

From: spomo1701@outlook.com
Sent: Monday, April 16, 2018 9:24 PM
To: Environmental Compliance ENV:EX; marty@chholdings.ca
Subject: SPO MO1701 20180415 Status Update
Attachments: COA_CHH MARCH 2018.pdf; COA_CHH MARCH 2018.xlsx; CHH SUBMITTAL-2018 Ground Water Quality DATA-CLOSURE PLAN.pdf; CHH SUBMITTAL-2018 Surface Water Quality DATA-CLOSURE PLAN.pdf; April 15, 2018 CHH Progress Report.pdf

- Please note that the sending date of this submittal complies with item 4b of the Oct 11, 2017 Ministry of Environment Letter entitled ***Re: Spill Prevention Order for Cobble Hill Holdings Landfill – Reporting Requirements*** File MO1701
- ***Please find information regarding the Leachate reporting requirements for the April 15, 2018 reporting period as per SPILL PREVENTION ORDER : MO1701 Section 1d***

Total Leachate Collected= 11.28 m³

Total Leachate Stored= 63.81 m³

Total Leachate Transported= 0 m³

- ***Sampling was conducted on March 27, 2018 as per Section 6biii of File 311372 August 11, 2017 letter. COA's and Tabulated Data are attached.***

Sampling Summary:

1. SHA-SW1
2. SHA-SW2 (No Flow)
3. MW6
4. MW3
5. MW2
6. SHA-LE-1
7. SHA-LD-1 (Dry Conditions)
8. SB-1
9. SB-2
10. SB-3

- ***Attached is the QP Progress Report for April 15, 2018 as per File 311372 August 11, 2017 letter.***

Thank you



ISLANDER ENGINEERING

FIELD REVIEW REPORT		DATE: April 16, 2018	ISLANDER PROJECT No.: 2087
REPORT No: 18	STAGE OF CONSTRUCTION: Landfill Closure	WEATHER: Cloudy & 4 deg	PAGE: 1 of 4
PROJECT: Cobble Hill Landfill 2017 Minor Construction Works			
TO: CHH	ATTENTION: Marty Block		
CC:			

The field review included the inspection of the following items included in the detailed summary of works section of the *Cobble Hill Landfill — 2017 Minor Construction Works, Detailed Construction Plan (Sperling Hansen Associates, September 13, 2017)*:

- **PEA**
 - Liner appears to be in good condition, with no noticeable changes since the date of our last inspection
- **Leachate and Leak Detention facility**
 - Total leachate collected: = 11.28 m³
 - Total leachate stored = 63.81 m³
 - Total leachate transported = 0 m³
- **Soil Management Area (SMA)**
 - All works are in good condition and no noticeable changes since the date of our last inspection
- **Contact Water Containment Pond**
 - All works are in good condition and no noticeable changes since the date of our last inspection
- **cut-off ditch upland of PEA**
 - All works are in good condition, ditch still performing well.

ISLANDER ENGINEERING LTD.



Mike Achtem, P.Eng



ISLANDER ENGINEERING

FIELD REVIEW REPORT		DATE: April 16, 2018	ISLANDER PROJECT No.: 2087
REPORT No: 18	STAGE OF CONSTRUCTION: Landfill Closure	WEATHER: Cloudy & 4 deg	PAGE:



SMA - looking south



SMA – looking north



Contact water containment Pond



Leak and leachate detection works



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FIELD REVIEW REPORT		DATE: April 16, 2018	ISLANDER PROJECT No.: 2087
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PEA – liner near NE corner



PEA– NW corner



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FIELD REVIEW REPORT		DATE: April 16, 2018	ISLANDER PROJECT No.: 2087
REPORT No: 18	STAGE OF CONSTRUCTION: Landfill Closure	WEATHER: Cloudy & 4 deg	PAGE:



Cut-off ditch upland of PEA



PEA north face

Table 1: Analytical Results for Nutrients in Surface Water			SHA-LE-1	SHA-SW-1
Laboratory ID			8032208-08	8032208-09
Sample ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	LE-1	SW1
Date Sampled/Time			2018-03-27	2018-03-27
Physical Tests				
Colour, True (Colour Units)	15 TCU	15 ⁽¹⁾ units absolute, or 5 units above background (30-day average)	5	<5.0
Total Dissolved Solids (mg/L)	-	-	-	-
Total Suspended Solids (mg/L)	-	25 mg/L above background (24-hr during clear flow)	<2.0	<2.0
pH	7-10.5	6.5-9	7.18	7.57
Conductivity (uS/cm)	-	-	9810	435
Hardness (as CaCO3)	-	-	2530	202
Turbidity (NTU)	Δ1 NTU	8 NTU above background (24-hr during clear flow)	0.63	<0.10
	5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters	Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters		
Anions and Nutrients mg/L				
Alkalinity Total (as CaCO3)	<10 high sensitivity to acid inputs		61.3	118
Acid Sensitivity	10-20 moderate sensitivity to acid inputs		Low	Low
	>20 low sensitivity to acid inputs			
Chloride (Cl)	250 mg/L	500 mg/L (instant max), 150 mg/L (30-day average)	2640	18.7
Fluoride (F)	1.5 mg/L (instant max) 1.0 mg/L (30-day average)	0.4 (Hardness <10mg/L)	<0.10	<0.10
		Hardness-Dependent AW (Hardness is >10mg/L)	2.63	1.62
Nitrate (as N)	45 mg/L	32.8 mg/L (instant maximum) 3.0 mg/L (30-day average)	1.35	0.361
Nitrite (as N) ⁽²⁾	3 mg/L	Cl > 10 mg/L, 0.6 mg/L (MAX), 0.2 mg/L (30-day average)	<1.00	<0.010
Sulfate (SO4) H 0-30 mg/L	500 mg/L	128 mg/L (30-day average)		
H 31 - 75 mg/L		218 mg/L (30-day average)		
H 76 - 180 mg/L		309 mg/L (30-day average)		
H 181 - 250 mg/L		429 mg/L (30-day average)		70.5
H > 250 mg/L		TBD	1490	

Notes: Refer to Table Endnotes (attached)

Table 2: Analytical Results for Total Metals in Surface Water			SHA-LE-1	SHA-SW-1
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	8032208-08	8032208-09
Sample ID			LE-1	SW1
Date Sampled/Time			2018-03-27	2018-03-27
Physical Tests				
Hardness (as CaCO3) (mg/L)	-	-	2530	202
pH	7-10.5	6.5-9	7.18	7.57
Total Metals (mg/L)				
Aluminum (Al)-Total	0.2	-	0.054	0.0087
Antimony (Sb)-Total	-	-	0.00021	<0.00020
Arsenic (As)-Total	0.01	0.005	<0.00050	<0.00050
Barium (Ba)-Total	-	-	0.0494	0.0113
Beryllium (Be)-Total	-	-	<0.00010	<0.00010
Bismuth, total	-	-	<0.00010	<0.00010
Boron (B)-Total	5	1.2	0.178	0.0161
Cadmium (Cd)-Total	-	-	0.000632	<0.000010
Calcium (Ca)-Total	-	-	772	68.9
Chromium (Cr)-Total Chromium	-	-	<0.00050	<0.00050
Chromium (Cr(III))	-	-		<0.00100
Chromium (Cr(VI))	-	-		<0.0010
Cobalt (Co)-Total	-	0.110 (Short Term), 0.004 (Long Term Average)	0.00647	<0.00010
Copper (Cu)-Total	0.5	Hardness-Dependent ⁽⁷⁾	0.00376	0.00107
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	0.2396	0.0210
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	0.1012	0.0081
Iron (Fe)-Total	-	1	0.025	<0.010
Lead (Pb)-Total	0.01	Hardness-Dependent ⁽⁸⁾	<0.00020	<0.00020
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	4.9900	0.1998
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	0.1980	0.0111
Lithium (Li)-Total	-	-	0.00027	0.00018
Magnesium (Mg)-Total	-	-	205	8.8
Manganese (Mn)-Total	-	Hardness Dependent ⁽⁸⁾	28.9	0.00381
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	28.4	2.8
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	11.7	1.5
Mercury (Hg)-Total	0.001	0.00002	0.000011	<0.000010
Molybdenum (Mo)-Total	0.25	≤1 (instant max) 2 (30-d average)	0.00103	0.00074
Nickel (Ni)-Total	-	0.025 (Hardness-Dependent ⁽⁸⁾ BCAWQG to protect AW H<50mg/L) Calculated Hardness-Dependent ⁽⁸⁾ BCAWQG to protect AW 60H<150 mg/L CaCO3	0.00702	0.00055
			1.113	0.163
Phosphorus(P)-Total	-	-	<0.050	<0.050
Potassium (K)-Total	-	-	16.8	0.78
Selenium (Se)-Total	0.01	0.002	<0.00050	<0.00050
Silicon (Si)-Total	-	-	5.2	4.7
Silver (Ag)-Total	-	HARDNESS <100mg/L 0.0001 (SHORT TERM), 0.00005 (LONG TERM), HARDNESS >100mg/L 0.003 (SHORT TERM), 0.0015 (LONG TERM)	0.000064	<0.000050
Sodium (Na)-Total	-	-	1310	11
Strontium (Sr)-Total	-	-	3.65	0.175
Sulfur (S)-Total	-	-	533	23
Tellurium (Te)-Total	-	-	<0.00050	<0.00050
Thallium (Tl)-Total	-	-	0.000044	<0.000020
Thorium (Th)-Total	-	-	<0.00010	<0.000010
Tin (Sn)-Total	-	-	<0.00020	<0.00020
Titanium (Ti)-Total	-	-	<0.0050	<0.0050
Uranium (U)-Total	-	-	0.000349	0.000951
Vanadium (V)-Total	-	-	<0.0010	<0.0010
Zinc (Zn)-Total	5.0	Hardness >90 mg/L	0.0233	<0.0040
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	1.863	0.117
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	1.838	0.092
Zirconium (Zr)-Total	-	-	<0.00010	<0.00010

Table 3: Analytical Results for Dissolved Metals in Surface Water			SHA-LE-1	SHA-SW-1
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	8032208-08	8032208-09
Sample ID			LE-1	SW1
Date Sampled/Time			2018-03-27	2018-03-27
Physical Tests				
Hardness (as CaCO3) (mg/L)	-	-	2530	202
pH	7-10.5	6.5-9	7.18	7.57
Dissolved Metals (mg/L)				
Aluminum (Al)-Dissolved	-	0.05 (30-day average where median pH > 6.5) 0.1 (maximum where instantaneous pH > 6.5) *** indicates pH-dependent maximum where instant pH ≤ 6.5	0.0141	<0.0050
		pH/Hardness Dependent BCAWQG to protect AW ⁽⁴⁾ (instant max)	0.231	0.465
		pH/Hardness Dependent BCAWQG to protect AW ⁽⁴⁾ (30-d Mean)	0.209	0.578
Antimony (Sb)-Dissolved	-	-	0.00021	<0.00020
Arsenic (As)-Dissolved	-	-	<0.00050	<0.00050
Barium (Ba)-Dissolved	-	-	0.045	0.0108
Beryllium (Be)-Dissolved	-	-	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	-	-	<0.00010	<0.00010
Boron (B)-Dissolved	-	-	0.172	0.015
Cadmium (Cd)-Dissolved	-	Hardness-Dependent ⁽³⁾	0.000581	<0.000010
	-	Calculated Hardness-Dependent ⁽³⁾ BCAWWQG to protect AW (short-term max) e[1.03 * ln(Hss) - 5.274] ug/L H<455mg/L	Hardness exceeds 455mg/L	0.00121
	-	Calculated Hardness-Dependent BCAWQG to protect AW ⁽³⁾ (long-term max) e[0.736 * ln(Hss) - 4.943] ug/L H<285mg/L	Hardness exceeds 285mg/L	0.00035
Calcium (Ca)-Dissolved	-	up to 4, highly sensitive to acid inputs 4 to 8, moderately sensitive over 8 low sensitivity	700	66.1
Chromium (Cr)-Dissolved	-	-	Low	Low
Cobalt (Co)-Dissolved	-	-	<0.00050	<0.00050
Copper (Cu)-Dissolved	-	-	0.00611	<0.00010
Iron (Fe)-Dissolved	-	-	0.00345	0.00093
Iron (Fe)-Dissolved	-	0.35	<0.010	<0.010
Lead (Pb)-Dissolved	-	-	<0.00020	<0.00020
Lithium, dissolved	-	-	0.00026	0.00018
Magnesium (Mg)-Dissolved	-	-	190	8.86
Manganese (Mn)-Dissolved	-	-	27.7	0.00296
Mercury (Hg)-Dissolved	-	-	<0.000010	<0.000010
Molybdenum (Mo)-Dissolved	-	-	0.00097	0.00075
Nickel (Ni)-Dissolved	-	-	0.00673	0.00054
Phosphorus (P)-Dissolved	-	-	<0.050	<0.050
Potassium (K)-Dissolved	-	-	15.8	0.81
Selenium (Se)-Dissolved	-	-	<0.00050	<0.00050
Silicon (Si)-Dissolved	-	-	4.8	4.5
Silver (Ag)-Dissolved	-	-	0.000055	<0.000050
Sodium (Na)-Dissolved	-	-	1230	11.2
Strontium (Sr)-dissolved	-	-	3.43	0.172
Sulfur (S)-Dissolved	-	-	505	24.7
Tellurium (Te)-Dissolved	-	-	<0.00050	<0.00050
Thallium (Tl)-Dissolved	-	-	0.000046	<0.000020
Thorium (Th)-Dissolved	-	-	<0.00010	<0.00010
Tin (Sn)-Dissolved	-	-	<0.00020	<0.00020
Titanium (Ti)-Dissolved	-	-	<0.0050	<0.0050
Uranium (U)-Dissolved	-	-	0.000337	0.000922
Vanadium (V)-Dissolved	-	-	<0.0010	<0.0010
Zinc (Zn)-Dissolved	-	-	0.0193	<0.0040
Zirconium (Zr)-Dissolved	-	-	<0.00010	<0.00010

Notes: Refer to Table Endnotes (attached)

Table 4: Analytical Results for Hydrocarbons and PAHs in			SHA-LE-1	SHA-SW-1
Laboratory ID	BC DRINKING	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	8032208-08	8032208-09
Sample ID			LE-1	SW1
Date Sampled/ Time			2018-03-27	2018-03-27
Hydrocarbons ug/L				
LEPH	-	-	<250	<250
HEPH	-	-	<250	<250
Polycyclic Aromatic				
Acenaphthene	-	6 (LONG TERM)	<0.050	<0.050
Acenaphthylene	-	-	<0.200	<0.200
Acridine	-	3 (LONG TERM), 0.05 (PHOTOTOXIC)	<0.050	<0.050
Anthracene	-	4 (LONG TERM), 0.1 (PHOTOTOXIC)	<0.010	<0.010
Benz(a)anthracene	0.01	0.1 (LONG TERM), 0.1 (PHOTOTOXIC)	<0.010	<0.010
Benzo(a)pyrene	-	0.01 (LONG TERM)	<0.010	<0.010
Benzo(b)fluoranthene	-	-	-	-
Benzo(b+j)fluoranthene	-	-	<0.050	<0.050
Benzo(g,h,i)perylene	-	-	<0.050	<0.050
Benzo(k)fluoranthene	-	-	<0.050	<0.050
2-Chloronaphthalene			<0.100	<0.100
Chrysene	-	-	<0.050	<0.050
Dibenz(a,h)anthracene	-	-	<0.010	<0.010
Fluoranthene	-	4 (LONG TERM), 0.2 (PHOTOTOXIC)	<0.030	<0.030
Fluorene	-	12 (LONG TERM)	<0.050	<0.050
Indeno(1,2,3-c,d)pyrene	-	-	<0.050	<0.050
1-Methylnaphthalene			<0.100	<0.100
2-Methylnaphthalene			<0.100	<0.100
Naphthalene	-	1 (LONG TERM)	<0.200	<0.200
Phenanthrene	-	0.3 (LONG TERM)	<0.100	<0.100
Pyrene	-	0.02 (PHOTOTOXIC)	<0.020	<0.020
Quinoline	-	-	<0.050	<0.050

Notes: Refer to Table Endnotes (attached)

Analytical Table Footnotes: Analytical Results for Surface Water

- All concentrations in mg/L, except pH or as indicated.
- "<" less than the laboratory detection limit indicated.
- "-" means not analyzed or no standard or guideline applies.
- * RPDs are not normally calculated where one or more concentrations are less than five times RDL.
- (1) Guideline of 15 mg/L Pt for Drinking Water. Once background levels are established, colour should also not exceed 5 mg/L above background, to protect for Aquatic Life. This is considered a clearwater system (background less than 20 mg/L Pt.)
- (2) Nitrite BCAWWQG Guideline is Chloride dependent
- (3) Standard is calculated based on the hardness dependent BCAWWQG formula, and has been calculated and shown for each individual result
- (4) pH-dependent maximum where instant pH < 6.5

BOLD, UNDERLINE

Laboratory Detection Limit exceeds one or more applicable Standard

BOLD, BLUE SHADING

Concentration greater than BCAWWQG Guideline

BOLD, BEIGE SHADING

Concentration greater than BCAWWQG Chronic Guideline

BOLD, GREEN SHADING

Concentration greater than BC Ministry of Environment Drinking Water Sources

RED FONT

Concentration less than laboratory detection limit (Formula 0.5MRL utilized for statistical analysis)

