



FIELD REVIEW REPORT		DATE: April 15, 2020	ISLANDER PROJECT No.: 2087
REPORT No: 66	STAGE OF CONSTRUCTION: Landfill Closure	WEATHER: Sun 17°C	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 “Construction Activities” occurred this reporting cycle.
- Excavation for the PEA Drainage Soak Away Trench occurred this reporting period.
- Source material: 3100 Constellation Avenue, Langford BC & 765 Willing Drive, Langford, British Columbia
- 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
- 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 April 15, 2020



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.
- Continuation of the PEA toe drainage soak away trench is planned as follows: 1/ install finger drain at low point of trench to drain towards the North 2/ fill excavated trench along PEA north face and existing V-shaped ditch between PEA and soil berm along East face with shot-rock and connect to trench along North face; and 3/ 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 did not occur this reporting period. Tabulated results and Laboratory Certificates for Q1 2020 are attached.
- *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 letters of assurance provided by CSAP to BC ENV.

Total Leachate Collected: 0 m³

Total Leachate Stored: 7.93 m³

Total Leachate Transferred: 49.59 m³ to SPL Wastewater Recovery Center at 995 Henry Eng Place, Langford, BC, V9B 6B2

ISLANDER ENGINEERING LTD.

Mike Achtem, P.Eng



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Site – Looking West



Stockpile Location – Looking East



Stockpile Location – Looking Northeast



PEA – Looking East



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Imported Soil



Soil Stockpiling – Looking South



Site – Looking Northwest



Site – Looking North

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

Table 1: Analytical Results for Nutrients

Sample Location	CSR Standards ⁽¹⁾		MW19-01	MW19-02	SB1	SB2	SB3
	As-built Well Depths to Bottom (mbgs)		6.27m	8.07m	3.24m	2.65m	2.94m
Sample ID			0031817-01	0031817-02	0031817-03	0031817-04	0031817-05
Date Sampled	Aquatic Life	Drinking Water	MW19-01	MW19-02	SB1	SB2	SB3
			2020-03-20	2020-03-20	2020-03-20	2020-03-20	2020-03-20
Physical Tests							
Conductivity (uS/cm)	-	-	371	424	256	396	533
Hardness (as CaCO3) mg/L	-	-	80.7	226	127	188	310
pH (pH Units)	-	-	8.02	7.76	7.58	7.58	7.67
Total Dissolved Solids mg/L	-	-	236	306	152	263	397
Turbidity (NTU)	-	-	257	1.36	23.6	29.9	83.4
Anions and Nutrients mg/L							
Alkalinity, Bicarbonate (as CaCO3)			137	153	96.7	157	208
Alkalinity, Carbonate (as CaCO3)			<1.0	<1.0	<1.0	<1.0	<1.0
Chloride (Cl)	1500	250	16	11	4.07	27.1	9.7
Fluoride (F)	2 (H < 50)	1.5					
	3 (H ≥ 50)		0.16	<0.10	<0.10	<0.10	<0.10
Nitrate (as N)	400	10	0.165	0.5	0.155	0.151	0.448
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				<0.0050		
Cl 6 - <8 mg/L	0.8						
Cl 8 - <10 mg/L	1						<0.0050
Cl ≥ 10 mg/L	2						
Sulfate (SO4)	1000	500	0.007	<0.0050		<0.0050	
			46.3	104	40.7	42.2	121

Notes: Refer to Table Endnotes (attached)

