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FIELD REVIEW REPORT	DATE: March 30, 2020	ISLANDER PROJECT No.: 2087

REPORT No: 65	STAGE OF CONSTRUCTION: Landfill Closure	WEATHER: Cloud 8ºC	PAGE: 1 OF 4

PROJECT: **Cobble Hill Landfill Closure Construction**

TO:	CHH	ATTENTION:	Marty Block
CC:			

Semi Monthly Reporting Requirements SPO MO1701
Per **SPO MO1701 Section 4**:

Commencing in the month that closure activities commence pursuant to the approved Updated Final Closure Plan,

> *the Named Parties must submit semi-monthly status reports, certified by a Qualified Professional. The reports must include the status of closure activities, inspection results, quality control and testing results, photographs which support/document the quality control and testing results, inspection reports and other supporting documents as needed to fully document all stages and components of the closure activities*.

- Activities related to QMP "Pre-construction Activities" did not occur this reporting cycle.
- Source material remains: 3100 Constellation Avenue, Langford BC.
- *PEA*
  - Liner appears to be in good condition, with no noticeable changes since the date of our last inspection
- *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
- Pictures documenting current Site status are shown below:

> *Status reports must be submitted by the 15th and 30th of each month (or the next business day thereafter if the 15th or 30th of the month is not a business day) until closure activities have been completed. Submissions must be made electronically to the following email inbox: EnvironmentalCompliance@gov.bc.ca.*

- Submitted March 30, 2020

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Per **Condition 10 of June 26, 2019 Letter Re: Second Amended Spill Prevention Order MO1701, dated June 29, 2017 – Final Closure Plan**

The semi-monthly status reports submitted pursuant to section 4 of the SPO must also include:

- *Identification of any deviations from the quality management plan and the construction activities work plan and implementation schedule referenced in conditions 3 and 4 of this approval;*

- No deviations occurred this reporting period.

- *The results of inspections, repairs, quality controls and testing, in accordance with the quality management plan referenced in condition 5 of this approval;*

- Further activities related to closure did not occur this reporting period.

- *The planned activities (and associated timing) for the next reporting cycle; and*

- Soil importation is to continue into the subsequent reporting cycle.
- The PEA toe drainage soak away trench is planned as follows: 1/ install trench 2m away from existing toe of PEA along North face to maintain clay plug between PEA and trench 2/ install finger drain at low point of trench to drain towards the North 3/ fill existing V-shaped ditch between PEA and soil berm along East face with shot-rock and connect to trench along North face; and 4/ as-built the location of the new trenches.

- *The environmental monitoring program laboratory reports and tabulated results (Quarterly Only-Submitted quarterly, reviewed annually by others)*

- Sampling and collection of groundwater measurements per the Site's Approved Closure Plan occurred during this reporting period.

- *Copies of all soil relocation documentation as required in condition 7 of this approval.*

- As previously noted, origin site land use was assessed via Technical Guidance 10 on Contaminated Sites. Soil quality was confirmed per a letter of assurance provided by CSAP to BC ENV.

Total Leachate Collected: 2.85 m^3
Total Leachate Stored: 57.51 m^3
Total Leachate Transferred: 0 m^3

ISLANDER ENGINEERING LTD.

Mike Achtem, P.Eng

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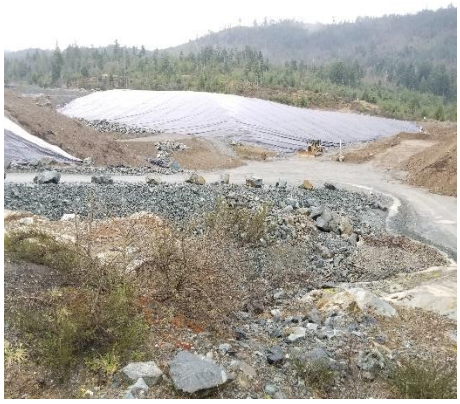
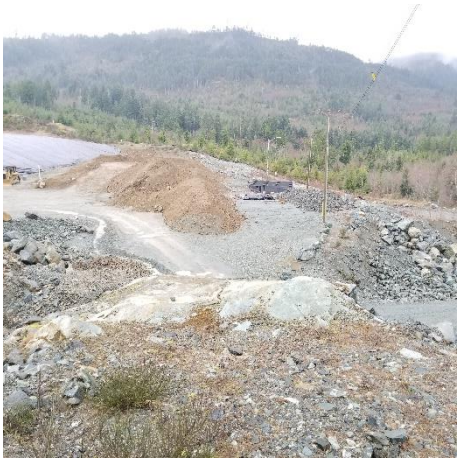
FIELD REVIEW REPORT	DATE: March 30, 2020	ISLANDER PROJECT No.: 2087

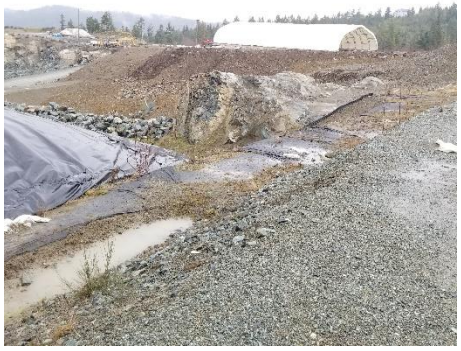
REPORT No: 65	STAGE OF CONSTRUCTION: Landfill Closure	WEATHER: Cloud 8ºC	PAGE: 3 of 4