Table GW1: Analytical Results for Nutrients in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-6	MW-3S	MW-3D	MW-2	SB1	SB2	SB3
As-built Well Depths			47m	23m	46m	43m	4.01m	3.28m	3.53m
Sample ID			8032208-01	8032208-02	8032208-03	8032208-04	8032208-05	8032208-06	8032208-07
			MW6	MW3S	MW3D	MW2	SB1	SB2	SB3
Date Sampled	Aquatic Life	Drinking Water	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27
Physical Tests									
Colour, True (TCU)	-	-	6.3	<5.0	7.2	7.1	<5.0	<5.0	<5.0
Conductivity (uS/cm)	-	-	1300	343	245	286	41.2	259	44.8
Hardness (as CaCO3) mg/L	-	-	584	146	101	126	15.9	102	17.7
pH (pH Units)	-	-	7.29	7.64	7.62	7.75	6.87	7	6.79
Total Suspended Solids mg/L			10.6	12	12.2	22.2	160	301	712
Total Dissolved Solids mg/L	-	-	-	-	-	-	-	-	-
Turbidity (NTU)	-	-	16.3	11.7	17.2	19	182	276	584
Anions and Nutrients mg/L									
Alkalinity, Total (as CaCO3)	-	-	624	150	103	125	9.3	85.5	8.6
Chloride (Cl)	1500	250	38.7	7.65	2.45	5.04	0.42	12.1	0.4
Fluoride (F)	2 (H < 50) 3 (H ≥ 50)	1.5					0.11		<0.10
Nitrate (as N)	400	10	0.16	0.1	0.12	0.23		<0.10	
Nitrite (as N) ⁽²⁾ Cl <2 mg/L	0.2		<0.010	<0.010	<0.010	<0.010	0.046	0.092	0.036
Cl 2 - <4 mg/L	0.4	3.2			<0.010		<0.010		<0.010
Cl 4 - <6 mg/L	0.6					<0.010			
Cl 6 - <8 mg/L	0.8			<0.010					
Cl 8 - <10 mg/L	1								
Cl ≥ 10 mg/L	2		<0.010					<0.010	
Sulfate (SO4)	1000	500	87.2	37.8	21.1	18.2	7.8	24.5	9.6

Notes: Refer to Table Endnotes (attached)

Table GW2: Analytical Results for Total Metals in Groundwater

Sample Location			CSR Standards ⁽¹⁾						
As-built Well Depths			MW-6	MW-3S	MW-3D	MW-2	SB1	SB2	SB3
			47m	23m	46m	43m	4.01m	3.28m	3.53m
Sample ID			8032208-01	8032208-02	8032208-03	8032208-04	8032208-05	8032208-06	8032208-07
			MW6	MW3S	MW3D	MW2	SB1	SB2	SB3
Date Sampled	Aquatic Life	Drinking Water	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27
Physical Tests mg/L									
Hardness (as CaCO3)			584	146	101	126	15.9	102	17.7
Total Metals mg/L									
Aluminum (Al)-Total	-	-	0.323	0.0803	0.133	0.569	7.49	13.3	25.5
Antimony (Sb)-Total	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0003
Arsenic (As)-Total	-	-	0.00359	0.00093	0.00119	0.00189	0.00078	0.00106	0.00387
Barium (Ba)-Total	-	-	0.0858	0.0314	0.0208	0.0337	0.0374	0.0612	0.107
Beryllium (Be)-Total	-	-	<0.00010	<0.00010	<0.00010	<0.00010	0.00014	0.00031	0.00047
Bismuth (Bi)-Total	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron (B)-Total	-	-	0.0953	0.0202	0.0205	0.0197	<0.0050	0.0116	0.0076
Cadmium (Cd)-Total	-	-	0.00012	0.000199	0.000118	0.000034	0.000027	0.000035	0.000088
Calcium (Ca)-Total	-	-	253	49.2	33.6	41	8.63	41.3	15
Chromium (Cr)-Total	-	-	0.00071	<0.00050	<0.00050	0.0008	0.00898	0.0108	0.0491
Cobalt (Co)-Total	-	-	0.00234	0.00078	0.00043	0.00072	0.00757	0.00938	0.0285
Copper (Cu)-Total	-	-	0.00265	0.0004	0.00046	0.00084	0.0199	0.0361	0.0799
Iron (Fe)-Total	-	-	1.98	0.099	0.161	1.04	7.64	13.4	31.8
Lead (Pb)-Total	-	-	0.00127	<0.00020	<0.00020	0.00028	0.0085	0.00362	0.0152
Lithium (Li)-Total	-	-	0.0187	0.00015	0.00013	0.00019	0.00251	0.00387	0.0141
Magnesium (Mg)-Total	-	-	35.2	7.22	5.45	7.37	2.79	8.64	11.5
Manganese (Mn)-Total	-	-	1.99	0.377	0.274	0.457	0.23	0.521	0.589
Mercury (Hg)-Total	-	-	<0.00010	<0.00010	<0.00010	<0.00010	0.000017	0.000012	0.000013
Molybdenum (Mo)-Total	-	-	0.001	0.00613	0.00646	0.00418	0.00031	0.00087	0.00049
Nickel (Ni)-Total	-	-	0.00496	0.00156	0.00146	0.00166	0.0074	0.00991	0.0437
Phosphorus(P)-Total	-	-	<0.050	0.055	0.099	0.159	0.16	0.404	0.714
Potassium (K)-Total	-	-	3.75	0.92	0.61	0.71	0.67	2.54	2.03
Selenium (Se)-Total	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon (Si)-Total	-	-	11.7	6.5	6.4	7.5	11.5	25.1	42.5
Silver (Ag)-Total	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000073
Sodium (Na)-Total	-	-	62.7	13.3	10.6	9.04	1.19	12	2.48
Strontium (Sr)-Total	-	-	0.57	0.23	0.191	0.169	0.0265	0.129	0.0723
Sulfur (S)-Total	-	-	21.4	11.7	4.5	3.7	<3.0	6.2	<3.0
Tellurium (Te)-Total	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Thallium (Tl)-Total	-	-	0.000078	0.00003	<0.000020	<0.000020	<0.000020	0.000044	0.000088
Thorium (Th)-Total	-	-	<0.00010	<0.00010	0.00018	<0.00010	0.00017	0.00053	0.00093
Tin (Sn)-Total	-	-	0.00077	<0.00020	<0.00020	<0.00020	0.0005	0.00025	0.00075
Titanium (Ti)-Total	-	-	0.0157	<0.0050	<0.0050	0.035	0.359	0.611	1.16
Uranium (U)-Total	-	-	0.0103	0.00106	0.000714	0.000861	0.000367	0.000854	0.001
Vanadium (V)-Total	-	-	<0.0010	<0.0010	<0.0010	0.0023	0.0188	0.026	0.0692
Zinc (Zn)-Total	-	-	0.0076	<0.0040	<0.0040	<0.0040	0.0213	0.03	0.0813
Zirconium (Zr)-Total	-	-	0.00024	0.00012	0.00017	0.00018	0.00087	0.00155	0.00187

Notes: Refer to Table Endnotes (attached)

Table GW3: Analytical Results for Dissolved Metals in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-6	MW-3S	MW-3D	MW-2	SB1	SB2	SB3
As-built Well Depths			47m	23m	46m	43m	4.01m	3.28m	3.53m
Sample ID			8032208-01	8032208-02	8032208-03	8032208-04	8032208-05	8032208-06	8032208-07
			MW6	MW3S	MW3D	MW2	SB1	SB2	SB3
Date Sampled	Aquatic Life	Drinking Water	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27
Physical Tests mg/L			584	146	101	126	15.9	102	17.7
Hardness (as CaCO3)	-	-	<0.0050	<0.0050	<0.0050	<0.0050	0.0102	<0.0050	0.0232
Dissolved Metals mg/L	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Aluminum (Al)-Dissolved	-	9.5	0.00348	0.00088	0.00115	0.00185	<0.00050	<0.00050	<0.00050
Antimony (Sb)-Dissolved	0.2	0.006	0.0784	0.028	0.0178	0.0289	<0.00050	<0.00050	<0.00050
Arsenic (As)-Dissolved	0.05	0.01	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Barium (Ba)-Dissolved	10	1	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Beryllium (Be)-Dissolved	0.053	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	-	-	0.0635	0.0163	0.0199	0.019	<0.0050	0.0092	<0.0050
Boron (B)-Dissolved	50	5					<0.00010		<0.00010
Cadmium (Cd)-Dissolved	0.0001 (H<30) 0.0003 (H=30-<90) 0.0005 (H=90-<150) 0.0006 (H=150-<210)	0.005		0.00002	<0.000010	<0.000010		<0.000010	
Calcium (Ca)-Dissolved	-	-	<0.000010						
Chromium (Cr)-Dissolved	0.01	0.05	176	47.1	31.8	39.1	5.64	33.1	5.73
Colbalt (Co)-Dissolved	0.04	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper (Cu)-Dissolved	0.02 (H<50) 0.03 (H=50-<75) 0.04 (H=75-<100) 0.05 (H=100-<125) 0.06 (H=125-<150) 0.07 (H=150-<175) 0.08 (H=175-<200) 0.09 (H=200)	1	0.00204	0.00071	0.00034	0.00035	0.0004	<0.00010	0.00047
Iron (Fe)-Dissolved	0.04 (H<50) 0.05 (H=50-<100) 0.06 (H=100-<200) 0.11 (H=200-<300) 0.16 (H=300)	6.5							
Lead (Pb)-Dissolved	0.04 (H<50) 0.05 (H=50-<100) 0.06 (H=100-<200) 0.11 (H=200-<300) 0.16 (H=300)	0.01	1.69	0.038	0.08	0.233	0.01	<0.010	0.014
Lithium (Li)-Dissolved	-	-					<0.00020		<0.00020
Magnesium (Mg)-Dissolved	35.1	100		<0.00020	<0.00020	<0.00020		0.00066	
Manganese (Mn)-Dissolved	-	0.55	<0.00020						
Mercury (Hg)-Dissolved	0.001	0.001	0.0121	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum (Mo)-Dissolved	10	0.25	35.1	6.99	5.32	6.93	0.451	4.61	0.832
Nickel (Ni)-Dissolved	0.25 (H<60) 0.65 (H=60-<120) 1.1 (H=120-<180) 1.5 (H=180)	-	2.01	0.371	0.268	0.434	0.00055	0.00378	0.00069
Phosphorus(P)-Dissolved	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Potassium (K)-Dissolved	-	-	0.00064	0.00597	0.00625	0.00391	0.00022	0.00055	0.00021
Selenium (Se)-Dissolved	0.01	0.01			0.00129	0.00085	<0.00040	<0.00040	<0.00040
Silicon (Si)-Dissolved	0.0005 (H<100) 0.015 (H=100)	-	0.00379	0.00136					
Silver (Ag)-Dissolved	-	200	<0.050	<0.050	0.08	0.133	<0.050	<0.050	<0.050
Sodium (Na)-Dissolved	-	-	3.75	0.91	0.62	0.69	0.1	0.69	0.13
Strontium (Sr)-Dissolved	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Sulfur (S)-Dissolved	-	-	10.7	5.8	5.8	6.1	<1.0	2.6	<1.0
Tellurium (Te)-Dissolved	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Thallium (Tl)-Dissolved	0.003	-	63.7	13	10.7	9	0.75	10.6	0.81
Thorium (Th)-Dissolved	-	-	0.562	0.224	0.183	0.16	0.0121	0.0979	0.0127
Tin (Sn)-Dissolved	-	-	20.9	11.2	6.3	5.2	<3.0	7.8	<3.0
Titanium (Ti)-Dissolved	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	3	0.02	<0.000020	0.000025	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Vanadium (V)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zinc (Zn)-Dissolved	0.075 (H<90) 0.150 (H=90-<100) 0.900 (H=100-<200) 1.650 (H=200-<300) 2.4 (H=300-<400)	5	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Zirconium (Zr)-Dissolved	-	-	<0.00018	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010

Notes: Refer to Table Endnotes (attached)

Table GW4: Analytical Results for Hydrocarbons and PAHs in Groundwater

Sample Location		CSR Standards ⁽¹⁾		MW-6	MW-3S	MW-3D	MW-2	SB1	SB2	SB3
As-built Well Depths				47m	23m	46m	43m	4.01m	3.28m	3.53m
Sample ID				8032208-01	8032208-02	8032208-03	8032208-04	8032208-05	8032208-06	8032208-07
				MW6	MW3S	MW3D	MW2	SB1	SB2	SB3
Date Sampled		Aquatic Life	Drinking Water	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27
Hydrocarbons ug/L										
EPH10-19		5000	5000	<250	<250	<250	<250	<250	<250	<250
EPH10-19 (SG)		5000	5000							
EPH19-32		-	-	260	253	252	<250	<250	<250	<250
EPH19-32 (SG)		-	-							
LEPH		500	-	<250	<250	<250	<250	<250	<250	<250
HEPH		-	-	260	253	251	<250	<250	<250	<250
Polycyclic Aromatic Hydrocarbons ug/L										
Acenaphthene		60	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene		-	-	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Acridine		0.5	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene		1	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benz(a)anthracene		1	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene		0.1	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene		-	-	-	-	-	-	-	-	-
Benzo(b+)fluoranthene		-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene		-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene		-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Chloronaphthalene				<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Chrysene		1	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenz(a,h)anthracene		-	-	<0.010	<0.010	<0.010	<0.010	0.02	<0.010	<0.010
Fluoranthene		2	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Fluorene		120	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-c,d)pyrene		-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1-Methylnaphthalene				<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
2-Methylnaphthalene				<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Naphthalene		10	-	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Phenanthrene		3	-	0.13	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Pyrene		0.2	-	0.123	0.062	0.063	<0.020	<0.020	<0.020	<0.020
Quinoline		34	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Notes: Refer to Table Endnotes (attached)

Analytical Table Footnotes: Analytical Results for Groundwater

All concentrations in mg/L, except pH or as indicated.

"<" less than the laboratory detection limit indicated.

"_" means not analyzed or no standard or guideline applies.

* RPDs are not normally calculated where one or more concentrations are less than five times MDL.

(1) A compendium of CSR Schedules 6 and 10 guidelines with respect to Drinking Water (DW) and Freshwater Aquatic Life (AW).

(2) Standard is dissolved Chloride-dependent.

BOLD, UNDERLINE

Laboratory Detection Limit exceeds one or more applicable Standard

BLUE SHADING

Concentration greater than CSR Aquatic Life (AW) Standard

BOLD, BEIGE TEXT

Concentration greater than CSR Drinking Water (DW) Standard

CARO Analytical Services
FINAL Analytical Testing Report
Work Order: 8032208
Report Date: 2018-04-09 12:07:58

Client Allterra Construction
Attention Rahim Gaidhar
Project P17-932
Project Info [none]

Note: This is not the original data. Please refer to PDF / Hardcopy report.

LAB ID				8032208-01	8032208-02	8032208-03	8032208-04	8032208-05
CLIENT ID				MW6	MW3S	MW3D	MW2	SB1
DATE SAMPLED				2018-03-27	2018-03-27	2018-03-27	2018-03-27	2018-03-27
DATE RECEIVED				2018-03-28	2018-03-28	2018-03-28	2018-03-28	2018-03-28
MATRIX				Water	Water	Water	Water	Water
General Method	Analyte	Units	MRL					
Anions	Chloride	mg/L	0.1	38.7	7.65	2.45	5.04	0.42
Anions	Fluoride	mg/L	0.1	0.16	0.1	0.12	0.23	0.11
Anions	Nitrate (as N)	mg/L	0.01	<0.010	<0.010	<0.010	<0.010	0.046
Anions	Nitrite (as N)	mg/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010
Anions	Sulfate	mg/L	1	87.2	37.8	21.1	18.2	7.8
General Parameters	Colour, True	CU	5	6.3	<5.0	7.2	7.1	<5.0
General Parameters	Alkalinity, Total (as CaCO3)	mg/L	1	624	150	103	125	9.3
General Parameters	Alkalinity, Phenolphthalein (as CaCO3)	mg/L	1	<1.0	<1.0	<1.0	<1.0	<1.0
General Parameters	Alkalinity, Bicarbonate (as CaCO3)	mg/L	1	624	150	103	125	9.3
General Parameters	Alkalinity, Carbonate (as CaCO3)	mg/L	1	<1.0	<1.0	<1.0	<1.0	<1.0
General Parameters	Alkalinity, Hydroxide (as CaCO3)	mg/L	1	<1.0	<1.0	<1.0	<1.0	<1.0
General Parameters	Chromium, Hexavalent	mg/L	0.001					
General Parameters	Solids, Total Suspended	mg/L	2	10.6	12	12.2	22.2	160
General Parameters	Turbidity	NTU	0.1	16.3	11.7	17.2	19	182
General Parameters	pH	pH units	0.1	7.29	7.64	7.62	7.75	6.87
General Parameters	Conductivity (EC)	uS/cm	2	1300	343	245	286	41.2
Calculated Parameters	Chromium, Trivalent	mg/L	0.001					
Calculated Parameters	Hardness, Total (as CaCO3)	mg/L	0.5	584	146	101	126	15.9
Dissolved Metals	Aluminum, dissolved	mg/L	0.005	<0.0050	<0.0050	<0.0050	<0.0050	0.0102
Dissolved Metals	Antimony, dissolved	mg/L	0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals	Arsenic, dissolved	mg/L	0.0005	0.00348	0.00088	0.00115	0.00185	<0.00050
Dissolved Metals	Barium, dissolved	mg/L	0.005	0.0784	0.028	0.0178	0.0289	<0.0050
Dissolved Metals	Beryllium, dissolved	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals	Bismuth, dissolved	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals	Boron, dissolved	mg/L	0.005	0.0635	0.0163	0.0199	0.019	<0.0050
Dissolved Metals	Cadmium, dissolved	mg/L	0.00001	<0.000010	0.00002	<0.000010	<0.000010	<0.000010
Dissolved Metals	Calcium, dissolved	mg/L	0.2	176	47.1	31.8	39.1	5.64
Dissolved Metals	Chromium, dissolved	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Metals	Cobalt, dissolved	mg/L	0.0001	0.00204	0.00071	0.00034	0.00035	<0.00010
Dissolved Metals	Copper, dissolved	mg/L	0.0004	<0.00040	<0.00040	<0.00040	<0.00040	0.0004
Dissolved Metals	Iron, dissolved	mg/L	0.01	1.69	0.038	0.08	0.233	0.01
Dissolved Metals	Lead, dissolved	mg/L	0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals	Lithium, dissolved	mg/L	0.0001	0.0121	0.00011	<0.00010	<0.00010	<0.00010

CARO Analytical Services
FINAL Analytical Testing Report
Work Order: 8032208
Report Date: 2018-04-09 12:07:58

Client Allterra Construction
Attention Rahim Gaidhar
Project P17-932
Project Info [none]

Note: This is not the original data. Please refer to PDF / Hardcopy report.