Table 2: Analytical Results for Dissolved Metals

Sample Location	CSR Standards ⁽¹⁾		MW19-01	MW19-02	SB1	SB2	SB3
As-built Well Depths (mbgs)			6.27m	8.07m	3.24m	2.65m	2.94m
Sample ID			0031817-01	0031817-02	0031817-03	0031817-04	0031817-05
			MW19-01	MW19-02	SB1	SB2	SB3
Date Sampled	Aquatic Life	Drinking Water	2020-03-20	2020-03-20	2020-03-20	2020-03-20	2020-03-20
Physical Tests mg/L							
Hardness (as CaCO3)	-	-	80.7	226	127	188	310
Dissolved Metals mg/L							
Aluminum (Al)-Dissolved	-	9.5	0.0098	<0.0050	<0.0050	0.0248	<0.0050
Antimony (Sb)-Dissolved	0.2	0.006	0.00031	<0.00020	<0.00020	<0.00020	<0.00020
Arsenic (As)-Dissolved	0.05	0.01	0.00207	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)-Dissolved	10	1	0.0096	0.0147	0.0056	0.0069	0.008
Beryllium (Be)-Dissolved	0.053	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron (B)-Dissolved	50	5	0.102	0.0656	0.0474	0.0474	0.0439
Cadmium (Cd)-Dissolved	0.0001 (H<30)	0.005	<0.000010				
	0.0003 (H=30-<90)						
	0.0005 (H=90-<150)			<0.000010			
	0.0006 (H=150-<210)			<0.000010	<0.000010	<0.000010	
Calcium (Ca)-Dissolved	-	-	26	75.3	44.4	61.1	102
Chromium (Cr)-Dissolved	0.01	0.05	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Colbalt (Co)-Dissolved	0.04	-	0.00014	<0.00010	<0.00010	<0.00010	0.00017
Copper (Cu)-Dissolved	0.02 (H<50)	1					
	0.03 (H=50-<75)						
	0.04 (H=75-<100)		0.00097				
	0.05 (H=100-<125)						
	0.06 (H=125-<150)			0.00058			
	0.07 (H=150-<175)						
	0.08 (H=175-<200)				0.00697		
Iron (Fe)-Dissolved	-	6.5	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)-Dissolved	0.04 (H<50)	0.01	<0.00020				
	0.05 (H=50-<100)				<0.00020	<0.00020	
	0.06 (H=100-<200)			<0.00020			
	0.11 (H=200-<300)					<0.00020	
	0.16 (H>300)						
Lithium (Li)-Dissolved	-	-	0.00577	0.0002	0.00011	0.00024	0.00015
Magnesium (Mg)-Dissolved	-	100	3.83	9.21	3.94	8.5	13.5
Manganese (Mn)-Dissolved	-	0.55	0.0648	0.00525	0.00038	0.00073	0.00502
Mercury (Hg)-Dissolved	0.001	0.001	-	-	-	-	-
Molybdenum (Mo)-Dissolved	10	0.25	0.0122	0.00102	0.00043	0.00052	0.0008
Nickel (Ni)-Dissolved	0.25 (H<60)	-	0.00097				
	0.65 (H=60-<120)						
	1.1 (H=120-<180)			0.00308			
	1.5 (H>180)			<0.00040	0.00175	0.00124	
Phosphorus (P)-Dissolved	-	-	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	-	-	1.26	0.73	0.29	0.77	0.66
Selenium (Se)-Dissolved	0.01	0.01	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon (Si)-Dissolved	-	-	5.4	5.4	4.2	6.1	6.5
Silver (Ag)-Dissolved	0.0005 (H<=100)	-	<0.000050				
	0.015 (H>100)		<0.000050	<0.000050	<0.000050	<0.000050	
Sodium (Na)-Dissolved	-	200	50.7	9.22	3.09	14.9	7.97
Strontium (Sr)-Dissolved	-	-	0.124	0.232	0.107	0.185	0.217
Sulfur (S)-Dissolved	-	-	15.7	34.1	13	13.7	41.7
Tellurium (Te)-Dissolved	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Thallium (Tl)-Dissolved	0.003	-	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Thorium (Th)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	-	-	<0.00020	<0.00020	<0.00020	0.00035	<0.00020
Titanium (Ti)-Dissolved	1	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Tungsten (W)-Dissolved	-	-	0.106	0.0182	<0.0010	<0.0010	<0.0010
Uranium (U)-Dissolved	3	0.02	0.00294	0.00114	0.000382	0.000815	0.00179
Vanadium (V)-Dissolved	-	-	<0.0010	0.0014	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	0.075 (H<90)	5	<0.0040				
	0.150 (H=90-<100)						
	0.900 (H=100-<200)			<0.0040	<0.0040		
	1.650 (H=200-<300)			<0.0040		<0.0040	
Zirconium (Zr)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<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	SB1	SB2	SB3
	As-built Well Depths (mbgs)		6.27m	8.07m	3.24m	2.65m	2.94m
Sample ID			0031817-01	0031817-02	0031817-03	0031817-04	0031817-05
Date Sampled	Aquatic Life	Drinking Water	MW19-01	MW19-02	SB1	SB2	SB3
			2020-03-20	2020-03-20	2020-03-20	2020-03-20	2020-03-20
Turbidity (NTU)	-	-	257	1.36	23.6	29.9	83.4
Hydrocarbons ug/L							
EPH10-19	5000	5000	<250	<250	<250	<250	<250
EPH10-19 (SG)	5000	5000					
EPH19-32	-	-	<250	<250	<250	<250	<250
EPH19-32 (SG)	-	-					
LEPH	500	-	<250	<250	<250	<250	<250
HEPH	-	-	<250	<250	<250	<250	<250
Polycyclic Aromatic Hydrocarbons ug/L							
Acenaphthene	60	-	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	-	-	<0.200	<0.200	<0.200	<0.200	<0.200
Acridine	0.5	-	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	1	-	<0.010	<0.010	<0.010	<0.010	<0.010
Benz(a)anthracene	1	-	<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
Benzo(b)fluoranthene	-	-	-	-	-	-	-
Benzo(b+j)fluoranthene	-	-	<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
Benzo(k)fluoranthene	-	-	<0.050	<0.050	<0.050	<0.050	<0.050
2-Chloronaphthalene	-	-	<0.100	<0.100	<0.100	<0.100	<0.100
Chrysene	1	-	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenz(a,h)anthracene	-	-	<0.010	<0.010	<0.010	<0.010	<0.010
Fluoranthene	2	-	<0.030	<0.030	<0.030	<0.030	<0.030
Fluorene	120	-	<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
1-Methylnaphthalene	-	-	<0.100	<0.100	<0.100	<0.100	<0.100
2-Methylnaphthalene	-	-	<0.100	<0.100	<0.100	<0.100	<0.100
Naphthalene	10	-	<0.200	<0.200	<0.200	<0.200	<0.200
Phenanthrene	3	-	<0.100	<0.100	<0.100	<0.100	<0.100
Pyrene	0.2	-	<0.020	<0.020	<0.020	<0.020	<0.020
Quinoline	34	-	<0.050	<0.050	<0.050	<0.050	<0.050

