
Copper, total	0.425	0.0002 mg/L	0.400	0.0044	105	88-125			
Iron, total	3.71	0.01 mg/L	2.00	1.91	90	88-119			
Lead, total	0.197	0.0001 mg/L	0.200	0.0008	98	89-118			
Manganese, total	0.473	0.0002 mg/L	0.400	0.0848	97	84-120			
Nickel, total	0.415	0.0002 mg/L	0.400	0.0062	102	87-119			
Selenium, total	0.101	0.0005 mg/L	0.100	< 0.0005	100	85-113			
Silver, total	0.0990	0.00005 mg/L	0.100	< 0.00005	99	89-119			
Thallium, total	0.0971	0.00002 mg/L	0.100	< 0.00002	97	92-119			
Vanadium, total	0.404	0.001 mg/L	0.400	0.005	100	87-117			
Zinc, total	1.08	0.004 mg/L	1.00	0.008	107	85-116			
Reference (B6J0856-SRM1)			Prepared: 2016-10-14, Analyzed: 2016-10-14						
Aluminum, total	0.296	0.005 mg/L	0.303		98	81-129			
Antimony, total	0.0511	0.0001 mg/L	0.0511		100	88-114			
Arsenic, total	0.125	0.0005 mg/L	0.118		106	88-114			
Barium, total	0.781	0.005 mg/L	0.823		95	72-104			
Beryllium, total	0.0451	0.0001 mg/L	0.0496		91	76-131			
Boron, total	2.83	0.004 mg/L	3.45		82	75-121			
Cadmium, total	0.0484	0.00001 mg/L	0.0495		98	89-111			
Calcium, total	10.4	0.2 mg/L	11.6		90	86-121			
Chromium, total	0.249	0.0005 mg/L	0.250		99	89-114			
Cobalt, total	0.0390	0.00005 mg/L	0.0377		103	91-113			
Copper, total	0.510	0.0002 mg/L	0.486		105	91-115			
Iron, total	0.50	0.01 mg/L	0.488		103	77-124			
Lead, total	0.188	0.0001 mg/L	0.204		92	92-113			
Lithium, total	0.344	0.0001 mg/L	0.403		85	85-115			
Magnesium, total	3.80	0.01 mg/L	3.79		100	78-120			
Manganese, total	0.106	0.0002 mg/L	0.109		98	90-114			
Molybdenum, total	0.190	0.0001 mg/L	0.198		96	90-111			
Nickel, total	0.252	0.0002 mg/L	0.249		101	90-111			

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Metals, Batch B6J0856, Continued									
Reference (B6J0856-SRM1), Continued					Prepared: 2016-10-14, Analyzed: 2016-10-14				
Phosphorus, total	0.24	0.02 mg/L	0.227		104	85-115			
Potassium, total	7.30	0.02 mg/L	7.21		101	84-113			
Selenium, total	0.120	0.0005 mg/L	0.121		99	85-115			
Sodium, total	7.54	0.02 mg/L	7.54		100	82-123			
Strontium, total	0.368	0.001 mg/L	0.375		98	88-112			
Thallium, total	0.0758	0.00002 mg/L	0.0805		94	91-114			
Uranium, total	0.0274	0.00002 mg/L	0.0306		90	85-120			
Vanadium, total	0.380	0.001 mg/L	0.386		98	86-111			
Zinc, total	2.64	0.004 mg/L	2.49		106	85-111			

Total Metals, Batch B6J0938

Blank (B6J0938-BLK1)					Prepared: 2016-10-16, Analyzed: 2016-10-16				
Mercury, total	< 0.00002	0.00002 mg/L							
Reference (B6J0938-SRM1)					Prepared: 2016-10-16, Analyzed: 2016-10-16				
Mercury, total	0.00465	0.00002 mg/L	0.00486		96	50-150			

Volatile Organic Compounds (VOC), Batch B6J0769

Blank (B6J0769-BLK1)					Prepared: 2016-10-13, Analyzed: 2016-10-13				
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	< 1.0	1.0 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							