Dissolved Metals	Magnesium, dissolved	mg/L	0.01	35.1	6.99	5.32	6.93	0.451
Dissolved Metals	Manganese, dissolved	mg/L	0.0002	2.01	0.371	0.268	0.434	0.00055
Dissolved Metals	Mercury, dissolved	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Dissolved Metals	Molybdenum, dissolved	mg/L	0.0001	0.00064	0.00597	0.00625	0.00391	0.00022
Dissolved Metals	Nickel, dissolved	mg/L	0.0004	0.00379	0.00136	0.00129	0.00085	<0.00040
Dissolved Metals	Phosphorus, dissolved	mg/L	0.05	<0.050	<0.050	0.08	0.133	<0.050
Dissolved Metals	Potassium, dissolved	mg/L	0.1	3.75	0.91	0.62	0.69	0.1
Dissolved Metals	Selenium, dissolved	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Metals	Silicon, dissolved	mg/L	1	10.7	5.8	5.8	6.1	<1.0
Dissolved Metals	Silver, dissolved	mg/L	0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Dissolved Metals	Sodium, dissolved	mg/L	0.1	63.7	13	10.7	9	0.75
Dissolved Metals	Strontium, dissolved	mg/L	0.001	0.562	0.224	0.183	0.16	0.0121
Dissolved Metals	Sulfur, dissolved	mg/L	3	20.9	11.2	6.3	5.2	<3.0
Dissolved Metals	Tellurium, dissolved	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Metals	Thallium, dissolved	mg/L	0.00002	<0.000020	0.000025	<0.000020	<0.000020	<0.000020
Dissolved Metals	Thorium, dissolved	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals	Tin, dissolved	mg/L	0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals	Titanium, dissolved	mg/L	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Metals	Tungsten, dissolved	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals	Uranium, dissolved	mg/L	0.00002	0.00738	0.00105	0.000626	0.000816	<0.000020
Dissolved Metals	Vanadium, dissolved	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals	Zinc, dissolved	mg/L	0.004	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Dissolved Metals	Zirconium, dissolved	mg/L	0.0001	0.00018	<0.00010	<0.00010	<0.00010	<0.00010
Total Metals	Aluminum, total	mg/L	0.005	0.323	0.0803	0.133	0.569	7.49
Total Metals	Antimony, total	mg/L	0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Total Metals	Arsenic, total	mg/L	0.0005	0.00359	0.00093	0.00119	0.00189	0.00078
Total Metals	Barium, total	mg/L	0.005	0.0858	0.0314	0.0208	0.0337	0.0374
Total Metals	Beryllium, total	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	0.00014
Total Metals	Bismuth, total	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Metals	Boron, total	mg/L	0.005	0.0953	0.0202	0.0205	0.0197	<0.0050
Total Metals	Cadmium, total	mg/L	0.00001	0.00012	0.000199	0.000118	0.000034	0.000027
Total Metals	Calcium, total	mg/L	0.2	253	49.2	33.6	41	8.63
Total Metals	Chromium, total	mg/L	0.0005	0.00071	<0.00050	<0.00050	0.0008	0.00898
Total Metals	Cobalt, total	mg/L	0.0001	0.00234	0.00078	0.00043	0.00072	0.00757
Total Metals	Copper, total	mg/L	0.0004	0.00265	0.0004	0.00046	0.00084	0.0199
Total Metals	Iron, total	mg/L	0.01	1.98	0.099	0.161	1.04	7.64
Total Metals	Lead, total	mg/L	0.0002	0.00127	<0.00020	<0.00020	0.00028	0.0085
Total Metals	Lithium, total	mg/L	0.0001	0.0187	0.00015	0.00013	0.00019	0.00251
Total Metals	Magnesium, total	mg/L	0.01	35.2	7.22	5.45	7.37	2.79

CARO Analytical Services
FINAL Analytical Testing Report
Work Order: 8032208
Report Date: 2018-04-09 12:07:58

Client Allterra Construction
Attention Rahim Gaidhar
Project P17-932
Project Info [none]

Note: This is not the original data. Please refer to PDF / Hardcopy report.

Total Metals	Manganese, total	mg/L	0.0002	1.99	0.377	0.274	0.457	0.23
Total Metals	Mercury, total	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	0.000017
Total Metals	Molybdenum, total	mg/L	0.0001	0.001	0.00613	0.00646	0.00418	0.00031
Total Metals	Nickel, total	mg/L	0.0004	0.00496	0.00156	0.00146	0.00166	0.0074
Total Metals	Phosphorus, total	mg/L	0.05	<0.050	0.055	0.099	0.159	0.16
Total Metals	Potassium, total	mg/L	0.1	3.75	0.92	0.61	0.71	0.67
Total Metals	Selenium, total	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals	Silicon, total	mg/L	1	11.7	6.5	6.4	7.5	11.5
Total Metals	Silver, total	mg/L	0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Total Metals	Sodium, total	mg/L	0.1	62.7	13.3	10.6	9.04	1.19
Total Metals	Strontium, total	mg/L	0.001	0.57	0.23	0.191	0.169	0.0265
Total Metals	Sulfur, total	mg/L	3	21.4	11.7	4.5	3.7	<3.0
Total Metals	Tellurium, total	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals	Thallium, total	mg/L	0.00002	0.000078	0.00003	<0.000020	<0.000020	<0.000020
Total Metals	Thorium, total	mg/L	0.0001	<0.00010	<0.00010	0.00018	<0.00010	0.00017
Total Metals	Tin, total	mg/L	0.0002	0.00077	<0.00020	<0.00020	<0.00020	0.0005
Total Metals	Titanium, total	mg/L	0.005	0.0157	<0.0050	<0.0050	0.035	0.359
Total Metals	Tungsten, total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Metals	Uranium, total	mg/L	0.00002	0.0103	0.00106	0.000714	0.000861	0.000367
Total Metals	Vanadium, total	mg/L	0.001	<0.0010	<0.0010	<0.0010	0.0023	0.0188
Total Metals	Zinc, total	mg/L	0.004	0.0076	<0.0040	<0.0040	<0.0040	0.0213
Total Metals	Zirconium, total	mg/L	0.0001	0.00024	0.00012	0.00017	0.00018	0.00087
BCMOE Aggregate Hydrocarbons	EPHw10-19	ug/L	250	<250	<250	<250	<250	<250
BCMOE Aggregate Hydrocarbons	EPHw19-32	ug/L	250	260	253	252	<250	<250
BCMOE Aggregate Hydrocarbons	LEPHw	ug/L	250	<250	<250	<250	<250	<250
BCMOE Aggregate Hydrocarbons	HEPHw	ug/L	250	260	253	251	<250	<250
Polycyclic Aromatic Hydrocarbons (PAH)	Acenaphthene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Acenaphthylene	ug/L	0.2	<0.200	<0.200	<0.200	<0.200	<0.200
Polycyclic Aromatic Hydrocarbons (PAH)	Acridine	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Anthracene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Benz(a)anthracene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(a)pyrene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(b+j)fluoranthene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(g,h,i)perylene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(k)fluoranthene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	2-Chloronaphthalene	ug/L	0.1	<0.100	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	Chrysene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Dibenz(a,h)anthracene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010	0.02
Polycyclic Aromatic Hydrocarbons (PAH)	Fluoranthene	ug/L	0.03	<0.030	<0.030	<0.030	<0.030	<0.030

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Polycyclic Aromatic Hydrocarbons (PAH)	Fluorene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Indeno(1,2,3-cd)pyrene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	1-Methylnaphthalene	ug/L	0.1	<0.100	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	2-Methylnaphthalene	ug/L	0.1	<0.100	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	Naphthalene	ug/L	0.2	<0.200	<0.200	<0.200	<0.200	<0.200
Polycyclic Aromatic Hydrocarbons (PAH)	Phenanthrene	ug/L	0.1	0.13	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	Pyrene	ug/L	0.02	0.123	0.062	0.063	<0.020	<0.020
Polycyclic Aromatic Hydrocarbons (PAH)	Quinoline	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050

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LAB ID				8032208-06	8032208-07	8032208-08	8032208-09
CLIENT ID				SB2	SB3	LE-1	SW1
DATE SAMPLED				2018-03-27	2018-03-27	2018-03-27	2018-03-27
DATE RECEIVED				2018-03-28	2018-03-28	2018-03-28	2018-03-28
MATRIX				Water	Water	Water	Water
General Method	Analyte	Units	MRL				
Anions	Chloride	mg/L	0.1	12.1	0.4	2640	18.7
Anions	Fluoride	mg/L	0.1	<0.10	<0.10	<0.10	<0.10
Anions	Nitrate (as N)	mg/L	0.01	0.092	0.036	1.35	0.361
Anions	Nitrite (as N)	mg/L	0.01	<0.010	<0.010	<1.00	<0.010
Anions	Sulfate	mg/L	1	24.5	9.6	1490	70.5
General Parameters	Colour, True	CU	5	<5.0	<5.0	5	<5.0
General Parameters	Alkalinity, Total (as CaCO3)	mg/L	1	85.5	8.6	61.3	118
General Parameters	Alkalinity, Phenolphthalein (as CaCO3)	mg/L	1	<1.0	<1.0	<1.0	<1.0
General Parameters	Alkalinity, Bicarbonate (as CaCO3)	mg/L	1	85.5	8.6	61.3	118
General Parameters	Alkalinity, Carbonate (as CaCO3)	mg/L	1	<1.0	<1.0	<1.0	<1.0
General Parameters	Alkalinity, Hydroxide (as CaCO3)	mg/L	1	<1.0	<1.0	<1.0	<1.0
General Parameters	Chromium, Hexavalent	mg/L	0.001				<0.0010
General Parameters	Solids, Total Suspended	mg/L	2	301	712	<2.0	<2.0
General Parameters	Turbidity	NTU	0.1	276	584	0.63	<0.10
General Parameters	pH	pH units	0.1	7	6.79	7.18	7.57
General Parameters	Conductivity (EC)	uS/cm	2	259	44.8	9810	435
Calculated Parameters	Chromium, Trivalent	mg/L	0.001				<0.00100
Calculated Parameters	Hardness, Total (as CaCO3)	mg/L	0.5	102	17.7	2530	202
Dissolved Metals	Aluminum, dissolved	mg/L	0.005	<0.0050	0.0232	0.0141	<0.0050
Dissolved Metals	Antimony, dissolved	mg/L	0.0002	<0.00020	<0.00020	0.00021	<0.00020
Dissolved Metals	Arsenic, dissolved	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Metals	Barium, dissolved	mg/L	0.005	<0.0050	<0.0050	0.045	0.0108
Dissolved Metals	Beryllium, dissolved	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals	Bismuth, dissolved	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals	Boron, dissolved	mg/L	0.005	0.0092	<0.0050	0.172	0.015
Dissolved Metals	Cadmium, dissolved	mg/L	0.00001	<0.000010	<0.000010	0.000581	<0.000010
Dissolved Metals	Calcium, dissolved	mg/L	0.2	33.1	5.73	700	66.1
Dissolved Metals	Chromium, dissolved	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Metals	Cobalt, dissolved	mg/L	0.0001	<0.00010	<0.00010	0.00611	<0.00010
Dissolved Metals	Copper, dissolved	mg/L	0.0004	0.00054	0.00047	0.00345	0.00093
Dissolved Metals	Iron, dissolved	mg/L	0.01	<0.010	0.014	<0.010	<0.010
Dissolved Metals	Lead, dissolved	mg/L	0.0002	0.00066	<0.00020	<0.00020	<0.00020
Dissolved Metals	Lithium, dissolved	mg/L	0.0001	<0.00010	<0.00010	0.00026	0.00018

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Dissolved Metals	Magnesium, dissolved	mg/L	0.01	4.61	0.832	190	8.86
Dissolved Metals	Manganese, dissolved	mg/L	0.0002	0.00378	0.00069	27.7	0.00296
Dissolved Metals	Mercury, dissolved	mg/L	0.00001	<0.000010	<0.000010	<0.000010	<0.000010
Dissolved Metals	Molybdenum, dissolved	mg/L	0.0001	0.00055	0.00021	0.00097	0.00075
Dissolved Metals	Nickel, dissolved	mg/L	0.0004	<0.00040	<0.00040	0.00673	0.00054
Dissolved Metals	Phosphorus, dissolved	mg/L	0.05	<0.050	<0.050	<0.050	<0.050
Dissolved Metals	Potassium, dissolved	mg/L	0.1	0.69	0.13	15.8	0.81
Dissolved Metals	Selenium, dissolved	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Metals	Silicon, dissolved	mg/L	1	2.6	<1.0	4.8	4.5
Dissolved Metals	Silver, dissolved	mg/L	0.00005	<0.000050	<0.000050	0.000055	<0.000050
Dissolved Metals	Sodium, dissolved	mg/L	0.1	10.6	0.81	1230	11.2
Dissolved Metals	Strontium, dissolved	mg/L	0.001	0.0979	0.0127	3.43	0.172
Dissolved Metals	Sulfur, dissolved	mg/L	3	7.8	<3.0	505	24.7
Dissolved Metals	Tellurium, dissolved	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Metals	Thallium, dissolved	mg/L	0.00002	<0.000020	<0.000020	0.000046	<0.000020
Dissolved Metals	Thorium, dissolved	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals	Tin, dissolved	mg/L	0.0002	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals	Titanium, dissolved	mg/L	0.005	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved Metals	Tungsten, dissolved	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals	Uranium, dissolved	mg/L	0.00002	0.000378	<0.000020	0.000337	0.000922
Dissolved Metals	Vanadium, dissolved	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Metals	Zinc, dissolved	mg/L	0.004	<0.0040	<0.0040	0.0193	<0.0040
Dissolved Metals	Zirconium, dissolved	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Total Metals	Aluminum, total	mg/L	0.005	13.3	25.5	0.054	0.0087
Total Metals	Antimony, total	mg/L	0.0002	<0.00020	0.0003	0.00021	<0.00020
Total Metals	Arsenic, total	mg/L	0.0005	0.00106	0.00387	<0.00050	<0.00050
Total Metals	Barium, total	mg/L	0.005	0.0612	0.107	0.0494	0.0113
Total Metals	Beryllium, total	mg/L	0.0001	0.00031	0.00047	<0.00010	<0.00010
Total Metals	Bismuth, total	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Total Metals	Boron, total	mg/L	0.005	0.0116	0.0076	0.178	0.0161
Total Metals	Cadmium, total	mg/L	0.00001	0.000035	0.000088	0.000632	<0.000010
Total Metals	Calcium, total	mg/L	0.2	41.3	15	772	68.9
Total Metals	Chromium, total	mg/L	0.0005	0.0108	0.0491	<0.00050	<0.00050
Total Metals	Cobalt, total	mg/L	0.0001	0.00938	0.0285	0.00647	<0.00010
Total Metals	Copper, total	mg/L	0.0004	0.0361	0.0799	0.00376	0.00107
Total Metals	Iron, total	mg/L	0.01	13.4	31.8	0.025	<0.010
Total Metals	Lead, total	mg/L	0.0002	0.00362	0.0152	<0.00020	<0.00020
Total Metals	Lithium, total	mg/L	0.0001	0.00387	0.0141	0.00027	0.00018
Total Metals	Magnesium, total	mg/L	0.01	8.64	11.5	205	8.8

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Total Metals	Manganese, total	mg/L	0.0002	0.521	0.589	28.9	0.00381
Total Metals	Mercury, total	mg/L	0.00001	0.000012	0.000013	0.000011	<0.000010
Total Metals	Molybdenum, total	mg/L	0.0001	0.00087	0.00049	0.00103	0.00074
Total Metals	Nickel, total	mg/L	0.0004	0.00991	0.0437	0.00702	0.00055
Total Metals	Phosphorus, total	mg/L	0.05	0.404	0.714	<0.050	<0.050
Total Metals	Potassium, total	mg/L	0.1	2.54	2.03	16.8	0.78
Total Metals	Selenium, total	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals	Silicon, total	mg/L	1	25.1	42.5	5.2	4.7
Total Metals	Silver, total	mg/L	0.00005	<0.000050	0.000073	0.000064	<0.000050
Total Metals	Sodium, total	mg/L	0.1	12	2.48	1310	11
Total Metals	Strontium, total	mg/L	0.001	0.129	0.0723	3.65	0.175
Total Metals	Sulfur, total	mg/L	3	6.2	<3.0	533	23
Total Metals	Tellurium, total	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals	Thallium, total	mg/L	0.00002	0.000044	0.000088	0.000044	<0.000020
Total Metals	Thorium, total	mg/L	0.0001	0.00053	0.00093	<0.00010	<0.00010
Total Metals	Tin, total	mg/L	0.0002	0.00025	0.00075	<0.00020	<0.00020
Total Metals	Titanium, total	mg/L	0.005	0.611	1.16	<0.0050	<0.0050
Total Metals	Tungsten, total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010
Total Metals	Uranium, total	mg/L	0.00002	0.000854	0.001	0.000349	0.000951
Total Metals	Vanadium, total	mg/L	0.001	0.026	0.0692	<0.0010	<0.0010
Total Metals	Zinc, total	mg/L	0.004	0.03	0.0813	0.0233	<0.0040
Total Metals	Zirconium, total	mg/L	0.0001	0.00155	0.00187	<0.00010	<0.00010
BCMOE Aggregate Hydrocarbons	EPHW10-19	ug/L	250	<250	<250	<250	<250
BCMOE Aggregate Hydrocarbons	EPHW19-32	ug/L	250	<250	<250	<250	<250
BCMOE Aggregate Hydrocarbons	LEPHw	ug/L	250	<250	<250	<250	<250
BCMOE Aggregate Hydrocarbons	HEPHw	ug/L	250	<250	<250	<250	<250
Polycyclic Aromatic Hydrocarbons (PAH)	Acenaphthene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Acenaphthylene	ug/L	0.2	<0.200	<0.200	<0.200	<0.200
Polycyclic Aromatic Hydrocarbons (PAH)	Acridine	ug/L	0.05	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Anthracene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Benz(a)anthracene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(a)pyrene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(b+j)fluoranthene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(g,h,i)perylene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(k)fluoranthene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	2-Chloronaphthalene	ug/L	0.1	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	Chrysene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Dibenz(a,h)anthracene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Fluoranthene	ug/L	0.03	<0.030	<0.030	<0.030	<0.030

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Polycyclic Aromatic Hydrocarbons (PAH)	Fluorene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Indeno(1,2,3-cd)pyrene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	1-Methylnaphthalene	ug/L	0.1	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	2-Methylnaphthalene	ug/L	0.1	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	Naphthalene	ug/L	0.2	<0.200	<0.200	<0.200	<0.200
Polycyclic Aromatic Hydrocarbons (PAH)	Phenanthrene	ug/L	0.1	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	Pyrene	ug/L	0.02	<0.020	<0.020	<0.020	<0.020
Polycyclic Aromatic Hydrocarbons (PAH)	Quinoline	ug/L	0.05	<0.050	<0.050	<0.050	<0.050