Notes: Refer to Table Endnotes (attached)

Analytical Table Footnotes: Leachate and 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

Table 1: Analytical Results for Nutrients			SHA-LE-1	SHA-SW-1	SHA-SW-1	RPD
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	0031093-01	0031817-07	0031817-08	
Sample ID			20200311_LE-1	SW1	SW1	
Date Sampled/Time			2020-03-11	2020-03-20	2020-03-20	
Physical Tests						
Total Dissolved Solids (mg/L)	-	-	8400	205	205	0.00%
pH	7-10.5	6.5-9	-	7.84	7.86	0.25%
Conductivity (uS/cm)	-	-	-	290	322	10.46%
Hardness (as CaCO3)	-	-	3080	152	153	0.66%
Turbidity (NTU)	Δ1 NTU	8 NTU above background (24-hr during clear flow)	-	1.12	0.22	*
Anions and Nutrients mg/L						
Alkalinity Bicarbonate (as CaCO3)	<10 high sensitivity to acid inputs 10-20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs		34.7	110	110	0.00%
Alkalinity Carbonate (as CaCO3)			<1.0	<1.0	<1.0	*
Acid Sensitivity			Low	Low	Low	
Chloride (Cl)	250 mg/L	600 mg/L (instant max), 150 mg/L (30-day average)	3500	8.02	8.13	1.36%
Fluoride (F)	1.5 mg/L (instant max) 1.0 mg/L (30-day average)	0.4 (Hardness <10mg/L)	<1.00	<0.10	<0.10	*
		Hardness-Dependent AW (Hardness is >10mg/L) ⁽³⁾	-	0.31	0.31	-
Nitrate (as N)	45 mg/L	32.8 mg/L (instant maximum) 3.0 mg/L (30-day average)	1.72	0.192	0.241	22.63%
Nitrite (as N) ⁽²⁾	3 mg/L	Cl > 10 mg/L 0.6 mg/L (MAX), 0.2 mg/L (30-day average)	0.465	<0.0050	<0.0050	*
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)		60	60.9	1.49%
H 181 - 250 mg/L		429 mg/L (30-day average)				
H > 250 mg/L		TBD		1430		

Notes: Refer to Table Endnotes (attached)