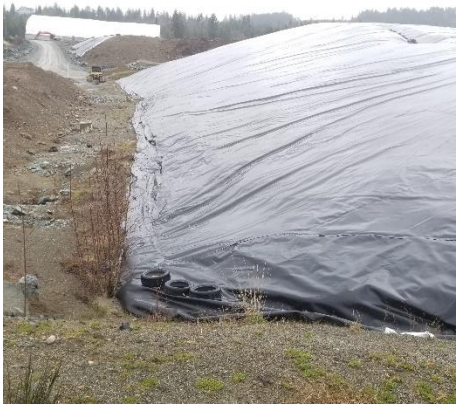
Site – Looking Southwest



Stockpile Location – Looking West



Stockpile Location – Looking Northeast



PEA – Looking East

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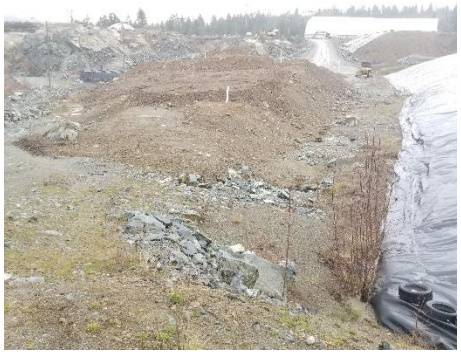
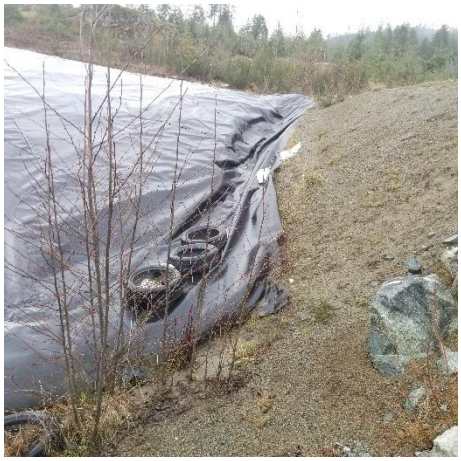
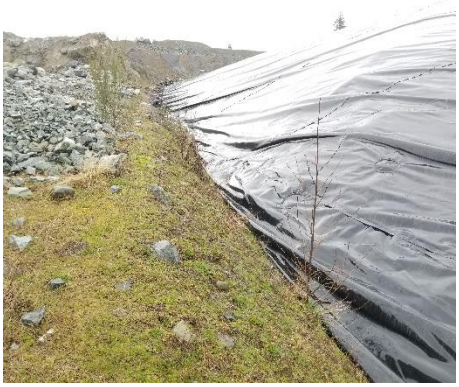
FIELD REVIEW REPORT	DATE: March 30, 2020	ISLANDER PROJECT No.: 2087	
REPORT No: 65	STAGE OF CONSTRUCTION: Landfill Closure	WEATHER: Cloud 8ºC	PAGE: 4 of 4



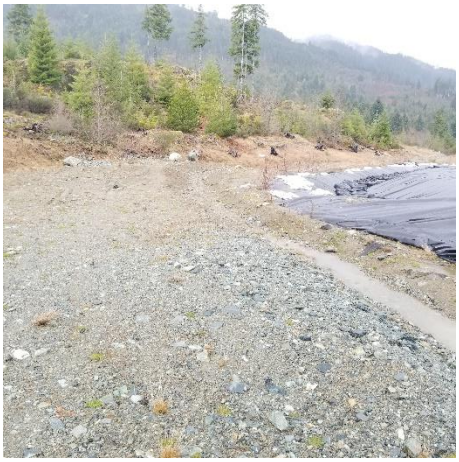
Site – Looking Northeast



PEA – Northwest Corner



PEA– Northeast Corner



PEA Ditch

Table 1: Analytical Results for Nutrients

Sample Location	CSR Standards[1]		MW19-01	MW19-02	MW19-01	MW19-02	RPD
As-built Well Depths to Bottom			7.05m	8.90m	7.05m	8.90m	MW19-02 BC ENV L2419888-1 VS 0021807-02
Sample ID			0021807-01	0021807-02	BC ENV	BC ENV	
			MW19-01	MW19-02	L2419887-1	L2419888-1	
Date Sampled	Aquatic Life	Drinking Water	2020-02-21	2020-02-21	2020-02-21	2020-02-21	
Physical Tests							
Colour, True (TCU)	-	-	-	-	-	<5.0	*
Conductivity (uS/cm)	-	-	-	367	-	392	7%
Hardness (as CaCO3) mg/L	-	-	-	172	-	181	5%
pH (pH Units)	-	-	-	7.49	-	7.67	2%
Total Dissolved Solids mg/L	-	-	-	258	-	218	17%
Turbidity (NTU)	-	-	-	3.87	-	3.63	6%
Anions and Nutrients mg/L							
Alkalinity, Total (as CaCO3)	-	-	-	114	-	113	1%
Alkalinity, Bicarbonate (as CaCO3)			-	114	-		
Alkalinity, Carbonate (as CaCO3)			-	<1.0	-		
Chloride (Cl)	**1500**	**250**	-	7.02	-	7.42	6%
Fluoride (F)	**2 (H < 50)**	**1.5**	-		-		
	3 (H ≥ 50)		-	<0.10	-	0.070	*
Nitrate (as N)	**400**	**10**	-	0.412	-	0.449	9%
Nitrite (as N) [2] Cl <2 mg/L	**0.2**	**3.2**	-		-		
Cl 2 - <4 mg/L	**0.4**		-		-		
Cl 4 - <6 mg/L	**0.6**		-		-		
Cl 6 - <8 mg/L	**0.8**		-	<0.0050	-	<0.0010	*
Cl 8 - <10 mg/L	**1**		-		-		
Cl ≥ 10 mg/L	**2**		-		-		
Sulfate (SO4)	**1000**	**500**	-	78.5	-	80.8	3%

Notes: Refer to Table Endnotes (attached)