CERTIFICATE OF ANALYSIS

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

ATTENTION Rahim Gaidhar

PO NUMBER P15-06 SIRM

PROJECT P17-932

PROJECT INFO

WORK ORDER 8032208

RECEIVED / TEMP 2018-03-28 13:30 / 8°C

REPORTED 2018-04-09 12:07

COC NUMBER March 2018

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks



You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry



It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve



Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

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#110 4011 Viking Way Richmond, BC V6V 2K9 | #102 3677 Highway 97N Kelowna, BC V1X 5C3 | 17225 109 Avenue Edmonton, AB T5S 1H7

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
MW6 (8032208-01) Matrix: Water Sampled: 2018-03-27 08:45					
Anions					
Chloride	38.7	0.10	mg/L	2018-03-29	
Fluoride	0.16	0.10	mg/L	2018-03-29	
Nitrate (as N)	< 0.010	0.010	mg/L	2018-03-29	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-03-29	
Sulfate	87.2	1.0	mg/L	2018-03-29	
General Parameters					
Alkalinity, Total (as CaCO ₃)	624	1.0	mg/L	2018-04-04	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Bicarbonate (as CaCO ₃)	624	1.0	mg/L	2018-04-04	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2018-04-04	
Colour, True	6.3	5.0	CU	2018-04-04	HT1
Conductivity (EC)	1300	2.0	µS/cm	2018-04-04	
pH	7.29	0.10	pH units	2018-04-04	HT2
Solids, Total Suspended	10.6	2.0	mg/L	2018-04-03	
Turbidity	16.3	0.10	NTU	2018-03-29	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	584	0.500	mg/L	N/A	
Dissolved Metals					
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, dissolved	0.00348	0.00050	mg/L	2018-04-03	
Barium, dissolved	0.0784	0.0050	mg/L	2018-04-03	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, dissolved	0.0635	0.0050	mg/L	2018-04-03	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2018-04-03	
Calcium, dissolved	176	0.20	mg/L	2018-04-03	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, dissolved	0.00204	0.00010	mg/L	2018-04-03	
Copper, dissolved	< 0.00040	0.00040	mg/L	2018-04-03	
Iron, dissolved	1.69	0.010	mg/L	2018-04-03	
Lead, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, dissolved	0.0121	0.00010	mg/L	2018-04-03	
Magnesium, dissolved	35.1	0.010	mg/L	2018-04-03	
Manganese, dissolved	2.01	0.00020	mg/L	2018-04-03	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, dissolved	0.00064	0.00010	mg/L	2018-04-03	
Nickel, dissolved	0.00379	0.00040	mg/L	2018-04-03	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
MW6 (8032208-01) Matrix: Water Sampled: 2018-03-27 08:45, Continued					
<i>Dissolved Metals, Continued</i>					
Potassium, dissolved	3.75	0.10	mg/L	2018-04-03	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, dissolved	10.7	1.0	mg/L	2018-04-03	
Silver, dissolved	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, dissolved	63.7	0.10	mg/L	2018-04-03	
Strontium, dissolved	0.562	0.0010	mg/L	2018-04-03	
Sulfur, dissolved	20.9	3.0	mg/L	2018-04-03	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, dissolved	0.00738	0.000020	mg/L	2018-04-03	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, dissolved	0.00018	0.00010	mg/L	2018-04-03	
<i>Total Metals</i>					
Aluminum, total	0.323	0.0050	mg/L	2018-04-03	
Antimony, total	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, total	0.00359	0.00050	mg/L	2018-04-03	
Barium, total	0.0858	0.0050	mg/L	2018-04-03	
Beryllium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, total	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, total	0.0953	0.0050	mg/L	2018-04-03	
Cadmium, total	0.000120	0.000010	mg/L	2018-04-03	
Calcium, total	253	0.20	mg/L	2018-04-03	
Chromium, total	0.00071	0.00050	mg/L	2018-04-03	
Cobalt, total	0.00234	0.00010	mg/L	2018-04-03	
Copper, total	0.00265	0.00040	mg/L	2018-04-03	
Iron, total	1.98	0.010	mg/L	2018-04-03	
Lead, total	0.00127	0.00020	mg/L	2018-04-03	
Lithium, total	0.0187	0.00010	mg/L	2018-04-03	
Magnesium, total	35.2	0.010	mg/L	2018-04-03	
Manganese, total	1.99	0.00020	mg/L	2018-04-03	
Mercury, total	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, total	0.00100	0.00010	mg/L	2018-04-03	
Nickel, total	0.00496	0.00040	mg/L	2018-04-03	
Phosphorus, total	< 0.050	0.050	mg/L	2018-04-03	
Potassium, total	3.75	0.10	mg/L	2018-04-03	
Selenium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, total	11.7	1.0	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
MW6 (8032208-01) Matrix: Water Sampled: 2018-03-27 08:45, Continued					
Total Metals, Continued					
Silver, total	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, total	62.7	0.10	mg/L	2018-04-03	
Strontium, total	0.570	0.0010	mg/L	2018-04-03	
Sulfur, total	21.4	3.0	mg/L	2018-04-03	
Tellurium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, total	0.000078	0.000020	mg/L	2018-04-03	
Thorium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, total	0.00077	0.00020	mg/L	2018-04-03	
Titanium, total	0.0157	0.0050	mg/L	2018-04-03	
Tungsten, total	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, total	0.0103	0.000020	mg/L	2018-04-03	
Vanadium, total	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, total	0.0076	0.0040	mg/L	2018-04-03	
Zirconium, total	0.00024	0.00010	mg/L	2018-04-03	
BCMOE Aggregate Hydrocarbons					
EPHw10-19	< 250	250	µg/L	2018-03-31	
EPHw19-32	260	250	µg/L	2018-03-31	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	260	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	83	60-140	%	2018-03-31	
Polycyclic Aromatic Hydrocarbons (PAH)					
Acenaphthene	< 0.050	0.050	µg/L	2018-04-04	
Acenaphthylene	< 0.200	0.200	µg/L	2018-04-04	
Acridine	< 0.050	0.050	µg/L	2018-04-04	
Anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benz(a)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Chrysene	< 0.050	0.050	µg/L	2018-04-04	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Fluoranthene	< 0.030	0.030	µg/L	2018-04-04	
Fluorene	< 0.050	0.050	µg/L	2018-04-04	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2018-04-04	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Naphthalene	< 0.200	0.200	µg/L	2018-04-04	
Phenanthrene	0.130	0.100	µg/L	2018-04-04	
Pyrene	0.123	0.020	µg/L	2018-04-04	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW6 (8032208-01) | Matrix: Water | Sampled: 2018-03-27 08:45, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Quinoline	< 0.050	0.050	µg/L	2018-04-04	
Surrogate: Acridine-d9	75	50-140	%	2018-04-04	
Surrogate: Naphthalene-d8	70	50-140	%	2018-04-04	
Surrogate: Perylene-d12	96	50-140	%	2018-04-04	

MW3S (8032208-02) | Matrix: Water | Sampled: 2018-03-27 11:30

Anions

Chloride	7.65	0.10	mg/L	2018-03-29	
Fluoride	0.10	0.10	mg/L	2018-03-29	
Nitrate (as N)	< 0.010	0.010	mg/L	2018-03-29	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-03-29	
Sulfate	37.8	1.0	mg/L	2018-03-29	

General Parameters

Alkalinity, Total (as CaCO3)	150	1.0	mg/L	2018-04-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Bicarbonate (as CaCO3)	150	1.0	mg/L	2018-04-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Colour, True	< 5.0	5.0	CU	2018-04-04	HT1
Conductivity (EC)	343	2.0	µS/cm	2018-04-04	
pH	7.64	0.10	pH units	2018-04-04	HT2
Solids, Total Suspended	12.0	2.0	mg/L	2018-04-03	
Turbidity	11.7	0.10	NTU	2018-03-29	

Calculated Parameters

Hardness, Total (as CaCO3)	146	0.500	mg/L	N/A	
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Dissolved Metals

Aluminum, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, dissolved	0.00088	0.00050	mg/L	2018-04-03	
Barium, dissolved	0.0280	0.0050	mg/L	2018-04-03	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, dissolved	0.0163	0.0050	mg/L	2018-04-03	
Cadmium, dissolved	0.000020	0.000010	mg/L	2018-04-03	
Calcium, dissolved	47.1	0.20	mg/L	2018-04-03	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, dissolved	0.00071	0.00010	mg/L	2018-04-03	
Copper, dissolved	< 0.00040	0.00040	mg/L	2018-04-03	
Iron, dissolved	0.038	0.010	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW3S (8032208-02) | Matrix: Water | Sampled: 2018-03-27 11:30, Continued

Dissolved Metals, Continued

Lead, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, dissolved	0.00011	0.00010	mg/L	2018-04-03	
Magnesium, dissolved	6.99	0.010	mg/L	2018-04-03	
Manganese, dissolved	0.371	0.00020	mg/L	2018-04-03	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, dissolved	0.00597	0.00010	mg/L	2018-04-03	
Nickel, dissolved	0.00136	0.00040	mg/L	2018-04-03	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2018-04-03	
Potassium, dissolved	0.91	0.10	mg/L	2018-04-03	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, dissolved	5.8	1.0	mg/L	2018-04-03	
Silver, dissolved	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, dissolved	13.0	0.10	mg/L	2018-04-03	
Strontium, dissolved	0.224	0.0010	mg/L	2018-04-03	
Sulfur, dissolved	11.2	3.0	mg/L	2018-04-03	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, dissolved	0.000025	0.000020	mg/L	2018-04-03	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, dissolved	0.00105	0.000020	mg/L	2018-04-03	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	

Total Metals

Aluminum, total	0.0803	0.0050	mg/L	2018-04-03	
Antimony, total	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, total	0.00093	0.00050	mg/L	2018-04-03	
Barium, total	0.0314	0.0050	mg/L	2018-04-03	
Beryllium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, total	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, total	0.0202	0.0050	mg/L	2018-04-03	
Cadmium, total	0.000199	0.000010	mg/L	2018-04-03	
Calcium, total	49.2	0.20	mg/L	2018-04-03	
Chromium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, total	0.00078	0.00010	mg/L	2018-04-03	
Copper, total	0.00040	0.00040	mg/L	2018-04-03	
Iron, total	0.099	0.010	mg/L	2018-04-03	
Lead, total	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, total	0.00015	0.00010	mg/L	2018-04-03	
Magnesium, total	7.22	0.010	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW3S (8032208-02) | Matrix: Water | Sampled: 2018-03-27 11:30, Continued

Total Metals, Continued

Manganese, total	0.377	0.00020	mg/L	2018-04-03	
Mercury, total	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, total	0.00613	0.00010	mg/L	2018-04-03	
Nickel, total	0.00156	0.00040	mg/L	2018-04-03	
Phosphorus, total	0.055	0.050	mg/L	2018-04-03	
Potassium, total	0.92	0.10	mg/L	2018-04-03	
Selenium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, total	6.5	1.0	mg/L	2018-04-03	
Silver, total	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, total	13.3	0.10	mg/L	2018-04-03	
Strontium, total	0.230	0.0010	mg/L	2018-04-03	
Sulfur, total	11.7	3.0	mg/L	2018-04-03	
Tellurium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, total	0.000030	0.000020	mg/L	2018-04-03	
Thorium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, total	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, total	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, total	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, total	0.00106	0.000020	mg/L	2018-04-03	
Vanadium, total	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, total	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, total	0.00012	0.00010	mg/L	2018-04-03	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2018-03-31	
EPHw19-32	253	250	µg/L	2018-03-31	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	253	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	88	60-140	%	2018-03-31	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2018-04-04	
Acenaphthylene	< 0.200	0.200	µg/L	2018-04-04	
Acridine	< 0.050	0.050	µg/L	2018-04-04	
Anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benz(a)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Chrysene	< 0.050	0.050	µg/L	2018-04-04	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2018-04-04	

TEST RESULTS

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P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW3S (8032208-02) | Matrix: Water | Sampled: 2018-03-27 11:30, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Fluoranthene	< 0.030	0.030	µg/L	2018-04-04	
Fluorene	< 0.050	0.050	µg/L	2018-04-04	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2018-04-04	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Naphthalene	< 0.200	0.200	µg/L	2018-04-04	
Phenanthrene	< 0.100	0.100	µg/L	2018-04-04	
Pyrene	0.062	0.020	µg/L	2018-04-04	
Quinoline	< 0.050	0.050	µg/L	2018-04-04	
Surrogate: Acridine-d9	75	50-140	%	2018-04-04	
Surrogate: Naphthalene-d8	70	50-140	%	2018-04-04	
Surrogate: Perylene-d12	97	50-140	%	2018-04-04	

MW3D (8032208-03) | Matrix: Water | Sampled: 2018-03-27 12:00

Anions

Chloride	2.45	0.10	mg/L	2018-03-29	
Fluoride	0.12	0.10	mg/L	2018-03-29	
Nitrate (as N)	< 0.010	0.010	mg/L	2018-03-29	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-03-29	
Sulfate	21.1	1.0	mg/L	2018-03-29	

General Parameters

Alkalinity, Total (as CaCO3)	103	1.0	mg/L	2018-04-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Bicarbonate (as CaCO3)	103	1.0	mg/L	2018-04-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Colour, True	7.2	5.0	CU	2018-04-04	HT1
Conductivity (EC)	245	2.0	µS/cm	2018-04-04	
pH	7.62	0.10	pH units	2018-04-04	HT2
Solids, Total Suspended	12.2	2.0	mg/L	2018-04-03	
Turbidity	17.2	0.10	NTU	2018-03-29	

Calculated Parameters

Hardness, Total (as CaCO3)	101	0.500	mg/L	N/A	
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Dissolved Metals

Aluminum, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, dissolved	0.00115	0.00050	mg/L	2018-04-03	
Barium, dissolved	0.0178	0.0050	mg/L	2018-04-03	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
MW3D (8032208-03) Matrix: Water Sampled: 2018-03-27 12:00, Continued					
<i>Dissolved Metals, Continued</i>					
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, dissolved	0.0199	0.0050	mg/L	2018-04-03	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2018-04-03	
Calcium, dissolved	31.8	0.20	mg/L	2018-04-03	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, dissolved	0.00034	0.00010	mg/L	2018-04-03	
Copper, dissolved	< 0.00040	0.00040	mg/L	2018-04-03	
Iron, dissolved	0.080	0.010	mg/L	2018-04-03	
Lead, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Magnesium, dissolved	5.32	0.010	mg/L	2018-04-03	
Manganese, dissolved	0.268	0.00020	mg/L	2018-04-03	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, dissolved	0.00625	0.00010	mg/L	2018-04-03	
Nickel, dissolved	0.00129	0.00040	mg/L	2018-04-03	
Phosphorus, dissolved	0.080	0.050	mg/L	2018-04-03	
Potassium, dissolved	0.62	0.10	mg/L	2018-04-03	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, dissolved	5.8	1.0	mg/L	2018-04-03	
Silver, dissolved	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, dissolved	10.7	0.10	mg/L	2018-04-03	
Strontium, dissolved	0.183	0.0010	mg/L	2018-04-03	
Sulfur, dissolved	6.3	3.0	mg/L	2018-04-03	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, dissolved	0.000626	0.000020	mg/L	2018-04-03	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
<i>Total Metals</i>					
Aluminum, total	0.133	0.0050	mg/L	2018-04-03	
Antimony, total	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, total	0.00119	0.00050	mg/L	2018-04-03	
Barium, total	0.0208	0.0050	mg/L	2018-04-03	
Beryllium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, total	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, total	0.0205	0.0050	mg/L	2018-04-03	
Cadmium, total	0.000118	0.000010	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW3D (8032208-03) | Matrix: Water | Sampled: 2018-03-27 12:00, Continued

Total Metals, Continued

Calcium, total	33.6	0.20	mg/L	2018-04-03	
Chromium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, total	0.00043	0.00010	mg/L	2018-04-03	
Copper, total	0.00046	0.00040	mg/L	2018-04-03	
Iron, total	0.161	0.010	mg/L	2018-04-03	
Lead, total	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, total	0.00013	0.00010	mg/L	2018-04-03	
Magnesium, total	5.45	0.010	mg/L	2018-04-03	
Manganese, total	0.274	0.00020	mg/L	2018-04-03	
Mercury, total	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, total	0.00646	0.00010	mg/L	2018-04-03	
Nickel, total	0.00146	0.00040	mg/L	2018-04-03	
Phosphorus, total	0.099	0.050	mg/L	2018-04-03	
Potassium, total	0.61	0.10	mg/L	2018-04-03	
Selenium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, total	6.4	1.0	mg/L	2018-04-03	
Silver, total	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, total	10.6	0.10	mg/L	2018-04-03	
Strontium, total	0.191	0.0010	mg/L	2018-04-03	
Sulfur, total	4.5	3.0	mg/L	2018-04-03	
Tellurium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, total	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, total	0.00018	0.00010	mg/L	2018-04-03	
Tin, total	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, total	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, total	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, total	0.000714	0.000020	mg/L	2018-04-03	
Vanadium, total	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, total	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, total	0.00017	0.00010	mg/L	2018-04-03	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2018-03-31	
EPHw19-32	252	250	µg/L	2018-03-31	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	251	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	82	60-140	%	2018-03-31	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2018-04-04	
Acenaphthylene	< 0.200	0.200	µg/L	2018-04-04	
Acridine	< 0.050	0.050	µg/L	2018-04-04	
Anthracene	< 0.010	0.010	µg/L	2018-04-04	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW3D (8032208-03) | Matrix: Water | Sampled: 2018-03-27 12:00, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Benz(a)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Chrysene	< 0.050	0.050	µg/L	2018-04-04	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Fluoranthene	< 0.030	0.030	µg/L	2018-04-04	
Fluorene	< 0.050	0.050	µg/L	2018-04-04	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2018-04-04	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Naphthalene	< 0.200	0.200	µg/L	2018-04-04	
Phenanthrene	< 0.100	0.100	µg/L	2018-04-04	
Pyrene	0.063	0.020	µg/L	2018-04-04	
Quinoline	< 0.050	0.050	µg/L	2018-04-04	
Surrogate: Acridine-d9	75	50-140	%	2018-04-04	
Surrogate: Naphthalene-d8	72	50-140	%	2018-04-04	
Surrogate: Perylene-d12	93	50-140	%	2018-04-04	