Table 2: Analytical Results for Total Metals				SHA-LE-1	SHA-SW-1	SHA-SW-1	RPD
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	0031093-01	0031817-07	0031817-08		
Sample ID			20200311_LE-1	SW1	SW1		
Date Sampled/Time			2020-03-11	2020-03-20	2020-03-20		
Physical Tests							
Hardness (as CaCO3) (mg/L)	-	-	3080	152	153	0.66%	
pH	7-10.5	6.5-9	-	7.84	7.86	0.25%	
Total Metals (mg/L)							
Aluminum (Al)-Total	0.2	-	0.0776	0.0095	0.0063	*	
Antimony (Sb)-Total	-	-	<0.00020	<0.00020	<0.00020	*	
Arsenic (As)-Total	0.01	0.005	<0.00050	<0.00050	<0.00050	*	
Barium (Ba)-Total	-	-	0.0169	0.0085	0.0083	*	
Beryllium (Be)-Total	-	-	<0.00010	<0.00010	<0.00010	*	
Bismuth, total	-	-	<0.00010	<0.00010	<0.00010	*	
Boron (B)-Total	5	1.2	0.209	0.0338	0.027	22.37%	
Cadmium (Cd)-Total	-	-	0.000705	<0.000010	<0.000010	*	
Calcium (Ca)-Total	-	-	859	53.2	50.2	5.80%	
Chromium (Cr)-Total	-	-	0.0108	<0.00050	<0.00050	*	
Chromium (Cr(III))	-	-	-	-	-	-	
Chromium (Cr(VI))	-	-	-	-	-	-	
Cobalt (Co)-Total	-	0.110 (Short Term), 0.004 (Long Term Average)	0.00195	<0.00010	<0.00010	*	
Copper (Cu)-Total	0.5	Hardness-Dependent ⁽⁷⁾	0.00198	0.00092	0.00085	7.91%	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	0.2915	0.0163	0.0164	-	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	0.1232	0.0061	0.0061	-	
Iron (Fe)-Total	-	1	0.029	<0.010	<0.010	*	
Lead (Pb)-Total	0.01	Hardness-Dependent ⁽³⁾	<0.00020	<0.00020	<0.00020	*	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	6.4100	0.1391	0.1403	-	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	0.2533	0.0087	0.0088	-	
Lithium (Li)-Total	-	-	0.00042	0.00015	0.00015	*	
Magnesium (Mg)-Total	-	-	261	7.34	7.06	3.89%	
Manganese (Mn)-Total	-	Hardness-Dependent ⁽³⁾	19.5	0.00182	0.00082	*	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	34.5	2.2	2.2	-	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	14.2	1.3	1.3	-	
Mercury (Hg)-Total	0.001	0.00002	<0.000010	-	-	*	
Molybdenum (Mo)-Total	0.25	≤1 (instant max) 2 (30-d average)	0.00027	0.00059	0.00052	12.61%	
Nickel (Ni)-Total	-	0.025 (Hardness-Dependent ⁽⁸⁾ BCAWQG to protect AW H<60mg/L)	0.0128	0.00048	<0.00040	*	
		Calculated Hardness-Dependent ⁽⁸⁾ BCAWQG to protect AW 60≤H<180 mg/L CaCO3	1.292	0.131	0.132	-	
Phosphorus(P)-Total	-	-	<0.050	<0.050	<0.050	*	
Potassium (K)-Total	-	-	26.4	0.58	0.55	5.31%	
Selenium (Se)-Total	0.01	0.002	<0.00050	<0.00050	<0.00050	*	
Silicon (Si)-Total	-	-	6.6	5.3	4.9	7.84%	
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)	0.000138	0.00006	<0.000050	*	
Sodium (Na)-Total	-	-	2070	6.24	6	3.92%	
Strontium (Sr)-Total	-	-	4.39	0.146	0.137	6.36%	
Sulfur (S)-Total	-	-	627	23.3	21.4	8.50%	
Tellurium (Te)-Total	-	-	<0.00050	<0.00050	<0.00050	*	
Thallium (Tl)-Total	-	-	0.000033	<0.000020	<0.000020	*	
Thorium (Th)-Total	-	-	<0.00010	<0.00010	<0.00010	*	
Tin (Sn)-Total	-	-	<0.00020	<0.00020	<0.00020	*	
Titanium (Ti)-Total	-	-	<0.00050	<0.00050	<0.00050	*	
Tungsten (W)-Total	-	-	<0.0010	<0.0010	<0.0010	*	
Uranium (U)-Total	-	-	0.000135	0.000721	0.000661	8.68%	
Vanadium (V)-Total	-	-	<0.0010	0.0013	0.0015	*	
Zinc (Zn)-Total	5.0	Hardness >90 mg/L	0.0425	<0.0040	<0.0040	*	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	2.276	0.080	0.080	-	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	2.250	0.054	0.055	-	
Zirconium (Zr)-Total	-	-	<0.00010	<0.00010	<0.00010	*	