Table 2: Analytical Results for Dissolved Metals

Sample Location	CSR Standards[1]		MW19-01	MW19-02	MW19-01	MW19-02	RPD
As-built Well Depths			7.05m	8.90m	7.05m	8.90m	MW19-02 BC ENV L2419888-1 VS 0021807-02
Sample ID			0021807-01	0021807-02	BC ENV	BC ENV	
			MW19-01	MW19-02	L2419887-1	L2419888-1	
Date Sampled	Aquatic Life	Drinking Water	2020-02-21	2020-02-21	2020-02-21	2020-02-21	
Physical Tests mg/L							
Hardness (as CaCO3)	-	-	-	172	-	181	5%
Dissolved Metals mg/L							
Aluminum (Al)-Dissolved	-	9.5	-	<0.0050	-	0.0029	*
Antimony (Sb)-Dissolved	0.2	0.006	-	<0.00020	-	<0.00010	*
Arsenic (As)-Dissolved	0.05	0.01	-	<0.00050	-	0.00016	*
Barium (Ba)-Dissolved	10	1	-	0.0135	-	0.0143	6%
Beryllium (Be)-Dissolved	0.053	-	-	<0.00010	-	<0.00010	*
Bismuth (Bi)- Dissolved	-	-	-	<0.00010	-	<0.000050	*
Boron (B)-Dissolved	50	5	-	0.0124	-	0.013	5%
Cadmium (Cd)-Dissolved	0.0001 (H< 30)	0.005	-		-	-	
	0.0003 (H=30 -<90		-		-	-	
	0.0005 (H=90-<150		-		-	-	
	0.0006 (H=150-<210)		-	<0.000010	-	<0.0000050	*
Calcium (Ca)-Dissolved	-	-	-	57.7	-	61.1	6%
Chromium (Cr)-Dissolved	0.01	0.05	-	0.00065	-	0.00013	*
Colbalt (Co)-Dissolved	0.04	-	-	<0.00010	-	<0.00010	*
Copper (Cu)-Dissolved	0.02 (H<50)	1	-		-	-	
	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)		-	0.00053	-	-	
	0.08 (H=175-<200)		-		-	0.00048	*
	0.09 (H>200)		-		-	-	
Iron (Fe)-Dissolved	-	6.5	-	<0.010	-	<0.0050	*
Lead (Pb)-Dissolved	0.04 (H<50)	0.01	-		-	-	
	0.05 (H=50-<100)		-		-	-	
	0.06 (H=100-<200)		-	<0.00020	-	<0.000050	*
	0.11 (H=200-<300)		-		-	-	
	0.16 (H>300)		-		-	-	
Lithium (Li)-Dissolved	-	-	-	0.00031	-	-	*
Magnesium (Mg)-Dissolved	-	100	-	6.7	-	6.92	3%
Manganese (Mn)-Dissolved	-	0.55	-	0.00938	-	0.00968	3%
Mercury (Hg)-Dissolved	0.001	0.001	-	-	-	-	
Molybdenum (Mo)-Dissolved	10	0.25	-	0.00136	-	0.00131	*
Nickel (Ni)-Dissolved	0.25 (H<60)	-	-		-	-	
	0.65 (H=60-<120)		-		-	-	
	1.1 (H=120-<180)		-	<0.00040	-	-	
	1.5 (H>=180)		-		-	<0.00050	*
Phosphorus(P)-Dissolved	-	-	-	<0.050	-	<0.010	*
Potassium (K)-Dissolved	-	-	-	0.74	-	0.821	10%
Selenium (Se)-Dissolved	0.01	0.01	-	<0.00050	-	0.000315	*
Silicon (Si)-Dissolved	-	-	-	4.3	-	4.29	*
Silver (Ag)-Dissolved	0.0005 (H<=100)	-	-		-	-	
	0.015 (H>100)		-	<0.000050	-	<0.000010	*
Sodium (Na)-Dissolved	-	200	-	10.7	-	11.9	11%
Strontium (Sr)-Dissolved	-	-	-	0.185	-	0.191	3%
Sulfur (S)-Dissolved	-	-	-	30	-	28.7	4%
Tellurium (Te)-Dissolved	-	-	-	<0.00050	-	-	*
Thallium (Tl)-Dissolved	0.003	-	-	<0.000020	-	<0.000010	*
Thorium (Th)-Dissolved	-	-	-	<0.00010	-	-	*
Tin (Sn)-Dissolved	-	-	-	<0.00020	-	<0.00010	*
Titanium (Ti)-Dissolved	1	-	-	<0.0050	-	<0.00030	*
Tungsten (W)-Dissolved			-	0.0379	-	-	*
Uranium (U)-Dissolved	3	0.02	-	0.00123	-	0.00115	7%
Vanadium (V)-Dissolved	-	-	-	0.001	-	0.00106	6%
Zinc (Zn)-Dissolved	0.075 (H<90)	5	-		-	-	
	0.150 (H=90-<100)		-		-	-	
	0.900 (H=100-<200)		-	<0.0040	-	<0.0010	*
	1.650 (H=200-<300)		-		-	-	
	2.4 (H=300-<400)		-		-	-	
Zirconium (Zr)-Dissolved	-	-	-	<0.00010	-	-	*

Notes: Refer to Table Endnotes (attached)

Table 3: Analytical Results for Hydrocarbons and PAHs

Sample Location	CSR Standards[1]		MW19-01	MW19-02	MW19-01	MW19-02	RPD
As-built Well Depths			7.05m	8.90m	7.05m	8.90m	MW19-02 BC ENV L2419888-1 VS 0021807-02
Sample ID			0021807-01	0021807-02	BC ENV	BC ENV	
			MW19-01	MW19-02	L2419887-1	L2419888-1	
Date Sampled	Aquatic Life	Drinking Water	2020-02-21	2020-02-21	2020-02-21	2020-02-21	
Turbidity (NTU)	-	-	-	3.87	-	3.63	6%
Hydrocarbons ug/L							
EPH10-19	**5000**	**5000**	<250	<250	<50	<50	*
EPH10-19 (SG)	**5000**	**5000**	-	-	-	-	*
EPH19-32	-	-	<250	<250	197	<50	*
EPH19-32 (SG)	-	-	-	-	-	-	*
LEPH	**500**	-	<250	<250	<50	<50	*
HEPH	-	-	<250	<250	197	<50	*
Polycyclic Aromatic Hydrocarbons ug/L							
Acenaphthene	**60**	-	<0.050	<0.050	0.017	<0.010	*
Acenaphthylene	-	-	<0.200	<0.200	<0.010	<0.010	*
Acridine	**0.5**	-	<0.050	<0.050	<0.010	<0.010	*
Anthracene	**1**	-	<0.010	<0.010	<0.010	<0.010	*
Benz(a)anthracene	**1**	-	<0.010	<0.010	<0.010	<0.010	*
Benzo(a)pyrene	**0.1**	**0.01**	<0.010	<0.010	<0.0050	<0.0050	*
Benzo(b)fluoranthene	-	-	-	-	-	-	*
Benzo(b+j)fluoranthene	-	-	<0.050	<0.050	<0.010	<0.010	*
Benzo(g,h,i)perylene	-	-	<0.050	<0.050	<0.010	<0.010	*
Benzo(k)fluoranthene	-	-	<0.050	<0.050	<0.010	<0.010	*
2-Chloronaphthalene	-		<0.100	<0.100	-	-	*
Chrysene	**1**	-	<0.050	<0.050	<0.010	<0.010	*
Dibenz(a,h)anthracene	-	-	<0.010	<0.010	<0.0050	<0.0050	*
Fluoranthene	**2**	-	<0.030	<0.030	0.011	<0.010	*
Fluorene	**120**	-	<0.050	<0.050	0.01	<0.010	*
Indeno(1,2,3-c,d)pyrene	-	-	<0.050	<0.050	<0.010	<0.010	*
1-Methylnaphthalene	-		<0.100	<0.100	<0.050	<0.050	*
2-Methylnaphthalene	-		<0.100	<0.100	<0.050	<0.050	*
Naphthalene	**10**	-	<0.200	<0.200	<0.050	<0.050	*
Phenanthrene	**3**	-	<0.100	<0.100	<0.020	<0.020	*
Pyrene	**0.2**	-	<0.020	<0.020	0.023	<0.010	*
Quinoline	**34**	-	<0.050	<0.050	<0.050	<0.050	*