MW2 (8032208-04) | Matrix: Water | Sampled: 2018-03-27 13:00

Anions

Chloride	5.04	0.10	mg/L	2018-03-29	
Fluoride	0.23	0.10	mg/L	2018-03-29	
Nitrate (as N)	< 0.010	0.010	mg/L	2018-03-29	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-03-29	
Sulfate	18.2	1.0	mg/L	2018-03-29	

General Parameters

Alkalinity, Total (as CaCO3)	125	1.0	mg/L	2018-04-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Bicarbonate (as CaCO3)	125	1.0	mg/L	2018-04-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Colour, True	7.1	5.0	CU	2018-04-04	HT1
Conductivity (EC)	286	2.0	µS/cm	2018-04-04	
pH	7.75	0.10	pH units	2018-04-04	HT2
Solids, Total Suspended	22.2	2.0	mg/L	2018-04-03	
Turbidity	19.0	0.10	NTU	2018-03-29	

Calculated Parameters

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
MW2 (8032208-04) Matrix: Water Sampled: 2018-03-27 13:00, Continued					
Calculated Parameters, Continued					
Hardness, Total (as CaCO ₃)	126	0.500	mg/L	N/A	
Dissolved Metals					
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, dissolved	0.00185	0.00050	mg/L	2018-04-03	
Barium, dissolved	0.0289	0.0050	mg/L	2018-04-03	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, dissolved	0.0190	0.0050	mg/L	2018-04-03	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2018-04-03	
Calcium, dissolved	39.1	0.20	mg/L	2018-04-03	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, dissolved	0.00035	0.00010	mg/L	2018-04-03	
Copper, dissolved	< 0.00040	0.00040	mg/L	2018-04-03	
Iron, dissolved	0.233	0.010	mg/L	2018-04-03	
Lead, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Magnesium, dissolved	6.93	0.010	mg/L	2018-04-03	
Manganese, dissolved	0.434	0.00020	mg/L	2018-04-03	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, dissolved	0.00391	0.00010	mg/L	2018-04-03	
Nickel, dissolved	0.00085	0.00040	mg/L	2018-04-03	
Phosphorus, dissolved	0.133	0.050	mg/L	2018-04-03	
Potassium, dissolved	0.69	0.10	mg/L	2018-04-03	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, dissolved	6.1	1.0	mg/L	2018-04-03	
Silver, dissolved	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, dissolved	9.00	0.10	mg/L	2018-04-03	
Strontium, dissolved	0.160	0.0010	mg/L	2018-04-03	
Sulfur, dissolved	5.2	3.0	mg/L	2018-04-03	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, dissolved	0.000816	0.000020	mg/L	2018-04-03	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	

Total Metals

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW2 (8032208-04) | Matrix: Water | Sampled: 2018-03-27 13:00, Continued

Total Metals, Continued

Aluminum, total	0.569	0.0050	mg/L	2018-04-03	
Antimony, total	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, total	0.00189	0.00050	mg/L	2018-04-03	
Barium, total	0.0337	0.0050	mg/L	2018-04-03	
Beryllium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, total	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, total	0.0197	0.0050	mg/L	2018-04-03	
Cadmium, total	0.000034	0.000010	mg/L	2018-04-03	
Calcium, total	41.0	0.20	mg/L	2018-04-03	
Chromium, total	0.00080	0.00050	mg/L	2018-04-03	
Cobalt, total	0.00072	0.00010	mg/L	2018-04-03	
Copper, total	0.00084	0.00040	mg/L	2018-04-03	
Iron, total	1.04	0.010	mg/L	2018-04-03	
Lead, total	0.00028	0.00020	mg/L	2018-04-03	
Lithium, total	0.00019	0.00010	mg/L	2018-04-03	
Magnesium, total	7.37	0.010	mg/L	2018-04-03	
Manganese, total	0.457	0.00020	mg/L	2018-04-03	
Mercury, total	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, total	0.00418	0.00010	mg/L	2018-04-03	
Nickel, total	0.00166	0.00040	mg/L	2018-04-03	
Phosphorus, total	0.159	0.050	mg/L	2018-04-03	
Potassium, total	0.71	0.10	mg/L	2018-04-03	
Selenium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, total	7.5	1.0	mg/L	2018-04-03	
Silver, total	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, total	9.04	0.10	mg/L	2018-04-03	
Strontium, total	0.169	0.0010	mg/L	2018-04-03	
Sulfur, total	3.7	3.0	mg/L	2018-04-03	
Tellurium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, total	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, total	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, total	0.0350	0.0050	mg/L	2018-04-03	
Tungsten, total	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, total	0.000861	0.000020	mg/L	2018-04-03	
Vanadium, total	0.0023	0.0010	mg/L	2018-04-03	
Zinc, total	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, total	0.00018	0.00010	mg/L	2018-04-03	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2018-03-31	
EPHw19-32	< 250	250	µg/L	2018-03-31	
LEPHw	< 250	250	µg/L	N/A	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW2 (8032208-04) | Matrix: Water | Sampled: 2018-03-27 13:00, Continued

BCMOE Aggregate Hydrocarbons, Continued

HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	81	60-140	%	2018-03-31	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2018-04-04	
Acenaphthylene	< 0.200	0.200	µg/L	2018-04-04	
Acridine	< 0.050	0.050	µg/L	2018-04-04	
Anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benz(a)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Chrysene	< 0.050	0.050	µg/L	2018-04-04	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Fluoranthene	< 0.030	0.030	µg/L	2018-04-04	
Fluorene	< 0.050	0.050	µg/L	2018-04-04	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2018-04-04	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Naphthalene	< 0.200	0.200	µg/L	2018-04-04	
Phenanthrene	< 0.100	0.100	µg/L	2018-04-04	
Pyrene	< 0.020	0.020	µg/L	2018-04-04	
Quinoline	< 0.050	0.050	µg/L	2018-04-04	
Surrogate: Acridine-d9	76	50-140	%	2018-04-04	
Surrogate: Naphthalene-d8	71	50-140	%	2018-04-04	
Surrogate: Perylene-d12	95	50-140	%	2018-04-04	

SB1 (8032208-05) | Matrix: Water | Sampled: 2018-03-27 11:00

Anions

Chloride	0.42	0.10	mg/L	2018-03-29	
Fluoride	0.11	0.10	mg/L	2018-03-29	
Nitrate (as N)	0.046	0.010	mg/L	2018-03-29	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-03-29	
Sulfate	7.8	1.0	mg/L	2018-03-29	

General Parameters

Alkalinity, Total (as CaCO3)	9.3	1.0	mg/L	2018-04-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Bicarbonate (as CaCO3)	9.3	1.0	mg/L	2018-04-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
SB1 (8032208-05) Matrix: Water Sampled: 2018-03-27 11:00, Continued					
General Parameters, Continued					
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2018-04-04	
Colour, True	< 5.0	5.0	CU	2018-04-04	HT1
Conductivity (EC)	41.2	2.0	µS/cm	2018-04-04	
pH	6.87	0.10	pH units	2018-04-04	HT2
Solids, Total Suspended	160	2.0	mg/L	2018-04-03	
Turbidity	182	0.10	NTU	2018-03-29	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	15.9	0.500	mg/L	N/A	
Dissolved Metals					
Aluminum, dissolved	0.0102	0.0050	mg/L	2018-04-03	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Barium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2018-04-03	
Calcium, dissolved	5.64	0.20	mg/L	2018-04-03	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Copper, dissolved	0.00040	0.00040	mg/L	2018-04-03	
Iron, dissolved	0.010	0.010	mg/L	2018-04-03	
Lead, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Magnesium, dissolved	0.451	0.010	mg/L	2018-04-03	
Manganese, dissolved	0.00055	0.00020	mg/L	2018-04-03	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, dissolved	0.00022	0.00010	mg/L	2018-04-03	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2018-04-03	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2018-04-03	
Potassium, dissolved	0.10	0.10	mg/L	2018-04-03	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, dissolved	< 1.0	1.0	mg/L	2018-04-03	
Silver, dissolved	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, dissolved	0.75	0.10	mg/L	2018-04-03	
Strontium, dissolved	0.0121	0.0010	mg/L	2018-04-03	
Sulfur, dissolved	< 3.0	3.0	mg/L	2018-04-03	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
SB1 (8032208-05) Matrix: Water Sampled: 2018-03-27 11:00, Continued					
<i>Dissolved Metals, Continued</i>					
Titanium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, dissolved	< 0.000020	0.000020	mg/L	2018-04-03	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
<i>Total Metals</i>					
Aluminum, total	7.49	0.0050	mg/L	2018-04-03	
Antimony, total	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, total	0.00078	0.00050	mg/L	2018-04-03	
Barium, total	0.0374	0.0050	mg/L	2018-04-03	
Beryllium, total	0.00014	0.00010	mg/L	2018-04-03	
Bismuth, total	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, total	< 0.0050	0.0050	mg/L	2018-04-03	
Cadmium, total	0.000027	0.000010	mg/L	2018-04-03	
Calcium, total	8.63	0.20	mg/L	2018-04-03	
Chromium, total	0.00898	0.00050	mg/L	2018-04-03	
Cobalt, total	0.00757	0.00010	mg/L	2018-04-03	
Copper, total	0.0199	0.00040	mg/L	2018-04-03	
Iron, total	7.64	0.010	mg/L	2018-04-03	
Lead, total	0.00850	0.00020	mg/L	2018-04-03	
Lithium, total	0.00251	0.00010	mg/L	2018-04-03	
Magnesium, total	2.79	0.010	mg/L	2018-04-03	
Manganese, total	0.230	0.00020	mg/L	2018-04-03	
Mercury, total	0.000017	0.000010	mg/L	2018-04-09	
Molybdenum, total	0.00031	0.00010	mg/L	2018-04-03	
Nickel, total	0.00740	0.00040	mg/L	2018-04-03	
Phosphorus, total	0.160	0.050	mg/L	2018-04-03	
Potassium, total	0.67	0.10	mg/L	2018-04-03	
Selenium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, total	11.5	1.0	mg/L	2018-04-03	
Silver, total	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, total	1.19	0.10	mg/L	2018-04-03	
Strontium, total	0.0265	0.0010	mg/L	2018-04-03	
Sulfur, total	< 3.0	3.0	mg/L	2018-04-03	
Tellurium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, total	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, total	0.00017	0.00010	mg/L	2018-04-03	
Tin, total	0.00050	0.00020	mg/L	2018-04-03	
Titanium, total	0.359	0.0050	mg/L	2018-04-03	
Tungsten, total	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, total	0.000367	0.000020	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
SB1 (8032208-05) Matrix: Water Sampled: 2018-03-27 11:00, Continued					
<i>Total Metals, Continued</i>					
Vanadium, total	0.0188	0.0010	mg/L	2018-04-03	
Zinc, total	0.0213	0.0040	mg/L	2018-04-03	
Zirconium, total	0.00087	0.00010	mg/L	2018-04-03	
<i>BCMOE Aggregate Hydrocarbons</i>					
EPHw10-19	< 250	250	µg/L	2018-03-31	
EPHw19-32	< 250	250	µg/L	2018-03-31	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	85	60-140	%	2018-03-31	
<i>Polycyclic Aromatic Hydrocarbons (PAH)</i>					
Acenaphthene	< 0.050	0.050	µg/L	2018-04-04	
Acenaphthylene	< 0.200	0.200	µg/L	2018-04-04	
Acridine	< 0.050	0.050	µg/L	2018-04-04	
Anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benz(a)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Chrysene	< 0.050	0.050	µg/L	2018-04-04	
Dibenz(a,h)anthracene	0.020	0.010	µg/L	2018-04-04	
Fluoranthene	< 0.030	0.030	µg/L	2018-04-04	
Fluorene	< 0.050	0.050	µg/L	2018-04-04	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2018-04-04	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Naphthalene	< 0.200	0.200	µg/L	2018-04-04	
Phenanthrene	< 0.100	0.100	µg/L	2018-04-04	
Pyrene	< 0.020	0.020	µg/L	2018-04-04	
Quinoline	< 0.050	0.050	µg/L	2018-04-04	
Surrogate: Acridine-d9	73	50-140	%	2018-04-04	
Surrogate: Naphthalene-d8	76	50-140	%	2018-04-04	
Surrogate: Perylene-d12	105	50-140	%	2018-04-04	

SB2 (8032208-06) | Matrix: Water | Sampled: 2018-03-27 10:20

Anions

Chloride	12.1	0.10	mg/L	2018-03-29	
Fluoride	< 0.10	0.10	mg/L	2018-03-29	
Nitrate (as N)	0.092	0.010	mg/L	2018-03-29	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
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WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
SB2 (8032208-06) Matrix: Water Sampled: 2018-03-27 10:20, Continued					
Anions, Continued					
Nitrite (as N)	< 0.010	0.010	mg/L	2018-03-29	
Sulfate	24.5	1.0	mg/L	2018-03-29	
General Parameters					
Alkalinity, Total (as CaCO ₃)	85.5	1.0	mg/L	2018-04-04	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Bicarbonate (as CaCO ₃)	85.5	1.0	mg/L	2018-04-04	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2018-04-04	
Colour, True	< 5.0	5.0	CU	2018-04-04	HT1
Conductivity (EC)	259	2.0	µS/cm	2018-04-04	
pH	7.00	0.10	pH units	2018-04-04	HT2
Solids, Total Suspended	301	2.0	mg/L	2018-04-03	
Turbidity	276	0.10	NTU	2018-03-29	
Calculated Parameters					
Hardness, Total (as CaCO ₃)	102	0.500	mg/L	N/A	
Dissolved Metals					
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Barium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, dissolved	0.0092	0.0050	mg/L	2018-04-03	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2018-04-03	
Calcium, dissolved	33.1	0.20	mg/L	2018-04-03	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Copper, dissolved	0.00054	0.00040	mg/L	2018-04-03	
Iron, dissolved	< 0.010	0.010	mg/L	2018-04-03	
Lead, dissolved	0.00066	0.00020	mg/L	2018-04-03	
Lithium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Magnesium, dissolved	4.61	0.010	mg/L	2018-04-03	
Manganese, dissolved	0.00378	0.00020	mg/L	2018-04-03	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, dissolved	0.00055	0.00010	mg/L	2018-04-03	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2018-04-03	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2018-04-03	
Potassium, dissolved	0.69	0.10	mg/L	2018-04-03	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, dissolved	2.6	1.0	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
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WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
SB2 (8032208-06) Matrix: Water Sampled: 2018-03-27 10:20, Continued					
<i>Dissolved Metals, Continued</i>					
Silver, dissolved	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, dissolved	10.6	0.10	mg/L	2018-04-03	
Strontium, dissolved	0.0979	0.0010	mg/L	2018-04-03	
Sulfur, dissolved	7.8	3.0	mg/L	2018-04-03	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, dissolved	0.000378	0.000020	mg/L	2018-04-03	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
<i>Total Metals</i>					
Aluminum, total	13.3	0.0050	mg/L	2018-04-03	
Antimony, total	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, total	0.00106	0.00050	mg/L	2018-04-03	
Barium, total	0.0612	0.0050	mg/L	2018-04-03	
Beryllium, total	0.00031	0.00010	mg/L	2018-04-03	
Bismuth, total	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, total	0.0116	0.0050	mg/L	2018-04-03	
Cadmium, total	0.000035	0.000010	mg/L	2018-04-03	
Calcium, total	41.3	0.20	mg/L	2018-04-03	
Chromium, total	0.0108	0.00050	mg/L	2018-04-03	
Cobalt, total	0.00938	0.00010	mg/L	2018-04-03	
Copper, total	0.0361	0.00040	mg/L	2018-04-03	
Iron, total	13.4	0.010	mg/L	2018-04-03	
Lead, total	0.00362	0.00020	mg/L	2018-04-03	
Lithium, total	0.00387	0.00010	mg/L	2018-04-03	
Magnesium, total	8.64	0.010	mg/L	2018-04-03	
Manganese, total	0.521	0.00020	mg/L	2018-04-03	
Mercury, total	0.000012	0.000010	mg/L	2018-04-09	
Molybdenum, total	0.00087	0.00010	mg/L	2018-04-03	
Nickel, total	0.00991	0.00040	mg/L	2018-04-03	
Phosphorus, total	0.404	0.050	mg/L	2018-04-03	
Potassium, total	2.54	0.10	mg/L	2018-04-03	
Selenium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, total	25.1	1.0	mg/L	2018-04-03	
Silver, total	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, total	12.0	0.10	mg/L	2018-04-03	
Strontium, total	0.129	0.0010	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB2 (8032208-06) | Matrix: Water | Sampled: 2018-03-27 10:20, Continued

Total Metals, Continued

Sulfur, total	6.2	3.0	mg/L	2018-04-03	
Tellurium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, total	0.000044	0.000020	mg/L	2018-04-03	
Thorium, total	0.00053	0.00010	mg/L	2018-04-03	
Tin, total	0.00025	0.00020	mg/L	2018-04-03	
Titanium, total	0.611	0.0050	mg/L	2018-04-03	
Tungsten, total	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, total	0.000854	0.000020	mg/L	2018-04-03	
Vanadium, total	0.0260	0.0010	mg/L	2018-04-03	
Zinc, total	0.0300	0.0040	mg/L	2018-04-03	
Zirconium, total	0.00155	0.00010	mg/L	2018-04-03	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2018-03-31	
EPHw19-32	< 250	250	µg/L	2018-03-31	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	80	60-140	%	2018-03-31	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2018-04-04	
Acenaphthylene	< 0.200	0.200	µg/L	2018-04-04	
Acridine	< 0.050	0.050	µg/L	2018-04-04	
Anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benz(a)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Chrysene	< 0.050	0.050	µg/L	2018-04-04	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Fluoranthene	< 0.030	0.030	µg/L	2018-04-04	
Fluorene	< 0.050	0.050	µg/L	2018-04-04	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2018-04-04	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Naphthalene	< 0.200	0.200	µg/L	2018-04-04	
Phenanthrene	< 0.100	0.100	µg/L	2018-04-04	
Pyrene	< 0.020	0.020	µg/L	2018-04-04	
Quinoline	< 0.050	0.050	µg/L	2018-04-04	
Surrogate: Acridine-d9	71	50-140	%	2018-04-04	
Surrogate: Naphthalene-d8	72	50-140	%	2018-04-04	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB2 (8032208-06) | Matrix: Water | Sampled: 2018-03-27 10:20, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Surrogate: Perylene-d12	100	50-140	%	2018-04-04	
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SB3 (8032208-07) | Matrix: Water | Sampled: 2018-03-27 09:45