Table 3: Analytical Results for Dissolved Metals			SHA-LE-1	SHA-SW-1	SHA-SW-1	RPD
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	0031093-01	0031817-07	0031817-08	
Sample ID			20200311_LE-1	SW1	SW1	
Date Sampled/Time			2020-03-11	2020-03-20	2020-03-20	
Physical Tests						
Hardness (as CaCO3) (mg/L)	-	-	3080	152	153	0.66%
pH	7-10.5	6.5-9	-	7.84	7.86	0.25%
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	0.0119	<0.0050	<0.0050	*
		pH/Hardness Dependent BCAWQG to protect AW ⁽⁴⁾ (instant max)	-	0.793	0.827	
		pH/Hardness Dependent BCAWQG to protect AW ⁽⁴⁾ (30-d Mean)	-	1.253	1.330	
Antimony (Sb)-Dissolved	-	-	<0.00020	<0.00020	<0.00020	*
Arsenic (As)-Dissolved	-	-	<0.00050	<0.00050	<0.00050	*
Barium (Ba)-Dissolved	-	-	0.0155	0.0095	0.0079	*
Beryllium (Be)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	*
Bismuth (Bi)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	*
Boron (B)-Dissolved	-	-	0.19	0.0337	0.0234	*
Cadmium (Cd)-Dissolved	-	Hardness-Dependent⁽³⁾	0.000684	<0.000010	<0.000010	*
		Calculated Hardness-Dependent ⁽³⁾ BCAWQG to protect AW (short-term max) $e[1.03 * \ln(Hss) - 5.274]$ ug/L H<455mg/L	Hardness exceeds 455mg/L	0.00091	0.00091	
		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	0.00029	0.00029	
Calcium (Ca)-Dissolved	-	up to 4, highly sensitive to acid inputs 4 to 8, moderately sensitive over 8 low sensitivity	833	49.4	49.7	0.61%
Chromium (Cr)-Dissolved	-	-	Low	Low	Low	
Chromium (Cr)-Dissolved	-	-	0.00878	<0.00050	<0.00050	*
Cobalt (Co)-Dissolved	-	-	0.00179	<0.00010	<0.00010	*
Copper (Cu)-Dissolved	-	-	0.00181	0.00085	0.00081	*
Iron (Fe)-Dissolved	-	0.35	0.026	<0.010	<0.010	*
Lead (Pb)-Dissolved	-	-	<0.00020	<0.00020	<0.00020	*
Lithium, dissolved	-	-	0.00029	0.00013	0.00013	*
Magnesium (Mg)-Dissolved	-	-	241	6.9	7.08	2.58%
Manganese (Mn)-Dissolved	-	-	19.1	0.00055	0.00053	*
Mercury (Hg)-Dissolved	-	-	<0.000010	-	-	*
Molybdenum (Mo)-Dissolved	-	-	0.00044	0.00053	0.00056	5.50%
Nickel (Ni)-Dissolved	-	-	0.0118	<0.00040	<0.00040	*
Phosphorus (P)-Dissolved	-	-	<0.050	<0.050	<0.050	*
Potassium (K)-Dissolved	-	-	24.7	0.54	0.55	1.83%
Selenium (Se)-Dissolved	-	-	<0.00050	<0.00050	<0.00050	*
Silicon (Si)-Dissolved	-	-	6.5	5	5.2	3.92%
Silver (Ag)-Dissolved	-	-	0.000107	<0.000050	<0.000050	*
Sodium (Na)-Dissolved	-	-	1880	5.87	5.99	2.02%
Strontium (Sr)-dissolved	-	-	4.14	0.137	0.139	1.45%
Sulfur (S)-Dissolved	-	-	588	19	20.6	8.08%
Tellurium (Te)-Dissolved	-	-	<0.00050	<0.00050	<0.00050	*
Thallium (Tl)-Dissolved	-	-	0.000023	<0.000020	<0.000020	*
Thorium (Th)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	*
Tin (Sn)-Dissolved	-	-	<0.00020	<0.00020	<0.00020	*
Titanium (Ti)-Dissolved	-	-	<0.0050	<0.0050	<0.0050	*
Tungsten (W)-Dissolved	-	-	<0.0010	<0.0010	<0.0010	
Uranium (U)-Dissolved	-	-	0.000116	0.000662	0.000661	0.15%
Vanadium (V)-Dissolved	-	-	<0.0010	<0.0010	<0.0010	*
Zinc (Zn)-Dissolved	-	-	0.0415	<0.0040	<0.0040	*
Zirconium (Zr)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	*

Notes: Refer to Table Endnotes (attached)

Table 4: Analytical Results for Hydrocarbons and PAHs			SHA-LE-1	SHA-SW-1	SHA-SW-1	RPD
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	0031817-06	0031817-07	0031817-08	
Sample ID			LE-1	SW1	SW1	
Date Sampled/ Time			2020-03-20	2020-03-20	2020-03-20	
Hydrocarbons ug/L						
LEPH	-	-	421	<250	<250	*
HEPH	-	-	2430	<250	<250	*
Polycyclic Aromatic						
Acenaphthene	-	6 (LONG TERM)	<0.050	<0.050	<0.050	*
Acenaphthylene	-	-	<0.200	<0.200	<0.200	*
Acridine	-	3 (LONG TERM), 0.05 (PHOTOTOXIC)	<0.050	<0.050	<0.050	*
Anthracene	-	4 (LONG TERM), 0.1 (PHOTOTOXIC)	<0.010	<0.010	<0.010	*
Benz(a)anthracene	0.01	0.1 (LONG TERM), 0.1 (PHOTOTOXIC)	<0.010	<0.010	<0.010	*
Benzo(a)pyrene	-	0.01 (LONG TERM)	<0.010	<0.010	<0.010	*
Benzo(b)fluoranthene	-	-	-	-	-	-
Benzo(b+j)fluoranthene	-	-	<0.050	<0.050	<0.050	*
Benzo(g,h,i)perylene	-	-	<0.050	<0.050	<0.050	*
Benzo(k)fluoranthene	-	-	<0.050	<0.050	<0.050	*
2-Chloronaphthalene			<0.100	<0.100	<0.100	*
Chrysene	-	-	<0.050	<0.050	<0.050	*
Dibenz(a,h)anthracene	-	-	<0.010	<0.010	<0.010	*
Fluoranthene	-	4 (LONG TERM), 0.2 (PHOTOTOXIC)	<0.030	<0.030	<0.030	*
Fluorene	-	12 (LONG TERM)	<0.050	<0.050	<0.050	*
Indeno(1,2,3-c,d)pyrene	-	-	<0.050	<0.050	<0.050	*
1-Methylnaphthalene			<0.100	<0.100	<0.100	*
2-Methylnaphthalene			<0.100	<0.100	<0.100	*
Naphthalene	-	1 (LONG TERM)	<0.200	<0.200	<0.200	*
Phenanthrene	-	0.3 (LONG TERM)	<0.100	<0.100	<0.100	*
Pyrene	-	0.02 (PHOTOTOXIC)	<0.020	<0.020	<0.020	*
Quinoline	-	-	<0.050	<0.050	<0.050	*