Notes: Refer to Table Endnotes (attached)

Analytical Table Footnotes: Analytical Results for Groundwater and Seepage Blanket 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 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

CERTIFICATE OF ANALYSIS

REPORTED TO	Allterra Construction 2158 Millstream Road Victoria, BC V9B 6H4		
ATTENTION	Rahim Gaidhar	**WORK ORDER**	0021807
PO NUMBER	17-932	**RECEIVED / TEMP**	2020-02-22 12:00 / 8°C
PROJECT	P17-932	**REPORTED**	2020-03-23 12:13
PROJECT INFO		**COC NUMBER**	February 2020

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.

Work Order Comments:

This is a revised report; please refer to Appendix 3 for details.

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

Authorized By:

Nicole Yipp
Team Lead, Client Service

TEST RESULTS

REPORTED TO	Allterra Construction	**WORK ORDER**	0021807
PROJECT	P17-932	**REPORTED**	2020-03-23 12:13

Analyte	Result	RL	Units	Analyzed	Qualifier
MW19-01 (0021807-01) | Matrix: Water | Sampled: 2020-02-21 10:30					
BCMOE Aggregate Hydrocarbons					
EPHw10-19	< 250	250	µg/L	2020-03-17	
EPHw19-32	< 250	250	µg/L	2020-03-17	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	*68*	*60-126*	%	*2020-03-17*	
Polycyclic Aromatic Hydrocarbons (PAH)					
Acenaphthene	< 0.050	0.050	µg/L	2020-02-28	
Acenaphthylene	< 0.200	0.200	µg/L	2020-02-28	
Acridine	< 0.050	0.050	µg/L	2020-02-28	
Anthracene	< 0.010	0.010	µg/L	2020-02-28	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-02-28	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-02-28	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-02-28	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-02-28	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-02-28	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-02-28	
Chrysene	< 0.050	0.050	µg/L	2020-02-28	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-02-28	
Fluoranthene	< 0.030	0.030	µg/L	2020-02-28	
Fluorene	< 0.050	0.050	µg/L	2020-02-28	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-02-28	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-02-28	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-02-28	
Naphthalene	< 0.200	0.200	µg/L	2020-02-28	
Phenanthrene	< 0.100	0.100	µg/L	2020-02-28	
Pyrene	< 0.020	0.020	µg/L	2020-02-28	
Quinoline	< 0.050	0.050	µg/L	2020-02-28	
Surrogate: Acridine-d9	*92*	*50-140*	%	*2020-02-28*	
Surrogate: Naphthalene-d8	*97*	*50-140*	%	*2020-02-28*	
Surrogate: Perylene-d12	*87*	*50-140*	%	*2020-02-28*	
MW19-02 (0021807-02) | Matrix: Water | Sampled: 2020-02-21 10:30					
Anions					
Chloride	**7.02**	0.10	mg/L	2020-02-29	
Fluoride	< 0.10	0.10	mg/L	2020-02-29	
Nitrate+Nitrite (as N)	**0.412**	0.0050	mg/L	2020-02-28	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-02-23	
Sulfate	**78.5**	1.0	mg/L	2020-02-29	
BCMOE Aggregate Hydrocarbons					
EPHw10-19	< 250	250	µg/L	2020-03-17	

TEST RESULTS

REPORTED TO	Allterra Construction	**WORK ORDER**	0021807
PROJECT	P17-932	**REPORTED**	2020-03-23 12:13

Analyte	Result	RL	Units	Analyzed	Qualifier
MW19-02 (0021807-02) | Matrix: Water | Sampled: 2020-02-21 10:30, Continued					
BCMOE Aggregate Hydrocarbons, Continued					
EPHw19-32	< 250	250	µg/L	2020-03-17	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	*75*	*60-126*	%	*2020-03-17*	
Calculated Parameters					
Hardness, Total (as CaCO3)	**172**	0.500	mg/L	N/A	
Nitrate (as N)	**0.412**	0.0100	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	**0.00031**	0.00010	mg/L	2020-02-29	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-02-29	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-02-29	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-02-29	
Barium, dissolved	**0.0135**	0.0050	mg/L	2020-02-29	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-02-29	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-02-29	
Boron, dissolved	**0.0124**	0.0050	mg/L	2020-02-29	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-02-29	
Calcium, dissolved	**57.7**	0.20	mg/L	2020-02-29	
Chromium, dissolved	**0.00065**	0.00050	mg/L	2020-02-29	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-02-29	
Copper, dissolved	**0.00053**	0.00040	mg/L	2020-02-29	
Iron, dissolved	< 0.010	0.010	mg/L	2020-02-29	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-02-29	
Magnesium, dissolved	**6.70**	0.010	mg/L	2020-02-29	
Manganese, dissolved	**0.00938**	0.00020	mg/L	2020-02-29	
Molybdenum, dissolved	**0.00136**	0.00010	mg/L	2020-02-29	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-02-29	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-02-29	
Potassium, dissolved	**0.74**	0.10	mg/L	2020-02-29	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-02-29	
Silicon, dissolved	**4.3**	1.0	mg/L	2020-02-29	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-02-29	
Sodium, dissolved	**10.7**	0.10	mg/L	2020-02-29	
Strontium, dissolved	**0.185**	0.0010	mg/L	2020-02-29	
Sulfur, dissolved	**30.0**	3.0	mg/L	2020-02-29	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-02-29	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-02-29	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-02-29	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-02-29	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-02-29	
Tungsten, dissolved	**0.0379**	0.0010	mg/L	2020-02-29	