Anions

Chloride	0.40	0.10	mg/L	2018-03-29	
Fluoride	< 0.10	0.10	mg/L	2018-03-29	
Nitrate (as N)	0.036	0.010	mg/L	2018-03-29	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-03-29	
Sulfate	9.6	1.0	mg/L	2018-03-29	

General Parameters

Alkalinity, Total (as CaCO3)	8.6	1.0	mg/L	2018-04-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Bicarbonate (as CaCO3)	8.6	1.0	mg/L	2018-04-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Colour, True	< 5.0	5.0	CU	2018-04-04	HT1
Conductivity (EC)	44.8	2.0	µS/cm	2018-04-04	
pH	6.79	0.10	pH units	2018-04-04	HT2
Solids, Total Suspended	712	2.0	mg/L	2018-04-03	
Turbidity	584	0.10	NTU	2018-03-29	

Calculated Parameters

Hardness, Total (as CaCO3)	17.7	0.500	mg/L	N/A	
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Dissolved Metals

Aluminum, dissolved	0.0232	0.0050	mg/L	2018-04-03	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Barium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2018-04-03	
Calcium, dissolved	5.73	0.20	mg/L	2018-04-03	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Copper, dissolved	0.00047	0.00040	mg/L	2018-04-03	
Iron, dissolved	0.014	0.010	mg/L	2018-04-03	
Lead, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Magnesium, dissolved	0.832	0.010	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB3 (8032208-07) | Matrix: Water | Sampled: 2018-03-27 09:45, Continued

Dissolved Metals, Continued

Manganese, dissolved	0.00069	0.00020	mg/L	2018-04-03	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, dissolved	0.00021	0.00010	mg/L	2018-04-03	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2018-04-03	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2018-04-03	
Potassium, dissolved	0.13	0.10	mg/L	2018-04-03	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, dissolved	< 1.0	1.0	mg/L	2018-04-03	
Silver, dissolved	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, dissolved	0.81	0.10	mg/L	2018-04-03	
Strontium, dissolved	0.0127	0.0010	mg/L	2018-04-03	
Sulfur, dissolved	< 3.0	3.0	mg/L	2018-04-03	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, dissolved	< 0.000020	0.000020	mg/L	2018-04-03	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	

Total Metals

Aluminum, total	25.5	0.0050	mg/L	2018-04-04	
Antimony, total	0.00030	0.00020	mg/L	2018-04-03	
Arsenic, total	0.00387	0.00050	mg/L	2018-04-03	
Barium, total	0.107	0.0050	mg/L	2018-04-03	
Beryllium, total	0.00047	0.00010	mg/L	2018-04-03	
Bismuth, total	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, total	0.0076	0.0050	mg/L	2018-04-03	
Cadmium, total	0.000088	0.000010	mg/L	2018-04-03	
Calcium, total	15.0	0.20	mg/L	2018-04-03	
Chromium, total	0.0491	0.00050	mg/L	2018-04-03	
Cobalt, total	0.0285	0.00010	mg/L	2018-04-03	
Copper, total	0.0799	0.00040	mg/L	2018-04-03	
Iron, total	31.8	0.010	mg/L	2018-04-03	
Lead, total	0.0152	0.00020	mg/L	2018-04-03	
Lithium, total	0.0141	0.00010	mg/L	2018-04-03	
Magnesium, total	11.5	0.010	mg/L	2018-04-03	
Manganese, total	0.589	0.00020	mg/L	2018-04-03	
Mercury, total	0.000013	0.000010	mg/L	2018-04-09	
Molybdenum, total	0.00049	0.00010	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB3 (8032208-07) | Matrix: Water | Sampled: 2018-03-27 09:45, Continued

Total Metals, Continued

Nickel, total	0.0437	0.00040	mg/L	2018-04-03	
Phosphorus, total	0.714	0.050	mg/L	2018-04-03	
Potassium, total	2.03	0.10	mg/L	2018-04-03	
Selenium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, total	42.5	1.0	mg/L	2018-04-03	
Silver, total	0.000073	0.000050	mg/L	2018-04-03	
Sodium, total	2.48	0.10	mg/L	2018-04-03	
Strontium, total	0.0723	0.0010	mg/L	2018-04-03	
Sulfur, total	< 3.0	3.0	mg/L	2018-04-03	
Tellurium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, total	0.000088	0.000020	mg/L	2018-04-03	
Thorium, total	0.00093	0.00010	mg/L	2018-04-03	
Tin, total	0.00075	0.00020	mg/L	2018-04-03	
Titanium, total	1.16	0.0050	mg/L	2018-04-03	
Tungsten, total	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, total	0.00100	0.000020	mg/L	2018-04-03	
Vanadium, total	0.0692	0.0010	mg/L	2018-04-03	
Zinc, total	0.0813	0.0040	mg/L	2018-04-03	
Zirconium, total	0.00187	0.00010	mg/L	2018-04-03	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2018-03-31	
EPHw19-32	< 250	250	µg/L	2018-03-31	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	80	60-140	%	2018-03-31	

Polycyclic Aromatic Hydrocarbons (PAH)

S09

Acenaphthene	< 0.050	0.050	µg/L	2018-04-04	
Acenaphthylene	< 0.200	0.200	µg/L	2018-04-04	
Acridine	< 0.050	0.050	µg/L	2018-04-04	
Anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benz(a)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Chrysene	< 0.050	0.050	µg/L	2018-04-04	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Fluoranthene	< 0.030	0.030	µg/L	2018-04-04	
Fluorene	< 0.050	0.050	µg/L	2018-04-04	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2018-04-04	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
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Analyte	Result	RL	Units	Analyzed	Qualifier
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SB3 (8032208-07) | Matrix: Water | Sampled: 2018-03-27 09:45, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued					S09
1-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Naphthalene	< 0.200	0.200	µg/L	2018-04-04	
Phenanthrene	< 0.100	0.100	µg/L	2018-04-04	
Pyrene	< 0.020	0.020	µg/L	2018-04-04	
Quinoline	< 0.050	0.050	µg/L	2018-04-04	
Surrogate: Acridine-d9	38	50-140	%	2018-04-04	
Surrogate: Naphthalene-d8	39	50-140	%	2018-04-04	
Surrogate: Perylene-d12	51	50-140	%	2018-04-04	

LE-1 (8032208-08) | Matrix: Water | Sampled: 2018-03-27 13:30

Anions					
Chloride	2640	0.10	mg/L	2018-03-29	
Fluoride	< 0.10	0.10	mg/L	2018-03-29	
Nitrate (as N)	1.35	0.010	mg/L	2018-03-29	
Nitrite (as N)	< 1.00	0.010	mg/L	2018-03-29	
Sulfate	1490	1.0	mg/L	2018-03-29	

General Parameters					
Alkalinity, Total (as CaCO3)	61.3	1.0	mg/L	2018-04-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Bicarbonate (as CaCO3)	61.3	1.0	mg/L	2018-04-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Colour, True	5.0	5.0	CU	2018-04-04	HT1
Conductivity (EC)	9810	2.0	µS/cm	2018-04-04	
pH	7.18	0.10	pH units	2018-04-04	HT2
Solids, Total Suspended	< 2.0	2.0	mg/L	2018-04-03	
Turbidity	0.63	0.10	NTU	2018-03-29	

Calculated Parameters					
Hardness, Total (as CaCO3)	2530	0.500	mg/L	N/A	

Dissolved Metals					
Aluminum, dissolved	0.0141	0.0050	mg/L	2018-04-03	
Antimony, dissolved	0.00021	0.00020	mg/L	2018-04-03	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Barium, dissolved	0.0450	0.0050	mg/L	2018-04-03	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, dissolved	0.172	0.0050	mg/L	2018-04-03	
Cadmium, dissolved	0.000581	0.000010	mg/L	2018-04-03	

TEST RESULTS

REPORTED TO PROJECT Allterra Construction
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WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL	Units	Analyzed	Qualifier
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LE-1 (8032208-08) | Matrix: Water | Sampled: 2018-03-27 13:30, Continued

Dissolved Metals, Continued

Calcium, dissolved	700	0.20	mg/L	2018-04-03	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, dissolved	0.00611	0.00010	mg/L	2018-04-03	
Copper, dissolved	0.00345	0.00040	mg/L	2018-04-03	
Iron, dissolved	< 0.010	0.010	mg/L	2018-04-03	
Lead, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, dissolved	0.00026	0.00010	mg/L	2018-04-03	
Magnesium, dissolved	190	0.010	mg/L	2018-04-03	
Manganese, dissolved	27.7	0.00020	mg/L	2018-04-03	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, dissolved	0.00097	0.00010	mg/L	2018-04-03	
Nickel, dissolved	0.00673	0.00040	mg/L	2018-04-03	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2018-04-03	
Potassium, dissolved	15.8	0.10	mg/L	2018-04-03	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, dissolved	4.8	1.0	mg/L	2018-04-03	
Silver, dissolved	0.000055	0.000050	mg/L	2018-04-03	
Sodium, dissolved	1230	0.10	mg/L	2018-04-03	
Strontium, dissolved	3.43	0.0010	mg/L	2018-04-03	
Sulfur, dissolved	505	3.0	mg/L	2018-04-03	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, dissolved	0.000046	0.000020	mg/L	2018-04-03	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, dissolved	0.000337	0.000020	mg/L	2018-04-03	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, dissolved	0.0193	0.0040	mg/L	2018-04-03	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	

Total Metals

Aluminum, total	0.0540	0.0050	mg/L	2018-04-03	
Antimony, total	0.00021	0.00020	mg/L	2018-04-03	
Arsenic, total	< 0.00050	0.00050	mg/L	2018-04-03	
Barium, total	0.0494	0.0050	mg/L	2018-04-03	
Beryllium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, total	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, total	0.178	0.0050	mg/L	2018-04-03	
Cadmium, total	0.000632	0.000010	mg/L	2018-04-03	
Calcium, total	772	0.20	mg/L	2018-04-03	
Chromium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, total	0.00647	0.00010	mg/L	2018-04-03	

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REPORTED TO PROJECT Allterra Construction
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Analyte	Result	RL	Units	Analyzed	Qualifier
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LE-1 (8032208-08) | Matrix: Water | Sampled: 2018-03-27 13:30, Continued

Total Metals, Continued

Copper, total	0.00376	0.00040	mg/L	2018-04-03	
Iron, total	0.025	0.010	mg/L	2018-04-03	
Lead, total	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, total	0.00027	0.00010	mg/L	2018-04-03	
Magnesium, total	205	0.010	mg/L	2018-04-03	
Manganese, total	28.9	0.00020	mg/L	2018-04-03	
Mercury, total	0.000011	0.000010	mg/L	2018-04-09	
Molybdenum, total	0.00103	0.00010	mg/L	2018-04-03	
Nickel, total	0.00702	0.00040	mg/L	2018-04-03	
Phosphorus, total	< 0.050	0.050	mg/L	2018-04-03	
Potassium, total	16.8	0.10	mg/L	2018-04-03	
Selenium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, total	5.2	1.0	mg/L	2018-04-03	
Silver, total	0.000064	0.000050	mg/L	2018-04-03	
Sodium, total	1310	0.10	mg/L	2018-04-03	
Strontium, total	3.65	0.0010	mg/L	2018-04-03	
Sulfur, total	533	3.0	mg/L	2018-04-03	
Tellurium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, total	0.000044	0.000020	mg/L	2018-04-03	
Thorium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, total	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, total	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, total	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, total	0.000349	0.000020	mg/L	2018-04-03	
Vanadium, total	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, total	0.0233	0.0040	mg/L	2018-04-03	
Zirconium, total	< 0.00010	0.00010	mg/L	2018-04-03	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2018-03-31	
EPHw19-32	< 250	250	µg/L	2018-03-31	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	81	60-140	%	2018-03-31	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2018-04-04	
Acenaphthylene	< 0.200	0.200	µg/L	2018-04-04	
Acridine	< 0.050	0.050	µg/L	2018-04-04	
Anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benz(a)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-04-04	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	

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Analyte	Result	RL	Units	Analyzed	Qualifier
LE-1 (8032208-08) Matrix: Water Sampled: 2018-03-27 13:30, Continued					
<i>Polycyclic Aromatic Hydrocarbons (PAH), Continued</i>					
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2018-04-04	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2018-04-04	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Chrysene	< 0.050	0.050	µg/L	2018-04-04	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2018-04-04	
Fluoranthene	< 0.030	0.030	µg/L	2018-04-04	
Fluorene	< 0.050	0.050	µg/L	2018-04-04	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2018-04-04	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-04	
Naphthalene	< 0.200	0.200	µg/L	2018-04-04	
Phenanthrene	< 0.100	0.100	µg/L	2018-04-04	
Pyrene	< 0.020	0.020	µg/L	2018-04-04	
Quinoline	< 0.050	0.050	µg/L	2018-04-04	
Surrogate: Acridine-d9	77	50-140	%	2018-04-04	
Surrogate: Naphthalene-d8	74	50-140	%	2018-04-04	
Surrogate: Perylene-d12	96	50-140	%	2018-04-04	

SW1 (8032208-09) | Matrix: Water | Sampled: 2018-03-27 12:30

Anions

Chloride	18.7	0.10	mg/L	2018-03-29	
Fluoride	< 0.10	0.10	mg/L	2018-03-29	
Nitrate (as N)	0.361	0.010	mg/L	2018-03-29	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-03-29	
Sulfate	70.5	1.0	mg/L	2018-03-29	

General Parameters

Alkalinity, Total (as CaCO3)	118	1.0	mg/L	2018-04-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Bicarbonate (as CaCO3)	118	1.0	mg/L	2018-04-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2018-04-04	
Chromium, Hexavalent	< 0.0010	0.0010	mg/L	2018-04-05	CR6
Colour, True	< 5.0	5.0	CU	2018-04-04	HT1
Conductivity (EC)	435	2.0	µS/cm	2018-04-04	
pH	7.57	0.10	pH units	2018-04-04	HT2
Solids, Total Suspended	< 2.0	2.0	mg/L	2018-04-03	
Turbidity	< 0.10	0.10	NTU	2018-03-29	

Calculated Parameters

Chromium, Trivalent	< 0.00100	0.00100	mg/L	N/A	
Hardness, Total (as CaCO3)	202	0.500	mg/L	N/A	

TEST RESULTS

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WORK ORDER REPORTED 8032208
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Analyte	Result	RL	Units	Analyzed	Qualifier
SW1 (8032208-09) Matrix: Water Sampled: 2018-03-27 12:30, Continued					
Dissolved Metals					
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Barium, dissolved	0.0108	0.0050	mg/L	2018-04-03	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, dissolved	0.0150	0.0050	mg/L	2018-04-03	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2018-04-03	
Calcium, dissolved	66.1	0.20	mg/L	2018-04-03	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Copper, dissolved	0.00093	0.00040	mg/L	2018-04-03	
Iron, dissolved	< 0.010	0.010	mg/L	2018-04-03	
Lead, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, dissolved	0.00018	0.00010	mg/L	2018-04-03	
Magnesium, dissolved	8.86	0.010	mg/L	2018-04-03	
Manganese, dissolved	0.00296	0.00020	mg/L	2018-04-03	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, dissolved	0.00075	0.00010	mg/L	2018-04-03	
Nickel, dissolved	0.00054	0.00040	mg/L	2018-04-03	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2018-04-03	
Potassium, dissolved	0.81	0.10	mg/L	2018-04-03	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, dissolved	4.5	1.0	mg/L	2018-04-03	
Silver, dissolved	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, dissolved	11.2	0.10	mg/L	2018-04-03	
Strontium, dissolved	0.172	0.0010	mg/L	2018-04-03	
Sulfur, dissolved	24.7	3.0	mg/L	2018-04-03	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, dissolved	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, dissolved	0.000922	0.000020	mg/L	2018-04-03	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2018-04-03	
Total Metals					
Aluminum, total	0.0087	0.0050	mg/L	2018-04-03	
Antimony, total	< 0.00020	0.00020	mg/L	2018-04-03	
Arsenic, total	< 0.00050	0.00050	mg/L	2018-04-03	

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Analyte	Result	RL	Units	Analyzed	Qualifier
SW1 (8032208-09) Matrix: Water Sampled: 2018-03-27 12:30, Continued					
Total Metals, Continued					
Barium, total	0.0113	0.0050	mg/L	2018-04-03	
Beryllium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Bismuth, total	< 0.00010	0.00010	mg/L	2018-04-03	
Boron, total	0.0161	0.0050	mg/L	2018-04-03	
Cadmium, total	< 0.000010	0.000010	mg/L	2018-04-03	
Calcium, total	68.9	0.20	mg/L	2018-04-03	
Chromium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Cobalt, total	< 0.00010	0.00010	mg/L	2018-04-03	
Copper, total	0.00107	0.00040	mg/L	2018-04-03	
Iron, total	< 0.010	0.010	mg/L	2018-04-03	
Lead, total	< 0.00020	0.00020	mg/L	2018-04-03	
Lithium, total	0.00018	0.00010	mg/L	2018-04-03	
Magnesium, total	8.80	0.010	mg/L	2018-04-03	
Manganese, total	0.00381	0.00020	mg/L	2018-04-03	
Mercury, total	< 0.000010	0.000010	mg/L	2018-04-09	
Molybdenum, total	0.00074	0.00010	mg/L	2018-04-03	
Nickel, total	0.00055	0.00040	mg/L	2018-04-03	
Phosphorus, total	< 0.050	0.050	mg/L	2018-04-03	
Potassium, total	0.78	0.10	mg/L	2018-04-03	
Selenium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Silicon, total	4.7	1.0	mg/L	2018-04-03	
Silver, total	< 0.000050	0.000050	mg/L	2018-04-03	
Sodium, total	11.0	0.10	mg/L	2018-04-03	
Strontium, total	0.175	0.0010	mg/L	2018-04-03	
Sulfur, total	23.0	3.0	mg/L	2018-04-03	
Tellurium, total	< 0.00050	0.00050	mg/L	2018-04-03	
Thallium, total	< 0.000020	0.000020	mg/L	2018-04-03	
Thorium, total	< 0.00010	0.00010	mg/L	2018-04-03	
Tin, total	< 0.00020	0.00020	mg/L	2018-04-03	
Titanium, total	< 0.0050	0.0050	mg/L	2018-04-03	
Tungsten, total	< 0.0010	0.0010	mg/L	2018-04-03	
Uranium, total	0.000951	0.000020	mg/L	2018-04-03	
Vanadium, total	< 0.0010	0.0010	mg/L	2018-04-03	
Zinc, total	< 0.0040	0.0040	mg/L	2018-04-03	
Zirconium, total	< 0.00010	0.00010	mg/L	2018-04-03	
BCMOE Aggregate Hydrocarbons					
EPHw10-19	< 250	250	µg/L	2018-03-31	
EPHw19-32	< 250	250	µg/L	2018-03-31	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	79	60-140	%	2018-03-31	

TEST RESULTS

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Analyte	Result	RL	Units	Analyzed	Qualifier
SW1 (8032208-09) Matrix: Water Sampled: 2018-03-27 12:30, Continued					
Polycyclic Aromatic Hydrocarbons (PAH)					
Acenaphthene	< 0.050	0.050	µg/L	2018-04-05	
Acenaphthylene	< 0.200	0.200	µg/L	2018-04-05	
Acridine	< 0.050	0.050	µg/L	2018-04-05	
Anthracene	< 0.010	0.010	µg/L	2018-04-05	
Benz(a)anthracene	< 0.010	0.010	µg/L	2018-04-05	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-04-05	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-04-05	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2018-04-05	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2018-04-05	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2018-04-05	
Chrysene	< 0.050	0.050	µg/L	2018-04-05	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2018-04-05	
Fluoranthene	< 0.030	0.030	µg/L	2018-04-05	
Fluorene	< 0.050	0.050	µg/L	2018-04-05	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2018-04-05	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-05	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2018-04-05	
Naphthalene	< 0.200	0.200	µg/L	2018-04-05	
Phenanthrene	< 0.100	0.100	µg/L	2018-04-05	
Pyrene	< 0.020	0.020	µg/L	2018-04-05	
Quinoline	< 0.050	0.050	µg/L	2018-04-05	
Surrogate: Acridine-d9	67	50-140	%	2018-04-05	
Surrogate: Naphthalene-d8	77	50-140	%	2018-04-05	
Surrogate: Perylene-d12	88	50-140	%	2018-04-05	

Sample Qualifiers:

CR6	Hexavalent chromium result adjusted to correspond to the total chromium result.
HT1	The sample was prepared and/or analyzed past the recommended holding time.
HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
S09	The surrogate recovery for this sample is outside of established control limits .