APPENDIX 1: QUALITY CONTROL DATA

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 6100918
2016-10-17

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B6J0769, Continued									
Blank (B6J0769-BLK1), Continued					Prepared: 2016-10-13, Analyzed: 2016-10-13				
Vinyl chloride	< 2.0	2.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	24.2	µg/L	25.0		97	70-130			
Surrogate: 4-Bromofluorobenzene	24.9	µg/L	25.0		100	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	24.6	µg/L	25.0		98	70-130			
LCS (B6J0769-BS1)					Prepared: 2016-10-13, Analyzed: 2016-10-13				
Benzene	20.2	0.5 µg/L	20.0		101	70-130			
Bromodichloromethane	22.2	1.0 µg/L	20.0		111	70-130			
Bromoform	15.1	1.0 µg/L	20.0		75	70-130			
Bromomethane	25.2	2.0 µg/L	20.0		126	70-130			
Carbon tetrachloride	20.9	1.0 µg/L	20.0		105	70-130			
Chlorobenzene	21.8	1.0 µg/L	20.0		109	70-130			
Chloroethane	22.0	2.0 µg/L	20.0		110	70-130			
Chloroform	21.9	1.0 µg/L	20.0		109	70-130			
Chloromethane	21.2	2.0 µg/L	20.0		106	70-130			
Dibromochloromethane	19.2	1.0 µg/L	20.0		96	70-130			
1,2-Dibromoethane	19.8	0.3 µg/L	20.0		99	70-130			
Dibromomethane	16.8	1.0 µg/L	20.0		84	70-130			
1,2-Dichlorobenzene	23.2	0.5 µg/L	20.0		116	70-130			
1,3-Dichlorobenzene	25.6	1.0 µg/L	20.0		128	70-130			
1,4-Dichlorobenzene	25.6	1.0 µg/L	20.0		128	70-130			
1,1-Dichloroethane	21.9	1.0 µg/L	20.0		109	70-130			
1,2-Dichloroethane	16.8	1.0 µg/L	20.0		84	70-130			
1,1-Dichloroethene	21.1	1.0 µg/L	20.0		106	70-130			
cis-1,2-Dichloroethene	24.7	1.0 µg/L	20.0		123	70-130			
trans-1,2-Dichloroethene	25.9	1.0 µg/L	20.0		130	70-130			
1,2-Dichloropropane	21.6	1.0 µg/L	20.0		108	70-130			
cis-1,3-Dichloropropene	20.0	1.0 µg/L	20.0		100	70-130			
trans-1,3-Dichloropropene	18.4	1.0 µg/L	20.0		92	70-130			
Ethylbenzene	19.0	1.0 µg/L	20.0		95	70-130			
Methyl tert-butyl ether	15.7	1.0 µg/L	20.0		78	70-130			
Methylene chloride	24.6	3.0 µg/L	20.0		123	70-130			
Styrene	17.5	1.0 µg/L	20.0		88	70-130			
1,1,1,2-Tetrachloroethane	22.0	1.0 µg/L	20.0		110	70-130			
1,1,2,2-Tetrachloroethane	15.1	1.0 µg/L	20.0		76	70-130			
Tetrachloroethene	20.8	1.0 µg/L	20.0		104	70-130			
Toluene	19.7	1.0 µg/L	20.0		98	70-130			
1,1,1-Trichloroethane	21.3	1.0 µg/L	20.0		106	70-130			
1,1,2-Trichloroethane	20.9	1.0 µg/L	20.0		105	70-130			
Trichloroethene	25.9	1.0 µg/L	20.0		129	70-130			
Trichlorofluoromethane	23.9	1.0 µg/L	20.0		120	70-130			
Vinyl chloride	22.7	2.0 µg/L	20.0		113	70-130			
Xylenes (total)	57.6	2.0 µg/L	60.0		96	70-130			
Surrogate: Toluene-d8	22.6	µg/L	25.0		90	70-130			
Surrogate: 4-Bromofluorobenzene	24.5	µg/L	25.0		98	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	24.5	µg/L	25.0		98	70-130			

QC Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
 SPK1 The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 6100918
2016-10-17