TEST RESULTS

REPORTED TO	Allterra Construction	**WORK ORDER**	0021807
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Analyte	Result	RL	Units	Analyzed	Qualifier
MW19-02 (0021807-02) | Matrix: Water | Sampled: 2020-02-21 10:30, Continued					
Dissolved Metals, Continued					
Uranium, dissolved	**0.00123**	0.000020	mg/L	2020-02-29	
Vanadium, dissolved	**0.0010**	0.0010	mg/L	2020-02-29	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-02-29	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-02-29	
General Parameters					
Alkalinity, Total (as CaCO3)	**114**	1.0	mg/L	2020-02-29	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-02-29	
Alkalinity, Bicarbonate (as CaCO3)	**114**	1.0	mg/L	2020-02-29	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-02-29	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-02-29	
Conductivity (EC)	**367**	2.0	µS/cm	2020-02-29	
pH	**7.49**	0.10	pH units	2020-02-29	HT2
Solids, Total Dissolved	**258**	15	mg/L	2020-02-29	HT1
Turbidity	**3.87**	0.10	NTU	2020-02-29	HT1
Polycyclic Aromatic Hydrocarbons (PAH)					
Acenaphthene	< 0.050	0.050	µg/L	2020-02-28	
Acenaphthylene	< 0.200	0.200	µg/L	2020-02-28	
Acridine	< 0.050	0.050	µg/L	2020-02-28	
Anthracene	< 0.010	0.010	µg/L	2020-02-28	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-02-28	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-02-28	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-02-28	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-02-28	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-02-28	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-02-28	
Chrysene	< 0.050	0.050	µg/L	2020-02-28	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-02-28	
Fluoranthene	< 0.030	0.030	µg/L	2020-02-28	
Fluorene	< 0.050	0.050	µg/L	2020-02-28	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-02-28	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-02-28	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-02-28	
Naphthalene	< 0.200	0.200	µg/L	2020-02-28	
Phenanthrene	< 0.100	0.100	µg/L	2020-02-28	
Pyrene	< 0.020	0.020	µg/L	2020-02-28	
Quinoline	< 0.050	0.050	µg/L	2020-02-28	
Surrogate: Acridine-d9	*78*	*50-140*	%	*2020-02-28*	
Surrogate: Naphthalene-d8	*97*	*50-140*	%	*2020-02-28*	
Surrogate: Perylene-d12	*100*	*50-140*	%	*2020-02-28*	

TEST RESULTS

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Sample Qualifiers:

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.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Allterra Construction	**WORK ORDER**	0021807
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Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	Kelowna
Conductivity in Water	SM 2510 B (2017)	Conductivity Meter	Kelowna
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 (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
HEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
LEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
Nitrate+Nitrite in Water	SM 4500-NO3- F (2017)	Automated Colorimetry (Cadmium Reduction)	Kelowna
Nitrite in Water	SM 4500-NO2 B (2017)	Colorimetry	Richmond
pH in Water	SM 4500-H+ B (2017)	Electrometry	Kelowna
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MSD (SIM)	Richmond
Solids, Total Dissolved in Water	SM 2540 C* (2017)	Gravimetry (Dried at 103-105C)	Kelowna
Turbidity in Water	SM 2130 B (2017)	Nephelometry	Kelowna

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
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.

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager:nyipp@caro.ca

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Allterra Construction	**WORK ORDER**	0021807
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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 B0B1831										
Blank (B0B1831-BLK1)				Prepared: 2020-02-23, Analyzed: 2020-02-23						
Nitrite (as N)	< 0.0050	0.0050	mg/L							
LCS (B0B1831-BS1)				Prepared: 2020-02-23, Analyzed: 2020-02-23						
Nitrite (as N)	0.0452	0.0050	mg/L	0.0500		90	90-110			
Duplicate (B0B1831-DUP1)		**Source: 0021807-01**		Prepared: 2020-02-23, Analyzed: 2020-02-23						
Nitrite (as N)	0.0050	0.0050	mg/L		< 0.0050				10	
Matrix Spike (B0B1831-MS1)		**Source: 0021807-02**		Prepared: 2020-02-23, Analyzed: 2020-02-23						
Nitrite (as N)	0.0405	0.0050	mg/L	0.0500	< 0.0050	80	80-120			
Anions, Batch B0B2219										
Blank (B0B2219-BLK1)				Prepared: 2020-02-28, Analyzed: 2020-02-28						
Nitrate+Nitrite (as N)	< 0.0050	0.0050	mg/L							
LCS (B0B2219-BS1)				Prepared: 2020-02-28, Analyzed: 2020-02-28						
Nitrate+Nitrite (as N)	0.497	0.0050	mg/L	0.500		99	91-108			
Anions, Batch B0B2332										
Blank (B0B2332-BLK1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B0B2332-BLK2)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B0B2332-BS1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Chloride	16.0	0.10	mg/L	16.0		100	90-110			
Fluoride	4.07	0.10	mg/L	4.00		102	88-108			
Sulfate	15.9	1.0	mg/L	16.0		100	90-110			

APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B0B2332, Continued										
LCS (B0B2332-BS2)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Chloride	16.1	0.10	mg/L	16.0		100	90-110			
Fluoride	3.97	0.10	mg/L	4.00		99	88-108			
Sulfate	16.0	1.0	mg/L	16.0		100	90-110			
BCMOE Aggregate Hydrocarbons, Batch B0B2325										
Blank (B0B2325-BLK1)				Prepared: 2020-02-28, Analyzed: 2020-02-28						
EPHw10-19	< 250	250	µg/L							
EPHw19-32	< 250	250	µg/L							
Surrogate: 2-Methylnonane (EPH/F2-4)	*283*		*µg/L*	444		*64*	*60-126*			
LCS (B0B2325-BS2)				Prepared: 2020-02-28, Analyzed: 2020-02-28						
EPHw10-19	15000	250	µg/L	15500		97	70-117			
EPHw19-32	20500	250	µg/L	22400		92	70-113			
Surrogate: 2-Methylnonane (EPH/F2-4)	*322*		*µg/L*	444		*73*	*60-126*			
LCS Dup (B0B2325-BSD2)				Prepared: 2020-02-28, Analyzed: 2020-02-28						
EPHw10-19	16000	250	µg/L	15500		103	70-117	6	20	
EPHw19-32	21600	250	µg/L	22400		96	70-113	5	20	
Surrogate: 2-Methylnonane (EPH/F2-4)	*287*		*µg/L*	444		*65*	*60-126*			
Dissolved Metals, Batch B0B2305										
Blank (B0B2305-BLK1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Lithium, dissolved	< 0.00010	0.00010	mg/L							
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							
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							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Allterra Construction	**WORK ORDER**	0021807
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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0B2305, Continued										
Blank (B0B2305-BLK1), Continued				Prepared: 2020-02-29, Analyzed: 2020-02-29						
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							
Zinc, dissolved	< 0.0040	0.0040	mg/L							
Zirconium, dissolved	< 0.00010	0.00010	mg/L							
LCS (B0B2305-BS1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Lithium, dissolved	0.0210	0.00010	mg/L	0.0200		105	80-120			
Aluminum, dissolved	0.0205	0.0050	mg/L	0.0199		103	80-120			
Antimony, dissolved	0.0199	0.00020	mg/L	0.0200		99	80-120			
Arsenic, dissolved	0.0204	0.00050	mg/L	0.0200		102	80-120			
Barium, dissolved	0.0201	0.0050	mg/L	0.0198		101	80-120			
Beryllium, dissolved	0.0214	0.00010	mg/L	0.0198		108	80-120			
Bismuth, dissolved	0.0213	0.00010	mg/L	0.0200		106	80-120			
Boron, dissolved	0.0171	0.0050	mg/L	0.0200		85	80-120			
Cadmium, dissolved	0.0200	0.000010	mg/L	0.0199		100	80-120			
Calcium, dissolved	2.22	0.20	mg/L	2.02		110	80-120			
Chromium, dissolved	0.0205	0.00050	mg/L	0.0198		104	80-120			
Cobalt, dissolved	0.0205	0.00010	mg/L	0.0199		103	80-120			
Copper, dissolved	0.0212	0.00040	mg/L	0.0200		106	80-120			
Iron, dissolved	1.96	0.010	mg/L	2.02		97	80-120			
Lead, dissolved	0.0210	0.00020	mg/L	0.0199		105	80-120			
Magnesium, dissolved	1.98	0.010	mg/L	2.02		98	80-120			
Manganese, dissolved	0.0203	0.00020	mg/L	0.0199		102	80-120			
Molybdenum, dissolved	0.0193	0.00010	mg/L	0.0200		96	80-120			
Nickel, dissolved	0.0205	0.00040	mg/L	0.0200		103	80-120			
Phosphorus, dissolved	2.03	0.050	mg/L	2.00		102	80-120			
Potassium, dissolved	1.93	0.10	mg/L	2.02		95	80-120			
Selenium, dissolved	0.0206	0.00050	mg/L	0.0200		103	80-120			
Silicon, dissolved	1.8	1.0	mg/L	2.00		91	80-120			
Silver, dissolved	0.0205	0.000050	mg/L	0.0200		102	80-120			
Sodium, dissolved	2.02	0.10	mg/L	2.02		100	80-120			
Strontium, dissolved	0.0199	0.0010	mg/L	0.0200		100	80-120			
Sulfur, dissolved	4.8	3.0	mg/L	5.00		96	80-120			
Tellurium, dissolved	0.0204	0.00050	mg/L	0.0200		102	80-120			
Thallium, dissolved	0.0207	0.000020	mg/L	0.0199		104	80-120			
Thorium, dissolved	0.0203	0.00010	mg/L	0.0200		102	80-120			
Tin, dissolved	0.0199	0.00020	mg/L	0.0200		99	80-120			
Titanium, dissolved	0.0202	0.0050	mg/L	0.0200		101	80-120			
Tungsten, dissolved	0.0202	0.0010	mg/L	0.0200		101	80-120			
Uranium, dissolved	0.0206	0.000020	mg/L	0.0200		103	80-120			
Vanadium, dissolved	0.0201	0.0010	mg/L	0.0200		100	80-120			
Zinc, dissolved	0.0219	0.0040	mg/L	0.0200		110	80-120			
Zirconium, dissolved	0.0195	0.00010	mg/L	0.0200		97	80-120			
Reference (B0B2305-SRM1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Lithium, dissolved	0.109	0.00010	mg/L	0.100		109	77-127			
Aluminum, dissolved	0.220	0.0050	mg/L	0.235		93	79-114			
Antimony, dissolved	0.0447	0.00020	mg/L	0.0431		104	89-123			
Arsenic, dissolved	0.450	0.00050	mg/L	0.423		106	87-113			
Barium, dissolved	3.05	0.0050	mg/L	3.30		93	85-114			
Beryllium, dissolved	0.227	0.00010	mg/L	0.209		109	79-122			
Boron, dissolved	1.60	0.0050	mg/L	1.65		97	79-117			
Cadmium, dissolved	0.222	0.000010	mg/L	0.221		100	89-112			
Calcium, dissolved	7.31	0.20	mg/L	7.72		95	85-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Allterra Construction	**WORK ORDER**	0021807
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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0B2305, Continued										
Reference (B0B2305-SRM1), Continued				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Chromium, dissolved	0.446	0.00050	mg/L	0.434		103	87-113			
Cobalt, dissolved	0.129	0.00010	mg/L	0.124		104	90-117			
Copper, dissolved	0.853	0.00040	mg/L	0.815		105	90-115			
Iron, dissolved	1.24	0.010	mg/L	1.27		98	86-112			
Lead, dissolved	0.114	0.00020	mg/L	0.110		104	90-113			
Magnesium, dissolved	6.64	0.010	mg/L	6.59		101	84-116			
Manganese, dissolved	0.343	0.00020	mg/L	0.342		100	85-113			
Molybdenum, dissolved	0.404	0.00010	mg/L	0.404		100	87-112			
Nickel, dissolved	0.860	0.00040	mg/L	0.835		103	90-114			
Phosphorus, dissolved	0.497	0.050	mg/L	0.499		100	74-119			
Potassium, dissolved	2.88	0.10	mg/L	2.88		100	78-119			
Selenium, dissolved	0.0342	0.00050	mg/L	0.0324		106	89-123			
Sodium, dissolved	17.8	0.10	mg/L	18.0		99	81-117			
Strontium, dissolved	0.914	0.0010	mg/L	0.935		98	82-111			
Thallium, dissolved	0.0405	0.000020	mg/L	0.0385		105	90-113			
Uranium, dissolved	0.251	0.000020	mg/L	0.258		97	87-113			
Vanadium, dissolved	0.865	0.0010	mg/L	0.873		99	85-110			
Zinc, dissolved	0.898	0.0040	mg/L	0.848		106	88-114			
General Parameters, Batch B0B2379										
Blank (B0B2379-BLK1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
Conductivity (EC)	< 2.0	2.0	µS/cm							
Blank (B0B2379-BLK2)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Alkalinity, Total (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L							
Conductivity (EC)	< 2.0	2.0	µS/cm							
LCS (B0B2379-BS1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Alkalinity, Total (as CaCO3)	102	1.0	mg/L	100		102	80-120			
LCS (B0B2379-BS2)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Alkalinity, Total (as CaCO3)	105	1.0	mg/L	100		105	80-120			
LCS (B0B2379-BS3)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Conductivity (EC)	1400	2.0	µS/cm	1410		99	95-104			
LCS (B0B2379-BS4)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Conductivity (EC)	1400	2.0	µS/cm	1410		99	95-104			
Duplicate (B0B2379-DUP1)		**Source: 0021807-02**		Prepared: 2020-02-29, Analyzed: 2020-02-29						
Alkalinity, Total (as CaCO3)	114	1.0	mg/L		114			< 1	10	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L		< 1.0				10	
Alkalinity, Bicarbonate (as CaCO3)	114	1.0	mg/L		114			< 1	10	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L		< 1.0				10	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L		< 1.0				10	
Conductivity (EC)	377	2.0	µS/cm		367			3	5	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Allterra Construction
PROJECT P17-932