APPENDIX 1: SUPPORTING INFORMATION

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Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2011)	Titration with H ₂ SO ₄	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Chromium, Hexavalent in Water	SM 3500-Cr B (2011)	Spectrophotometry	Richmond
Colour, True in Water	SM 2120 C (2011)	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	SM 2510 B (2011)	Conductivity Meter	Richmond
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
EPH in Water	EPA 3511* / BCMOE EPHw	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Hardness in Water	SM 2340 B* (2011)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	N/A
HEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
LEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
Mercury, dissolved in Water	EPA 245.7*	BrCl ₂ Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Mercury, total in Water	EPA 245.7*	BrCl ₂ Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
pH in Water	SM 4500-H+ B (2011)	Electrometry	Richmond
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MSD (SIM)	Richmond
Solids, Total Suspended in Water	SM 2540 D* (2011)	Gravimetry (Dried at 103-105C)	Richmond
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO ₃ +HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
Turbidity in Water	SM 2130 B (2011)	Nephelometry	Richmond

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

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
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
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody 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.

APPENDIX 2: QUALITY CONTROL RESULTS

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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):** A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup):** An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS):** A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS):** A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM):** A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is 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 10-20 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	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B8C2135									
Blank (B8C2135-BLK1)			Prepared: 2018-03-29, Analyzed: 2018-03-29						
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							
Blank (B8C2135-BLK2)			Prepared: 2018-03-29, Analyzed: 2018-03-29						
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 (B8C2135-BS1)			Prepared: 2018-03-29, Analyzed: 2018-03-29						
Chloride	15.6	0.10 mg/L	16.0		97	90-110			
Fluoride	3.88	0.10 mg/L	4.00		97	88-108			
Nitrate (as N)	3.86	0.010 mg/L	4.00		96	93-108			
Nitrite (as N)	2.10	0.010 mg/L	2.00		105	85-114			
Sulfate	15.5	1.0 mg/L	16.0		97	91-109			
LCS (B8C2135-BS2)			Prepared: 2018-03-29, Analyzed: 2018-03-29						
Chloride	15.5	0.10 mg/L	16.0		97	90-110			
Fluoride	3.82	0.10 mg/L	4.00		96	88-108			
Nitrate (as N)	3.86	0.010 mg/L	4.00		97	93-108			
Nitrite (as N)	1.93	0.010 mg/L	2.00		97	85-114			
Sulfate	15.5	1.0 mg/L	16.0		97	91-109			
Duplicate (B8C2135-DUP2)			Source: 8032208-04		Prepared: 2018-03-29, Analyzed: 2018-03-29				
Chloride	5.07	0.10 mg/L		5.04			< 1	10	
Fluoride	0.23	0.10 mg/L		0.23				10	
Nitrate (as N)	< 0.010	0.010 mg/L		< 0.010				10	
Nitrite (as N)	< 0.010	0.010 mg/L		< 0.010				6	
Sulfate	18.1	1.0 mg/L		18.2			< 1	6	
Matrix Spike (B8C2135-MS2)			Source: 8032208-04		Prepared: 2018-03-29, Analyzed: 2018-03-29				
Chloride	20.5	0.10 mg/L	16.0	5.04	96	75-125			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B8C2135, Continued									
Matrix Spike (B8C2135-MS2), Continued		Source: 8032208-04		Prepared: 2018-03-29, Analyzed: 2018-03-29					
Fluoride	4.07	0.10 mg/L	4.00	0.23	96	75-125			
Nitrate (as N)	3.85	0.010 mg/L	4.00	< 0.010	96	75-125			
Nitrite (as N)	2.15	0.010 mg/L	2.00	< 0.010	108	80-120			
Sulfate	33.6	1.0 mg/L	16.0	18.2	96	75-125			

BCMOE Aggregate Hydrocarbons, Batch B8C2206

Blank (B8C2206-BLK1)			Prepared: 2018-03-31, Analyzed: 2018-03-31						
EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							
Surrogate: 2-Methylnonane (EPH/F2-4)	365	µg/L	442		82	60-140			
LCS (B8C2206-BS2)			Prepared: 2018-03-31, Analyzed: 2018-03-31						
EPHw10-19	14000	250 µg/L	15400		91	70-130			
EPHw19-32	19800	250 µg/L	22200		89	70-130			
Surrogate: 2-Methylnonane (EPH/F2-4)	352	µg/L	442		80	60-140			

Dissolved Metals, Batch B8D0017

Blank (B8D0017-BLK1)			Prepared: 2018-04-03, Analyzed: 2018-04-03						
Aluminum, dissolved	< 0.0050	0.0050 mg/L							
Antimony, dissolved	< 0.00020	0.00020 mg/L							
Arsenic, dissolved	< 0.00050	0.00050 mg/L							
Barium, dissolved	< 0.0050	0.0050 mg/L							
Beryllium, dissolved	< 0.00010	0.00010 mg/L							
Bismuth, dissolved	< 0.00010	0.00010 mg/L							
Boron, dissolved	< 0.0050	0.0050 mg/L							
Cadmium, dissolved	< 0.000010	0.000010 mg/L							
Calcium, dissolved	< 0.20	0.20 mg/L							
Chromium, dissolved	< 0.00050	0.00050 mg/L							
Cobalt, dissolved	< 0.00010	0.00010 mg/L							
Copper, dissolved	< 0.00040	0.00040 mg/L							
Iron, dissolved	< 0.010	0.010 mg/L							
Lead, dissolved	< 0.00020	0.00020 mg/L							
Lithium, dissolved	< 0.00010	0.00010 mg/L							
Magnesium, dissolved	< 0.010	0.010 mg/L							
Manganese, dissolved	< 0.00020	0.00020 mg/L							
Molybdenum, dissolved	< 0.00010	0.00010 mg/L							
Nickel, dissolved	< 0.00040	0.00040 mg/L							
Phosphorus, dissolved	< 0.050	0.050 mg/L							
Potassium, dissolved	< 0.10	0.10 mg/L							
Selenium, dissolved	< 0.00050	0.00050 mg/L							
Silicon, dissolved	< 1.0	1.0 mg/L							
Silver, dissolved	< 0.000050	0.000050 mg/L							
Sodium, dissolved	< 0.10	0.10 mg/L							
Strontium, dissolved	< 0.0010	0.0010 mg/L							
Sulfur, dissolved	< 3.0	3.0 mg/L							
Tellurium, dissolved	< 0.00050	0.00050 mg/L							
Thallium, dissolved	< 0.000020	0.000020 mg/L							
Thorium, dissolved	< 0.00010	0.00010 mg/L							
Tin, dissolved	< 0.00020	0.00020 mg/L							
Titanium, dissolved	< 0.0050	0.0050 mg/L							
Tungsten, dissolved	< 0.0010	0.0010 mg/L							
Uranium, dissolved	< 0.000020	0.000020 mg/L							
Vanadium, dissolved	< 0.0010	0.0010 mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Dissolved Metals, Batch B8D0017, Continued

Blank (B8D0017-BLK1), Continued

Prepared: 2018-04-03, Analyzed: 2018-04-03

Zinc, dissolved	< 0.0040	0.0040 mg/L							
Zirconium, dissolved	< 0.00010	0.00010 mg/L							

LCS (B8D0017-BS1)

Prepared: 2018-04-03, Analyzed: 2018-04-03

Aluminum, dissolved	0.0214	0.0050 mg/L	0.0200		107	80-120			
Antimony, dissolved	0.0195	0.00020 mg/L	0.0200		97	80-120			
Arsenic, dissolved	0.0192	0.00050 mg/L	0.0200		96	80-120			
Barium, dissolved	0.0193	0.0050 mg/L	0.0200		96	80-120			
Beryllium, dissolved	0.0204	0.00010 mg/L	0.0200		102	80-120			
Bismuth, dissolved	0.0202	0.00010 mg/L	0.0200		101	80-120			
Boron, dissolved	0.0183	0.0050 mg/L	0.0200		92	80-120			
Cadmium, dissolved	0.0196	0.000010 mg/L	0.0200		98	80-120			
Calcium, dissolved	2.16	0.20 mg/L	2.00		108	80-120			
Chromium, dissolved	0.0191	0.00050 mg/L	0.0200		96	80-120			
Cobalt, dissolved	0.0194	0.00010 mg/L	0.0200		97	80-120			
Copper, dissolved	0.0200	0.00040 mg/L	0.0200		100	80-120			
Iron, dissolved	1.92	0.010 mg/L	2.00		96	80-120			
Lead, dissolved	0.0200	0.00020 mg/L	0.0200		100	80-120			
Lithium, dissolved	0.0214	0.00010 mg/L	0.0200		107	80-120			
Magnesium, dissolved	2.01	0.010 mg/L	2.00		100	80-120			
Manganese, dissolved	0.0189	0.00020 mg/L	0.0200		95	80-120			
Molybdenum, dissolved	0.0186	0.00010 mg/L	0.0200		93	80-120			
Nickel, dissolved	0.0197	0.00040 mg/L	0.0200		99	80-120			
Phosphorus, dissolved	1.96	0.050 mg/L	2.00		98	80-120			
Potassium, dissolved	1.94	0.10 mg/L	2.00		97	80-120			
Selenium, dissolved	0.0202	0.00050 mg/L	0.0200		101	80-120			
Silicon, dissolved	1.7	1.0 mg/L	2.00		87	80-120			
Silver, dissolved	0.0194	0.000050 mg/L	0.0200		97	80-120			
Sodium, dissolved	2.01	0.10 mg/L	2.00		101	80-120			
Strontium, dissolved	0.0188	0.0010 mg/L	0.0200		94	80-120			
Sulfur, dissolved	4.2	3.0 mg/L	5.00		84	80-120			
Tellurium, dissolved	0.0197	0.00050 mg/L	0.0200		99	80-120			
Thallium, dissolved	0.0198	0.000020 mg/L	0.0200		99	80-120			
Thorium, dissolved	0.0194	0.00010 mg/L	0.0200		97	80-120			
Tin, dissolved	0.0196	0.00020 mg/L	0.0200		98	80-120			
Titanium, dissolved	0.0201	0.0050 mg/L	0.0200		100	80-120			
Tungsten, dissolved	0.0176	0.0010 mg/L	0.0200		88	80-120			
Uranium, dissolved	0.0218	0.000020 mg/L	0.0200		109	80-120			
Vanadium, dissolved	0.0184	0.0010 mg/L	0.0200		92	80-120			
Zinc, dissolved	0.0215	0.0040 mg/L	0.0200		108	80-120			
Zirconium, dissolved	0.0199	0.00010 mg/L	0.0200		99	80-120			

Reference (B8D0017-SRM1)

Prepared: 2018-04-03, Analyzed: 2018-04-03

Aluminum, dissolved	0.227	0.0050 mg/L	0.233		97	79-114			
Antimony, dissolved	0.0433	0.00020 mg/L	0.0430		101	89-123			
Arsenic, dissolved	0.425	0.00050 mg/L	0.438		97	87-113			
Barium, dissolved	3.21	0.0050 mg/L	3.35		96	85-114			
Beryllium, dissolved	0.213	0.00010 mg/L	0.213		100	79-122			
Boron, dissolved	1.42	0.0050 mg/L	1.74		82	79-117			
Cadmium, dissolved	0.216	0.000010 mg/L	0.224		96	89-112			
Calcium, dissolved	7.58	0.20 mg/L	7.69		99	85-120			
Chromium, dissolved	0.423	0.00050 mg/L	0.437		97	87-113			
Cobalt, dissolved	0.127	0.00010 mg/L	0.128		99	90-117			
Copper, dissolved	0.821	0.00040 mg/L	0.844		97	90-115			
Iron, dissolved	1.22	0.010 mg/L	1.29		95	86-112			
Lead, dissolved	0.110	0.00020 mg/L	0.112		98	90-113			

APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B8D0017, Continued									
Reference (B8D0017-SRM1), Continued				Prepared: 2018-04-03, Analyzed: 2018-04-03					
Lithium, dissolved	0.107	0.00010 mg/L	0.104		102	77-127			
Magnesium, dissolved	6.83	0.010 mg/L	6.92		99	84-116			
Manganese, dissolved	0.325	0.00020 mg/L	0.345		94	85-113			
Molybdenum, dissolved	0.411	0.00010 mg/L	0.426		96	87-112			
Nickel, dissolved	0.826	0.00040 mg/L	0.840		98	90-114			
Phosphorus, dissolved	0.483	0.050 mg/L	0.495		98	74-119			
Potassium, dissolved	3.06	0.10 mg/L	3.19		96	78-119			
Selenium, dissolved	0.0330	0.00050 mg/L	0.0331		100	89-123			
Sodium, dissolved	18.7	0.10 mg/L	19.1		98	81-117			
Strontium, dissolved	0.857	0.0010 mg/L	0.916		94	82-111			
Thallium, dissolved	0.0381	0.000020 mg/L	0.0393		97	90-113			
Uranium, dissolved	0.254	0.000020 mg/L	0.266		95	87-113			
Vanadium, dissolved	0.814	0.0010 mg/L	0.869		94	85-110			
Zinc, dissolved	0.855	0.0040 mg/L	0.881		97	88-114			

Dissolved Metals, Batch B8D0488

Blank (B8D0488-BLK1)				Prepared: 2018-04-08, Analyzed: 2018-04-09					
Mercury, dissolved	< 0.000010	0.000010 mg/L							
Duplicate (B8D0488-DUP1)				Source: 8032208-01		Prepared: 2018-04-08, Analyzed: 2018-04-09			
Mercury, dissolved	< 0.000010	0.000010 mg/L		< 0.000010				20	
Matrix Spike (B8D0488-MS1)				Source: 8032208-02		Prepared: 2018-04-08, Analyzed: 2018-04-09			
Mercury, dissolved	0.000227	0.000010 mg/L	0.000250	< 0.000010	91	70-130			
Reference (B8D0488-SRM1)				Prepared: 2018-04-08, Analyzed: 2018-04-09					
Mercury, dissolved	0.00451	0.000010 mg/L	0.00489		92	80-120			

General Parameters, Batch B8C2136

Blank (B8C2136-BLK1)				Prepared: 2018-03-29, Analyzed: 2018-03-29					
Turbidity	< 0.10	0.10 NTU							
Duplicate (B8C2136-DUP1)				Source: 8032208-09		Prepared: 2018-03-29, Analyzed: 2018-03-29			
Turbidity	< 0.10	0.10 NTU		< 0.10				18	

General Parameters, Batch B8C2158

Blank (B8C2158-BLK1)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
Colour, True	< 5.0	5.0 CU							
LCS (B8C2158-BS1)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
Colour, True	9.5	5.0 CU	10.0		95	85-115			

General Parameters, Batch B8C2181

Blank (B8C2181-BLK1)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
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WORK ORDER REPORTED 8032208
2018-04-09 12:07