		6100918-01	6100918-02
		Water	Water
		2016-10-14	2016-10-14
		1	2
Anions	Chloride (mg/L)	42.3	42.8
	Fluoride (mg/L)	< 0.10	< 0.10
	Nitrate (as N) (mg/L)	1.02	1.35
	Nitrite (as N) (mg/L)	< 0.010	< 0.010
	Sulfate (mg/L)	149	165
General Parameters	Alkalinity, Total (as CaCO3) (mg/L)	25	44
	Alkalinity, Phenolphthalein (as CaCO3) (mg/	< 1	< 1
	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	25	44
	Alkalinity, Carbonate (as CaCO3) (mg/L)	< 1	< 1
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	< 1	< 1
	Colour, True (CU)	< 5	< 5
	Conductivity (EC) (uS/cm)	528	591
	pH (pH units)	7.54	7.51
	Solids, Total Suspended (mg/L)	13	6
	Turbidity (NTU)	21.1	9.95
Calculated Parameters	Hardness, Total (as CaCO3) (mg/L)	187	221
	Solids, Total Dissolved (mg/L)	304	346
Dissolved Metals	Aluminum, dissolved (mg/L)	0.006	0.009
	Antimony, dissolved (mg/L)	0.0008	0.0005
	Arsenic, dissolved (mg/L)	0.0013	0.0006
	Barium, dissolved (mg/L)	0.014	0.018
	Beryllium, dissolved (mg/L)	< 0.0001	< 0.0001
	Bismuth, dissolved (mg/L)	< 0.0001	< 0.0001
	Boron, dissolved (mg/L)	0.025	0.024
	Cadmium, dissolved (mg/L)	0.00004	0.00002
	Calcium, dissolved (mg/L)	58.0	68.4
	Chromium, dissolved (mg/L)	0.0006	0.0006
	Cobalt, dissolved (mg/L)	0.00039	0.00041
	Copper, dissolved (mg/L)	0.0010	0.0012
	Iron, dissolved (mg/L)	< 0.010	< 0.010
	Lead, dissolved (mg/L)	< 0.0001	< 0.0001
	Lithium, dissolved (mg/L)	0.0003	0.0002
	Magnesium, dissolved (mg/L)	10.3	12.1
	Manganese, dissolved (mg/L)	0.0538	0.0384
	Mercury, dissolved (mg/L)	< 0.00002	< 0.00002
	Molybdenum, dissolved (mg/L)	0.0009	0.0013
	Nickel, dissolved (mg/L)	0.0019	0.0013
	Phosphorus, dissolved (mg/L)	< 0.02	< 0.02
	Potassium, dissolved (mg/L)	1.52	1.70
	Selenium, dissolved (mg/L)	< 0.0005	0.0006
	Silicon, dissolved (mg/L)	3.0	4.1
	Silver, dissolved (mg/L)	< 0.00005	< 0.00005
	Sodium, dissolved (mg/L)	23.4	22.7
	Strontium, dissolved (mg/L)	0.233	0.249

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 6100918
2016-10-17

		6100918-01	6100918-02
		Water	Water
		2016-10-14	2016-10-14
		1	2
Dissolved Metals	Sulfur, dissolved (mg/L)	51	57
	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)	0.00012	0.00060
	Vanadium, dissolved (mg/L)	< 0.001	< 0.001
	Zinc, dissolved (mg/L)	< 0.004	< 0.004
	Zirconium, dissolved (mg/L)	< 0.0001	< 0.0001
Total Metals	Aluminum, total (mg/L)	1.93	0.583
	Antimony, total (mg/L)	0.0004	0.0004
	Arsenic, total (mg/L)	0.0006	< 0.0005
	Barium, total (mg/L)	0.027	0.024
	Beryllium, total (mg/L)	< 0.0001	< 0.0001
	Bismuth, total (mg/L)	< 0.0001	< 0.0001
	Boron, total (mg/L)	0.030	0.031
	Cadmium, total (mg/L)	0.00002	0.00002
	Calcium, total (mg/L)	67.7	80.9
	Chromium, total (mg/L)	0.0038	0.0016
	Cobalt, total (mg/L)	0.00122	0.00075
	Copper, total (mg/L)	0.0044	0.0029
	Iron, total (mg/L)	1.91	0.58
	Lead, total (mg/L)	0.0008	0.0004
	Lithium, total (mg/L)	0.0014	0.0005
	Magnesium, total (mg/L)	12.6	13.5
	Manganese, total (mg/L)	0.0848	0.0545
	Mercury, total (mg/L)	< 0.00002	< 0.00002
	Molybdenum, total (mg/L)	0.0010	0.0015
	Nickel, total (mg/L)	0.0062	0.0025
	Phosphorus, total (mg/L)	0.05	0.02
	Potassium, total (mg/L)	1.92	1.91
	Selenium, total (mg/L)	< 0.0005	0.0007
	Silicon, total (mg/L)	7.1	5.6
	Silver, total (mg/L)	< 0.00005	< 0.00005
	Sodium, total (mg/L)	25.4	25.1
	Strontium, total (mg/L)	0.263	0.277
	Sulfur, total (mg/L)	59	63
	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)	0.106	0.028
Uranium, total (mg/L)	0.00016	0.00075	
Vanadium, total (mg/L)	0.005	0.003	