WORK ORDER 0021807
REPORTED 2020-03-23 12:13

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0B2379, Continued										
Duplicate (B0B2379-DUP1), Continued	**Source: 0021807-02**			Prepared: 2020-02-29, Analyzed: 2020-02-29						
pH	7.52	0.10	pH units		7.49			< 1	4	
Reference (B0B2379-SRM1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
pH	6.97	0.10	pH units	7.01		99	98-102			
Reference (B0B2379-SRM2)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
pH	6.97	0.10	pH units	7.01		99	98-102			
General Parameters, Batch B0B2396										
Blank (B0B2396-BLK1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Solids, Total Dissolved	< 15	15	mg/L							
LCS (B0B2396-BS1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Solids, Total Dissolved	243	15	mg/L	240		101	85-115			
General Parameters, Batch B0B2401										
Blank (B0B2401-BLK1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Turbidity	< 0.10	0.10	NTU							
LCS (B0B2401-BS1)				Prepared: 2020-02-29, Analyzed: 2020-02-29						
Turbidity	38.4	0.10	NTU	40.0		96	90-110			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0B2325										
Blank (B0B2325-BLK1)				Prepared: 2020-02-28, Analyzed: 2020-02-28						
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	0.014	0.010	µg/L							BLK
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	0.014	0.010	µg/L							BLK
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	*4.17*		*µg/L*	4.47		*93*	*50-140*			
Surrogate: Naphthalene-d8	*4.18*		*µg/L*	4.47		*93*	*50-140*			
Surrogate: Perylene-d12	*4.26*		*µg/L*	4.47		*95*	*50-140*			
LCS (B0B2325-BS1)				Prepared: 2020-02-28, Analyzed: 2020-02-28						
Acenaphthene	4.16	0.050	µg/L	4.44		94	55-137			
Acenaphthylene	4.23	0.200	µg/L	4.44		95	53-140			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Allterra Construction	**WORK ORDER**	0021807
PROJECT	P17-932	**REPORTED**	2020-03-23 12:13