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B8C2181, Continued									
Blank (B8C2181-BLK2)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
LCS (B8C2181-BS1)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
Alkalinity, Total (as CaCO ₃)	104	1.0 mg/L	100		104	92-106			
LCS (B8C2181-BS2)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
Alkalinity, Total (as CaCO ₃)	103	1.0 mg/L	100		103	92-106			
General Parameters, Batch B8D0075									
Blank (B8D0075-BLK1)				Prepared: 2018-04-03, Analyzed: 2018-04-03					
Solids, Total Suspended	< 2.0	2.0 mg/L							
Blank (B8D0075-BLK2)				Prepared: 2018-04-03, Analyzed: 2018-04-03					
Solids, Total Suspended	< 2.0	2.0 mg/L							
LCS (B8D0075-BS1)				Prepared: 2018-04-03, Analyzed: 2018-04-03					
Solids, Total Suspended	101	10.0 mg/L	100		101	83-107			
LCS (B8D0075-BS2)				Prepared: 2018-04-03, Analyzed: 2018-04-03					
Solids, Total Suspended	100	10.0 mg/L	100		100	83-107			
General Parameters, Batch B8D0156									
Reference (B8D0156-SRM1)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
pH	7.84	0.10 pH units	8.00		98	97.5-102.5			
Reference (B8D0156-SRM2)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
pH	7.90	0.10 pH units	8.00		99	97.5-102.5			
Reference (B8D0156-SRM3)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
pH	7.88	0.10 pH units	8.00		98	97.5-102.5			
General Parameters, Batch B8D0200									
Blank (B8D0200-BLK1)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
Conductivity (EC)	< 2.0	2.0 µS/cm							
LCS (B8D0200-BS1)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
Conductivity (EC)	148	2.0 µS/cm	147		101	90-110			
Reference (B8D0200-SRM1)				Prepared: 2018-04-04, Analyzed: 2018-04-04					
Conductivity (EC)	1010	2.0 µS/cm	1000		101	95-105			
General Parameters, Batch B8D0244									
Blank (B8D0244-BLK1)				Prepared: 2018-04-05, Analyzed: 2018-04-05					
Chromium, Hexavalent	< 0.0010	0.0010 mg/L							
LCS (B8D0244-BS1)				Prepared: 2018-04-05, Analyzed: 2018-04-05					
Chromium, Hexavalent	0.0950	0.0010 mg/L	0.100		95	90-111			

APPENDIX 2: QUALITY CONTROL RESULTS

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WORK ORDER REPORTED 8032208
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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General Parameters, Batch B8D0244, Continued

Matrix Spike (B8D0244-MS1)		Source: 8032208-09		Prepared: 2018-04-05, Analyzed: 2018-04-05					
Chromium, Hexavalent	0.0932	0.0010 mg/L	0.100	< 0.0010	93	70-116			

Polycyclic Aromatic Hydrocarbons (PAH), Batch B8C2206

Blank (B8C2206-BLK1)			Prepared: 2018-03-31, Analyzed: 2018-04-03						
Acenaphthene	< 0.050	0.050 µg/L							
Acenaphthylene	< 0.200	0.200 µg/L							
Acridine	< 0.050	0.050 µg/L							
Anthracene	< 0.010	0.010 µg/L							
Benz(a)anthracene	< 0.010	0.010 µg/L							
Benzo(a)pyrene	< 0.010	0.010 µg/L							
Benzo(b+j)fluoranthene	< 0.050	0.050 µg/L							
Benzo(g,h,i)perylene	< 0.050	0.050 µg/L							
Benzo(k)fluoranthene	< 0.050	0.050 µg/L							
2-Chloronaphthalene	< 0.100	0.100 µg/L							
Chrysene	< 0.050	0.050 µg/L							
Dibenz(a,h)anthracene	< 0.010	0.010 µg/L							
Fluoranthene	< 0.030	0.030 µg/L							
Fluorene	< 0.050	0.050 µg/L							
Indeno(1,2,3-cd)pyrene	< 0.050	0.050 µg/L							
1-Methylnaphthalene	< 0.100	0.100 µg/L							
2-Methylnaphthalene	< 0.100	0.100 µg/L							
Naphthalene	< 0.200	0.200 µg/L							
Phenanthrene	< 0.100	0.100 µg/L							
Pyrene	< 0.020	0.020 µg/L							
Quinoline	< 0.050	0.050 µg/L							
Surrogate: Acridine-d9	4.15	µg/L	4.44		93	50-140			
Surrogate: Naphthalene-d8	2.58	µg/L	4.44		58	50-140			
Surrogate: Perylene-d12	5.41	µg/L	4.44		122	50-140			

LCS (B8C2206-BS1)			Prepared: 2018-03-31, Analyzed: 2018-04-03						
Acenaphthene	2.92	0.050 µg/L	4.40		66	58-125			
Acenaphthylene	3.17	0.200 µg/L	4.40		72	54-128			
Acridine	2.89	0.050 µg/L	4.44		65	50-112			
Anthracene	3.74	0.010 µg/L	4.44		84	66-125			
Benz(a)anthracene	3.00	0.010 µg/L	4.44		68	59-123			
Benzo(a)pyrene	3.89	0.010 µg/L	4.40		88	62-116			
Benzo(b+j)fluoranthene	7.65	0.050 µg/L	8.89		86	69-121			
Benzo(g,h,i)perylene	4.78	0.050 µg/L	4.40		109	58-129			
Benzo(k)fluoranthene	3.76	0.050 µg/L	4.44		85	67-128			
2-Chloronaphthalene	2.98	0.100 µg/L	4.44		67	50-140			
Chrysene	2.89	0.050 µg/L	4.42		65	58-125			
Dibenz(a,h)anthracene	5.21	0.010 µg/L	4.42		118	58-126			
Fluoranthene	3.80	0.030 µg/L	4.36		87	67-133			
Fluorene	3.40	0.050 µg/L	4.40		77	55-122			
Indeno(1,2,3-cd)pyrene	4.27	0.050 µg/L	4.44		96	62-126			
1-Methylnaphthalene	2.39	0.100 µg/L	4.38		55	53-125			
2-Methylnaphthalene	2.38	0.100 µg/L	4.36		55	52-122			
Naphthalene	2.51	0.200 µg/L	4.44		56	50-130			
Phenanthrene	3.74	0.100 µg/L	4.40		85	67-127			
Pyrene	3.77	0.020 µg/L	4.44		85	68-133			
Quinoline	3.84	0.050 µg/L	4.44		86	51-140			
Surrogate: Acridine-d9	3.04	µg/L	4.44		68	50-140			
Surrogate: Naphthalene-d8	2.05	µg/L	4.44		46	50-140			S02
Surrogate: Perylene-d12	4.28	µg/L	4.44		96	50-140			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
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WORK ORDER REPORTED 8032208
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B8D0011									
Blank (B8D0011-BLK1)					Prepared: 2018-04-03, Analyzed: 2018-04-03				
Aluminum, total	< 0.0050	0.0050 mg/L							
Antimony, total	< 0.00020	0.00020 mg/L							
Arsenic, total	< 0.00050	0.00050 mg/L							
Barium, total	< 0.0050	0.0050 mg/L							
Beryllium, total	< 0.00010	0.00010 mg/L							
Bismuth, total	< 0.00010	0.00010 mg/L							
Boron, total	< 0.0050	0.0050 mg/L							
Cadmium, total	< 0.000010	0.000010 mg/L							
Calcium, total	< 0.20	0.20 mg/L							
Chromium, total	< 0.00050	0.00050 mg/L							
Cobalt, total	< 0.00010	0.00010 mg/L							
Copper, total	< 0.00040	0.00040 mg/L							
Iron, total	< 0.010	0.010 mg/L							
Lead, total	< 0.00020	0.00020 mg/L							
Lithium, total	< 0.00010	0.00010 mg/L							
Magnesium, total	< 0.010	0.010 mg/L							
Manganese, total	< 0.00020	0.00020 mg/L							
Molybdenum, total	< 0.00010	0.00010 mg/L							
Nickel, total	< 0.00040	0.00040 mg/L							
Phosphorus, total	< 0.050	0.050 mg/L							
Potassium, total	< 0.10	0.10 mg/L							
Selenium, total	< 0.00050	0.00050 mg/L							
Silicon, total	< 1.0	1.0 mg/L							
Silver, total	< 0.000050	0.000050 mg/L							
Sodium, total	< 0.10	0.10 mg/L							
Strontium, total	< 0.0010	0.0010 mg/L							
Sulfur, total	< 3.0	3.0 mg/L							
Tellurium, total	< 0.00050	0.00050 mg/L							
Thallium, total	< 0.000020	0.000020 mg/L							
Thorium, total	< 0.00010	0.00010 mg/L							
Tin, total	< 0.00020	0.00020 mg/L							
Titanium, total	< 0.0050	0.0050 mg/L							
Tungsten, total	< 0.0010	0.0010 mg/L							
Uranium, total	< 0.000020	0.000020 mg/L							
Vanadium, total	< 0.0010	0.0010 mg/L							
Zinc, total	< 0.0040	0.0040 mg/L							
Zirconium, total	< 0.00010	0.00010 mg/L							

LCS (B8D0011-BS1)					Prepared: 2018-04-03, Analyzed: 2018-04-03				
Aluminum, total	0.0223	0.0050 mg/L	0.0200		112	80-120			
Antimony, total	0.0205	0.00020 mg/L	0.0200		103	80-120			
Arsenic, total	0.0200	0.00050 mg/L	0.0200		100	80-120			
Barium, total	0.0198	0.0050 mg/L	0.0200		99	80-120			
Beryllium, total	0.0211	0.00010 mg/L	0.0200		105	80-120			
Bismuth, total	0.0208	0.00010 mg/L	0.0200		104	80-120			
Boron, total	0.0184	0.0050 mg/L	0.0200		92	80-120			
Cadmium, total	0.0204	0.000010 mg/L	0.0200		102	80-120			
Calcium, total	2.32	0.20 mg/L	2.00		116	80-120			
Chromium, total	0.0204	0.00050 mg/L	0.0200		102	80-120			
Cobalt, total	0.0208	0.00010 mg/L	0.0200		104	80-120			
Copper, total	0.0213	0.00040 mg/L	0.0200		107	80-120			
Iron, total	2.03	0.010 mg/L	2.00		101	80-120			
Lead, total	0.0205	0.00020 mg/L	0.0200		103	80-120			
Lithium, total	0.0224	0.00010 mg/L	0.0200		112	80-120			
Magnesium, total	2.20	0.010 mg/L	2.00		110	80-120			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B8D0011, Continued									
LCS (B8D0011-BS1), Continued					Prepared: 2018-04-03, Analyzed: 2018-04-03				
Manganese, total	0.0201	0.00020 mg/L	0.0200		100	80-120			
Molybdenum, total	0.0197	0.00010 mg/L	0.0200		98	80-120			
Nickel, total	0.0210	0.00040 mg/L	0.0200		105	80-120			
Phosphorus, total	2.08	0.050 mg/L	2.00		104	80-120			
Potassium, total	2.11	0.10 mg/L	2.00		106	80-120			
Selenium, total	0.0205	0.00050 mg/L	0.0200		102	80-120			
Silicon, total	2.2	1.0 mg/L	2.00		112	80-120			
Silver, total	0.0192	0.000050 mg/L	0.0200		96	80-120			
Sodium, total	2.22	0.10 mg/L	2.00		111	80-120			
Strontium, total	0.0198	0.0010 mg/L	0.0200		99	80-120			
Sulfur, total	4.0	3.0 mg/L	5.00		81	80-120			
Tellurium, total	0.0201	0.00050 mg/L	0.0200		100	80-120			
Thallium, total	0.0205	0.000020 mg/L	0.0200		102	80-120			
Thorium, total	0.0198	0.00010 mg/L	0.0200		99	80-120			
Tin, total	0.0205	0.00020 mg/L	0.0200		103	80-120			
Titanium, total	0.0207	0.0050 mg/L	0.0200		104	80-120			
Tungsten, total	0.0183	0.0010 mg/L	0.0200		92	80-120			
Uranium, total	0.0223	0.000020 mg/L	0.0200		112	80-120			
Vanadium, total	0.0197	0.0010 mg/L	0.0200		98	80-120			
Zinc, total	0.0226	0.0040 mg/L	0.0200		113	80-120			
Zirconium, total	0.0208	0.00010 mg/L	0.0200		104	80-120			

Reference (B8D0011-SRM1)					Prepared: 2018-04-03, Analyzed: 2018-04-03				
Aluminum, total	0.319	0.0050 mg/L	0.303		105	82-114			
Antimony, total	0.0488	0.00020 mg/L	0.0511		95	88-115			
Arsenic, total	0.114	0.00050 mg/L	0.118		97	88-111			
Barium, total	0.748	0.0050 mg/L	0.823		91	83-110			
Beryllium, total	0.0555	0.00010 mg/L	0.0496		112	80-119			
Boron, total	3.21	0.0050 mg/L	3.45		93	80-118			
Cadmium, total	0.0475	0.000010 mg/L	0.0495		96	90-110			
Calcium, total	12.4	0.20 mg/L	11.6		107	85-113			
Chromium, total	0.241	0.00050 mg/L	0.250		96	88-111			
Cobalt, total	0.0383	0.00010 mg/L	0.0377		102	90-114			
Copper, total	0.499	0.00040 mg/L	0.486		103	90-117			
Iron, total	0.490	0.010 mg/L	0.488		100	90-116			
Lead, total	0.210	0.00020 mg/L	0.204		103	90-110			
Lithium, total	0.466	0.00010 mg/L	0.403		116	79-118			
Magnesium, total	4.15	0.010 mg/L	3.79		110	88-116			
Manganese, total	0.104	0.00020 mg/L	0.109		95	88-108			
Molybdenum, total	0.189	0.00010 mg/L	0.198		95	88-110			
Nickel, total	0.248	0.00040 mg/L	0.249		99	90-112			
Phosphorus, total	0.234	0.050 mg/L	0.227		103	72-118			
Potassium, total	7.49	0.10 mg/L	7.21		104	87-116			
Selenium, total	0.120	0.00050 mg/L	0.121		99	90-122			
Sodium, total	8.05	0.10 mg/L	7.54		107	86-118			
Strontium, total	0.352	0.0010 mg/L	0.375		94	86-110			
Thallium, total	0.0848	0.000020 mg/L	0.0805		105	90-113			
Uranium, total	0.0309	0.000020 mg/L	0.0306		101	88-112			
Vanadium, total	0.362	0.0010 mg/L	0.386		94	87-110			
Zinc, total	2.44	0.0040 mg/L	2.49		98	90-113			

Total Metals, Batch B8D0489

Blank (B8D0489-BLK1)					Prepared: 2018-04-08, Analyzed: 2018-04-09				
Mercury, total	< 0.000010	0.000010 mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B8D0489, Continued									
Duplicate (B8D0489-DUP1)		Source: 8032208-04		Prepared: 2018-04-08, Analyzed: 2018-04-09					
Mercury, total	< 0.000010	0.000010 mg/L		< 0.000010				20	
Matrix Spike (B8D0489-MS1)		Source: 8032208-05		Prepared: 2018-04-08, Analyzed: 2018-04-09					
Mercury, total	0.000225	0.000010 mg/L	0.000250	0.000017	83	70-130			
Reference (B8D0489-SRM1)				Prepared: 2018-04-08, Analyzed: 2018-04-09					
Mercury, total	0.00407	0.000010 mg/L	0.00489		83	80-120			

QC Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.

Submission Key F087-FBH-420Q

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Client information	Project information	Laboratory information	COC information
Allterra Construction 2158 Millstream Road Victoria, BC V9B 6H4 Phone: (250) 508-0726 Fax:	Number: [none] Sample count: 9 TAT: 5	CARO Analytical Services #110 - 4011 Viking Way Richmond, BC V6V 2K9 Phone: (604) 279-1499 Fax: (604) 279-1599	Number: March 2018 Shipped via: Harbour Air Tracking #: SDG:

#		Analyses	Containers
# 1	MW6 03/27/2018 8:45 Grab / Water	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 (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss ICPMS, Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: Total Mercury Required as well pH in Water (RMD) TAT: 5 Solids, Total Suspended (RMD) TAT: 5 Turbidity (RMD) TAT: 5	C03_250 mL Glass (EPH/PAH) (1) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1)
# 2	MW3S 03/27/2018 11:30 Grab / Water	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 (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss ICPMS, Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: Total Mercury Required as well pH in Water (RMD) TAT: 5 Solids, Total Suspended (RMD) TAT: 5 Turbidity (RMD) TAT: 5	C03_250 mL Glass (EPH/PAH) (1) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1)
# 3	MW3D 03/27/2018 12:00 Grab / Water	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 (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss ICPMS, Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: Total Mercury Required as well pH in Water (RMD) TAT: 5 Solids, Total Suspended (RMD) TAT: 5 Turbidity (RMD) TAT: 5	C03_250 mL Glass (EPH/PAH) (1) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1)

Submission Key F087-FBH-420Q		SUBMITTED :3/28/2018 5:37:56 AM		Page 2 of 3
# 4	MW2	Analyses 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 (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss ICPMS, Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: Total Mercury Required as well pH in Water (RMD) TAT: 5 Solids, Total Suspended (RMD) TAT: 5 Turbidity (RMD) TAT: 5	Containers C03_250 mL Glass (EPH/PAH) (1) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1)	
	03/27/2018 13:00 Grab / Water			
# 5	SB1	Analyses 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 (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss ICPMS, Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: Total Mercury Required as well pH in Water (RMD) TAT: 5 Solids, Total Suspended (RMD) TAT: 5 Turbidity (RMD) TAT: 5	Containers C03_250 mL Glass (EPH/PAH) (1) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1)	
	03/27/2018 11:00 Grab / Water			
# 6	SB2	Analyses 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 (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss ICPMS, Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: Total Mercury Required as well pH in Water (RMD) TAT: 5 Solids, Total Suspended (RMD) TAT: 5 Turbidity (RMD) TAT: 5	Containers C03_250 mL Glass (EPH/PAH) (1) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1)	
	03/27/2018 10:20 Grab / Water			
# 7	SB3	Analyses 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 (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss ICPMS, Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: Total Mercury Required as well pH in Water (RMD) TAT: 5 Solids, Total Suspended (RMD) TAT: 5 Turbidity (RMD) TAT: 5	Containers C03_250 mL Glass (EPH/PAH) (1) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1)	
	03/27/2018 9:45 Grab / Water			

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#		Analyses	Containers
# 8	LE-1 03/27/2018 13:30 Grab / Water	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 (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss ICPMS, Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: Total Mercury Required as well pH in Water (RMD) TAT: 5 Solids, Total Suspended (RMD) TAT: 5 Turbidity (RMD) TAT: 5	C03_250 mL Glass (EPH/PAH) (1) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1)

#		Analyses	Containers
# 9	SW1 03/27/2018 12:30 Grab / Water	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 (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss ICPMS, Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low +Cr6 (RMD) TAT: 5 pH in Water (RMD) TAT: 5 Solids, Total Suspended (RMD) TAT: 5 Turbidity (RMD) TAT: 5	C03_250 mL Glass (EPH/PAH) (1) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C09_125 mL Plastic (CN/Cr6) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1)

Relinquished by	Date/Time	Accepted by	Date/Time