Notes: Refer to Table Endnotes (attached)

CERTIFICATE OF ANALYSIS

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

ATTENTION Rahim Gaidhar

PO NUMBER 17-932

PROJECT P17-932

PROJECT INFO

WORK ORDER 0031817

RECEIVED / TEMP 2020-03-21 10:30 / 9°C

REPORTED 2020-03-30 13:30

COC NUMBER MARCH 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



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Ahead of the Curve



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

Authorized By:

Nicole Yipp
Team Lead, Client Service

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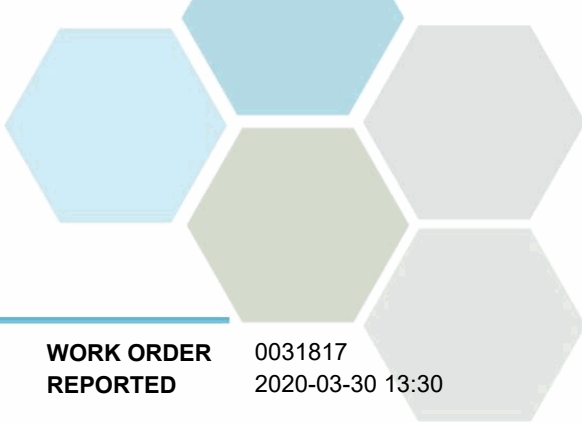


TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
MW19-01 (0031817-01) Matrix: Water Sampled: 2020-03-20 12:30					
Anions					
Chloride	16.0	0.50	mg/L	2020-03-26	
Fluoride	0.16	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.172	0.0050	mg/L	2020-03-24	
Nitrite (as N)	0.0070	0.0050	mg/L	2020-03-22	
Sulfate	46.3	1.0	mg/L	2020-03-26	
BCMOE Aggregate Hydrocarbons					
EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	66	60-126	%	2020-03-26	
Calculated Parameters					
Hardness, Total (as CaCO3)	80.7	0.500	mg/L	N/A	
Nitrate (as N)	0.165	0.0100	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.00577	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	0.0098	0.0050	mg/L	2020-03-26	
Antimony, dissolved	0.00031	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	0.00207	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0096	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.102	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	26.0	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	0.00014	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00097	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	3.83	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.0648	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.0122	0.00010	mg/L	2020-03-26	
Nickel, dissolved	0.00097	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	1.26	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	5.4	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	50.7	0.10	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW19-01 (0031817-01) | Matrix: Water | Sampled: 2020-03-20 12:30, Continued

Dissolved Metals, Continued

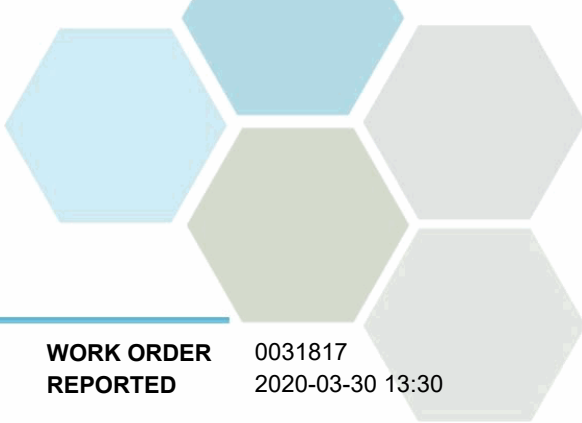
Strontium, dissolved	0.124	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	15.7	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	0.106	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.00294	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	137	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	137	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	371	2.0	µS/cm	2020-03-24	
pH	8.02	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	236	15	mg/L	2020-03-26	
Turbidity	257	0.10	NTU	2020-03-24	HT1

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-26	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-26	
Acridine	< 0.050	0.050	µg/L	2020-03-26	
Anthracene	< 0.010	0.010	µg/L	2020-03-26	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-26	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-26	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-26	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-26	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-26	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-26	
Chrysene	< 0.050	0.050	µg/L	2020-03-26	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-26	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-26	
Fluorene	< 0.050	0.050	µg/L	2020-03-26	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-26	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-26	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-26	
Naphthalene	< 0.200	0.200	µg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW19-01 (0031817-01) | Matrix: Water | Sampled: 2020-03-20 12:30, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Phenanthrene	< 0.100	0.100	µg/L	2020-03-26	
Pyrene	< 0.020	0.020	µg/L	2020-03-26	
Quinoline	< 0.050	0.050	µg/L	2020-03-26	
Surrogate: Acridine-d9	76	50-140	%	2020-03-26	
Surrogate: Naphthalene-d8	76	50-140	%	2020-03-26	
Surrogate: Perylene-d12	70	50-140	%	2020-03-26	

MW19-02 (0031817-02) | Matrix: Water | Sampled: 2020-03-20 13:30

Anions

Chloride	11.0	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.500	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	104	1.0	mg/L	2020-03-27	