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 6100918
2016-10-17

		6100918-01	6100918-02
		Water	Water
		2016-10-14	2016-10-14
		1	2
Total Metals	Zinc, total (mg/L)	0.008	0.005
	Zirconium, total (mg/L)	0.0007	0.0002
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 (%)	85	95
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 (%)	90	107
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)	< 0.10	< 0.10
	Sur: Acridine-d9 (%)	79	87
	Sur: Naphthalene-d8 (%)	95	109
Sur: Perylene-d12 (%)	145	158	
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
	1,2-Dibromoethane (ug/L)	< 0.3	< 0.3
	Dibromomethane (ug/L)	< 1.0	< 1.0

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 6100918
2016-10-17

		6100918-01	6100918-02
		Water	Water
		2016-10-14	2016-10-14
		1	2
Volatile Organic Compounds (VOC)	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 (%)	94	103
	Sur: 4-Bromofluorobenzene (%)	103	102
	Sur: 1,4-Dichlorobenzene-d4 (%)	99	98

Client Information Allterra Construction 2158 Millstream Road Victoria BC V9B 6H4 Phone: (250) 508-0726	Project Information SIRM 460 Stebbings Number: [none] Sample count: 2 TAT: 1	Laboratory Information CARO Analytical Services #110 - 4011 Viking Way Richmond BC V6V 2K9 Phone: (604) 279-1499 Fax: (604) 279-1599	COC Information Number: B33060 Shipped via: Harbour Air
----------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------

#1	1 (Template: 01) 10/14/2016 07:30 Grab / Water	<p style="text-align: center;">Analyses</p> Alkalinity, all (KEL) TAT: 1 Anions in Water by IC, 5 Analytes (KEL) TAT: 1 Colour, True - 456 nm (KEL) TAT: 1 Conductivity in Water (KEL) TAT: 1 Glycols in Water (RMD) TAT: 1 L/HEPH in Water (RMD) TAT: 1 Mercury, diss CVAFS Reg & Low (RMD) TAT: 1 Mercury, total CVAFS Reg & Low (RMD) TAT: 1 Metals, dissolved, All, Low (RMD) TAT: 1 Metals, total, All, Low (RMD) TAT: 1 pH in Water (KEL) TAT: 1 Solids, Total Dissolved (KEL) TAT: 1 Solids, Total Suspended (KEL) TAT: 1 Turbidity (KEL) TAT: 1 VOC in Water (RMD) TAT: 1	<p style="text-align: center;">Containers</p> C03_250 mL Glass (EPH/PAH) C04_40 mL Vial (VOC Water) C05_125 mL Plastic (Metals) C06_40 mL Vial (Mercury) C10_125 mL Plastic (H2SO4) C11_1 L Plastic (General) C19_40 mL Vial (General CG) S05_125 mL Plastic (Metals-F) S06_40 mL Vial (Mercury-F)
Comments: Weir			
#2	2 (Template: 01) 10/14/2016 07:51 Grab / Water	<p style="text-align: center;">Analyses</p> Alkalinity, all (KEL) TAT: 1 Anions in Water by IC, 5 Analytes (KEL) TAT: 1 Colour, True - 456 nm (KEL) TAT: 1 Conductivity in Water (KEL) TAT: 1 Glycols in Water (RMD) TAT: 1 L/HEPH in Water (RMD) TAT: 1 Mercury, diss CVAFS Reg & Low (RMD) TAT: 1 Mercury, total CVAFS Reg & Low (RMD) TAT: 1 Metals, dissolved, All, Low (RMD) TAT: 1 Metals, total, All, Low (RMD) TAT: 1 pH in Water (KEL) TAT: 1 Solids, Total Dissolved (KEL) TAT: 1 Solids, Total Suspended (KEL) TAT: 1 Turbidity (KEL) TAT: 1 VOC in Water (RMD) TAT: 1	<p style="text-align: center;">Containers</p> C03_250 mL Glass (EPH/PAH) C04_40 mL Vial (VOC Water) C05_125 mL Plastic (Metals) C06_40 mL Vial (Mercury) C10_125 mL Plastic (H2SO4) C11_1 L Plastic (General) C19_40 mL Vial (General CG) S05_125 mL Plastic (Metals-F) S06_40 mL Vial (Mercury-F)
Comments: SW-1			