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0B2325, Continued										
LCS (B0B2325-BS1), Continued				Prepared: 2020-02-28, Analyzed: 2020-02-28						
Acridine	3.88	0.050	µg/L	4.24		91	50-120			
Anthracene	4.61	0.010	µg/L	4.44		104	64-130			
Benz(a)anthracene	4.67	0.010	µg/L	4.44		105	57-140			
Benzo(a)pyrene	4.70	0.010	µg/L	4.44		106	63-133			
Benzo(b+j)fluoranthene	9.57	0.050	µg/L	8.89		108	60-129			
Benzo(g,h,i)perylene	5.00	0.050	µg/L	4.44		112	52-139			
Benzo(k)fluoranthene	4.14	0.050	µg/L	4.44		93	50-138			
2-Chloronaphthalene	4.73	0.100	µg/L	4.76		99	50-139			
Chrysene	4.77	0.050	µg/L	4.44		107	59-140			
Dibenz(a,h)anthracene	4.85	0.010	µg/L	4.44		109	53-136			
Fluoranthene	5.69	0.030	µg/L	4.44		128	67-135			
Fluorene	4.43	0.050	µg/L	4.44		100	57-134			
Indeno(1,2,3-cd)pyrene	4.73	0.050	µg/L	4.44		106	52-129			
1-Methylnaphthalene	3.94	0.100	µg/L	4.44		89	50-140			
2-Methylnaphthalene	4.02	0.100	µg/L	4.44		90	50-140			
Naphthalene	3.77	0.200	µg/L	4.44		85	50-140			
Phenanthrene	5.27	0.100	µg/L	4.44		119	61-134			
Pyrene	5.74	0.020	µg/L	4.44		129	66-131			
Quinoline	3.24	0.050	µg/L	4.31		75	50-140			
Surrogate: Acridine-d9	*3.82*		*µg/L*	4.47		*85*	*50-140*			
Surrogate: Naphthalene-d8	*3.78*		*µg/L*	4.47		*85*	*50-140*			
Surrogate: Perylene-d12	*4.50*		*µg/L*	4.47		*101*	*50-140*			
LCS Dup (B0B2325-BSD1)				Prepared: 2020-02-28, Analyzed: 2020-02-28						
Acenaphthene	4.05	0.050	µg/L	4.44		91	55-137	3	18	
Acenaphthylene	4.18	0.200	µg/L	4.44		94	53-140	1	20	
Acridine	3.86	0.050	µg/L	4.24		91	50-120	< 1	30	
Anthracene	4.28	0.010	µg/L	4.44		96	64-130	7	15	
Benz(a)anthracene	4.38	0.010	µg/L	4.44		99	57-140	6	25	
Benzo(a)pyrene	4.14	0.010	µg/L	4.44		93	63-133	13	18	
Benzo(b+j)fluoranthene	8.47	0.050	µg/L	8.89		95	60-129	12	17	
Benzo(g,h,i)perylene	4.74	0.050	µg/L	4.44		107	52-139	5	22	
Benzo(k)fluoranthene	3.66	0.050	µg/L	4.44		82	50-138	12	26	
2-Chloronaphthalene	4.74	0.100	µg/L	4.76		100	50-139	< 1	23	
Chrysene	4.47	0.050	µg/L	4.44		101	59-140	7	23	
Dibenz(a,h)anthracene	4.57	0.010	µg/L	4.44		103	53-136	6	21	
Fluoranthene	5.74	0.030	µg/L	4.44		129	67-135	< 1	18	
Fluorene	4.22	0.050	µg/L	4.44		95	57-134	5	18	
Indeno(1,2,3-cd)pyrene	4.70	0.050	µg/L	4.44		106	52-129	< 1	21	
1-Methylnaphthalene	3.99	0.100	µg/L	4.44		90	50-140	1	20	
2-Methylnaphthalene	4.09	0.100	µg/L	4.44		92	50-140	2	21	
Naphthalene	3.94	0.200	µg/L	4.44		89	50-140	4	22	
Phenanthrene	4.92	0.100	µg/L	4.44		111	61-134	7	17	
Pyrene	5.81	0.020	µg/L	4.44		131	66-131	1	19	
Quinoline	3.16	0.050	µg/L	4.31		73	50-140	3	14	
Surrogate: Acridine-d9	*3.99*		*µg/L*	4.47		*89*	*50-140*			
Surrogate: Naphthalene-d8	*4.12*		*µg/L*	4.47		*92*	*50-140*			
Surrogate: Perylene-d12	*4.06*		*µg/L*	4.47		*91*	*50-140*			

QC Qualifiers:

BLK Analyte concentration in the Method Blank is above the Reporting Limit (RL).

APPENDIX 3: REVISION HISTORY

REPORTED TO	Allterra Construction	**WORK ORDER**	0021807
PROJECT	P17-932	**REPORTED**	2020-03-23 12:13

Sample ID	Changed	Change	Analysis	Analyte(s)
0021807-01	2020-03-10	Added	Extraction Only Organic Parameter	
0021807-01	2020-03-10	Added	LEPH/HEPH Pkg	
0021807-02	2020-03-10	Added	Extraction Only Organic Parameter	
0021807-02	2020-03-10	Added	LEPH/HEPH Pkg	

CARO BC COC, Rev 2017-05

CARO ANALYTICAL SERVICES
Caring About Results, Obviously.

8-311-8846
nond, BC V6V 2K9
owna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

CHAIN OF CUSTODY RECORD

COC# FEBRUARY 2020 PAGE 1 OF 1

RELINQUISHED BY: | DATE: 2020-02-21 | TIME: | RECEIVED BY: AGP HA | DATE: 2020/02/20 | TIME: 12:00

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☒
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* ☐
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Show on Report ☐
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: ☐ Other: ☐

PROJECT NUMBER / INFO: 17-932

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

REPORT TO:
COMPANY: ALLTERRA CONSTRUCTION
ADDRESS: 2158 MILLSTREAM ROAD
VICTORIA, BC V9B6H4
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☐ EQuIS ☐ BC EMS ☐ OTHER* ☒
EMAIL 1:
EMAIL 2:
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO #: 17-932

** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, please check here: ☐

SAMPLED BY: ~~rg~~ J. CLARKSTON

ANALYSES REQUESTED:

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	CONTAINER QTY	SAMPLING: DATE YYYY-MM-DD	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)	BTEX ☐ VPH ☐ PHC F1 ☐	VOC ☐ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL ☐ Hg	METALS - WATER DISSOLVED ☐ Hg	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☒ EC ☒ ALK ☒	TSS ☐ VSS ☐ TDS ☒	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ *E. coli* ☐	ASBESTOS	HARDNESS	TURBIDITY	ANIONS AND NUTRIENTS				HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
MW19-01		✓			5	2020-02-21	10:30 am			✓					✓				✓	✓		✓	✓						✓	✓	✓					
MW19-02		✓			4	2020-02-21	11:00 am		✓	✓					✓					✓		✓	✓						✓	✓	✓					

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☒
60 Days ☐ 90 Days ☐

*** OTHER INSTRUCTIONS:**
UNABLE TO OBTAIN COMPLETE BOTTLE AMOUNT FOR MW19-01 TOTAL METALS SAMPLE. PLEASE ATTEMPT TO TEST.

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): ____ ICE: Y ☐ N ☐
COOLER 2 (°C): ____ ICE: Y ☐ N ☐
COOLER 3 (°C): ICE: Y ☐ N ☐