BCMOE Aggregate Hydrocarbons

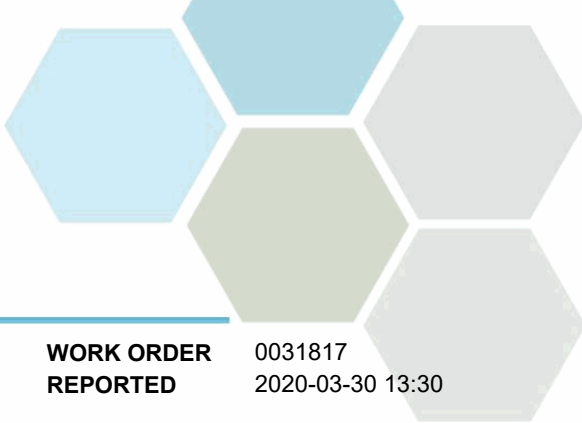
EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	80	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	226	0.500	mg/L	N/A	
Nitrate (as N)	0.500	0.0100	mg/L	N/A	

Dissolved Metals

Lithium, dissolved	0.00020	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0147	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0656	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	75.3	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00084	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW19-02 (0031817-02) | Matrix: Water | Sampled: 2020-03-20 13:30, Continued

Dissolved Metals, Continued

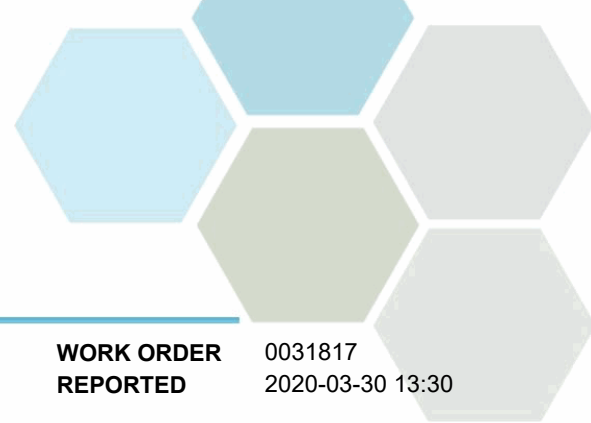
Magnesium, dissolved	9.21	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00525	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00102	0.00010	mg/L	2020-03-26	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.73	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	5.4	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	9.22	0.10	mg/L	2020-03-26	
Strontium, dissolved	0.232	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	34.1	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	0.0182	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.00114	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	0.0014	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	153	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	153	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	424	2.0	µS/cm	2020-03-24	
pH	7.76	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	306	15	mg/L	2020-03-26	
Turbidity	1.36	0.10	NTU	2020-03-24	HT1

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-28	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-28	
Acridine	< 0.050	0.050	µg/L	2020-03-28	
Anthracene	< 0.010	0.010	µg/L	2020-03-28	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-28	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-28	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-28	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-28	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
MW19-02 (0031817-02) Matrix: Water Sampled: 2020-03-20 13:30, Continued					
<i>Polycyclic Aromatic Hydrocarbons (PAH), Continued</i>					
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-28	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-28	
Chrysene	< 0.050	0.050	µg/L	2020-03-28	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-28	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-28	
Fluorene	< 0.050	0.050	µg/L	2020-03-28	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-28	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-28	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-28	
Naphthalene	< 0.200	0.200	µg/L	2020-03-28	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-28	
Pyrene	< 0.020	0.020	µg/L	2020-03-28	
Quinoline	< 0.050	0.050	µg/L	2020-03-28	
Surrogate: Acridine-d9	94	50-140	%	2020-03-28	
Surrogate: Naphthalene-d8	74	50-140	%	2020-03-28	
Surrogate: Perylene-d12	94	50-140	%	2020-03-28	

SB1 (0031817-03) | Matrix: Water | Sampled: 2020-03-20 12:00

Anions

Chloride	4.07	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.155	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	40.7	1.0	mg/L	2020-03-26	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	85	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	127	0.500	mg/L	N/A	
Nitrate (as N)	0.155	0.0100	mg/L	N/A	

Dissolved Metals

Lithium, dissolved	0.00011	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0056	0.0050	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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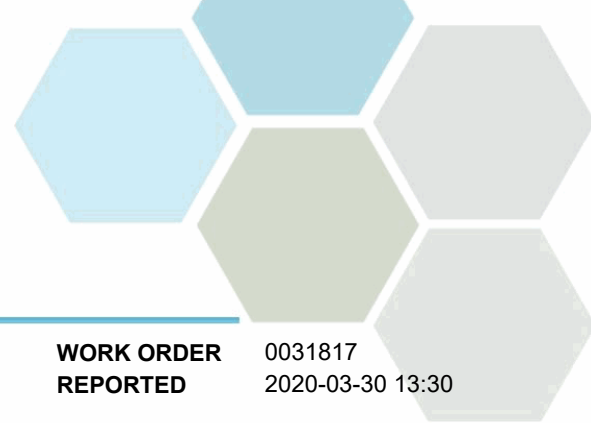
SB1 (0031817-03) | Matrix: Water | Sampled: 2020-03-20 12:00, Continued