Relinquished by	Date/Time	Accepted by	Date/Time

Client Information	Project Information	Laboratory Information	COC Information
Allterra Construction 2158 Millstream Road Victoria BC V9B 6H4 Phone: (250) 508-0726	SIRM 460 Stebbings Number: [none] Sample count: 2 TAT: 1	CARO Analytical Services #110 - 4011 Viking Way Richmond BC V6V 2K9 Phone: (604) 279-1499 Fax: (604) 279-1599	Number: B33060 Shipped via: Harbour Air

#1	Analyses	Containers
1 (Template: 01) 10/14/2016 07:30 Grab / Water	Alkalinity, all (KEL) TAT: 1 Anions in Water by IC, 5 Analytes (KEL) TAT: 1 Colour, True - 456 nm (KEL) TAT: 1 Conductivity in Water (KEL) TAT: 1 Glycols in Water (RMD) TAT: 1 L/HEPH in Water (RMD) TAT: 1 Mercury, diss CVAFS Reg & Low (RMD) TAT: 1 Mercury, total CVAFS Reg & Low (RMD) TAT: 1 Metals, dissolved, All, Low (RMD) TAT: 1 Metals, total, All, Low (RMD) TAT: 1 pH in Water (KEL) TAT: 1 Solids, Total Dissolved (KEL) TAT: 1 Solids, Total Suspended (KEL) TAT: 1 Turbidity (KEL) TAT: 1 VOC in Water (RMD) TAT: 1	C03_250 mL Glass (EPH/PAH) C04_40 mL Vial (VOC Water) C05_125 mL Plastic (Metals) C06_40 mL Vial (Mercury) C10_125 mL Plastic (H2SO4) C11_1 L Plastic (General) C19_40 mL Vial (General CG) S05_125 mL Plastic (Metals-F) S06_40 mL Vial (Mercury-F)

Comments: Weir

#2	Analyses	Containers
2 (Template: 01) 10/14/2016 07:51 Grab / Water	Alkalinity, all (KEL) TAT: 1 Anions in Water by IC, 5 Analytes (KEL) TAT: 1 Colour, True - 456 nm (KEL) TAT: 1 Conductivity in Water (KEL) TAT: 1 Glycols in Water (RMD) TAT: 1 L/HEPH in Water (RMD) TAT: 1 Mercury, diss CVAFS Reg & Low (RMD) TAT: 1 Mercury, total CVAFS Reg & Low (RMD) TAT: 1 Metals, dissolved, All, Low (RMD) TAT: 1 Metals, total, All, Low (RMD) TAT: 1 pH in Water (KEL) TAT: 1 Solids, Total Dissolved (KEL) TAT: 1 Solids, Total Suspended (KEL) TAT: 1 Turbidity (KEL) TAT: 1 VOC in Water (RMD) TAT: 1	C03_250 mL Glass (EPH/PAH) C04_40 mL Vial (VOC Water) C05_125 mL Plastic (Metals) C06_40 mL Vial (Mercury) C10_125 mL Plastic (H2SO4) C11_1 L Plastic (General) C19_40 mL Vial (General CG) S05_125 mL Plastic (Metals-F) S06_40 mL Vial (Mercury-F)

Comments: SW-1



ne	Accepted by	Date/Time
	NOVEX TC	10/14
	10.1°C	12:15