Dissolved Metals, Continued

Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0474	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	44.4	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00058	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	3.94	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00038	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00043	0.00010	mg/L	2020-03-26	
Nickel, dissolved	0.00308	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.29	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	4.2	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	3.09	0.10	mg/L	2020-03-26	
Strontium, dissolved	0.107	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	13.0	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.000382	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	96.7	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	96.7	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	256	2.0	µS/cm	2020-03-24	
pH	7.58	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	152	15	mg/L	2020-03-26	
Turbidity	23.6	0.10	NTU	2020-03-24	HT1



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
SB1 (0031817-03) Matrix: Water Sampled: 2020-03-20 12:00, Continued					
Polycyclic Aromatic Hydrocarbons (PAH)					
Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	93	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	88	50-140	%	2020-03-27	
Surrogate: Perylene-d12	92	50-140	%	2020-03-27	

SB2 (0031817-04) | Matrix: Water | Sampled: 2020-03-20 11:15

Anions

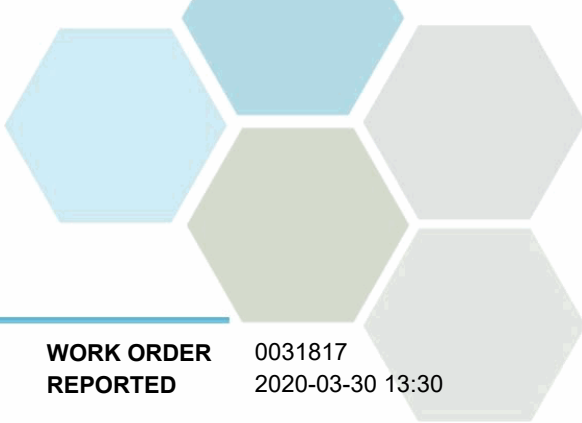
Chloride	27.1	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.151	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	42.2	1.0	mg/L	2020-03-26	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	88	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	188	0.500	mg/L	N/A	
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TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB2 (0031817-04) | Matrix: Water | Sampled: 2020-03-20 11:15, Continued

Calculated Parameters, Continued

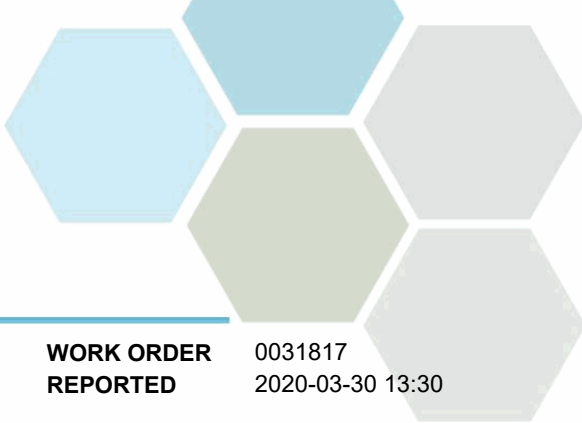
Nitrate (as N)	0.151	0.0100	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.00024	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	0.0248	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0069	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0474	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	61.1	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00697	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	8.50	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00073	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00052	0.00010	mg/L	2020-03-26	
Nickel, dissolved	0.00175	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.77	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	6.1	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	14.9	0.10	mg/L	2020-03-26	
Strontium, dissolved	0.185	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	13.7	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	0.00035	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.000815	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	157	1.0	mg/L	2020-03-24	
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TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
SB2 (0031817-04) Matrix: Water Sampled: 2020-03-20 11:15, Continued					
<i>General Parameters, Continued</i>					
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	157	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	396	2.0	µS/cm	2020-03-24	
pH	7.58	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	263	15	mg/L	2020-03-26	
Turbidity	29.9	0.10	NTU	2020-03-24	HT1

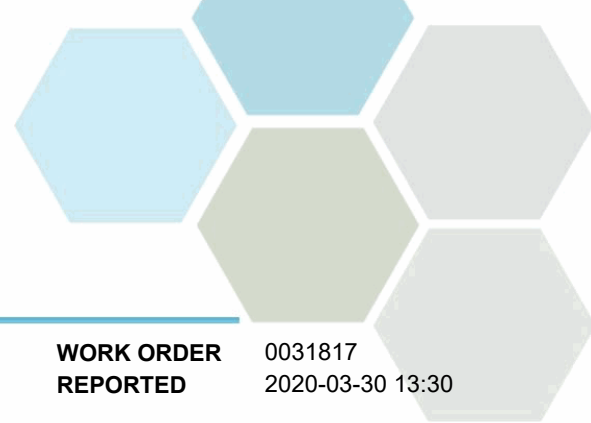
Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	53	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	83	50-140	%	2020-03-27	
Surrogate: Perylene-d12	83	50-140	%	2020-03-27	

SB3 (0031817-05) | Matrix: Water | Sampled: 2020-03-20 10:15

Anions

Chloride	9.70	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.448	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	121	1.0	mg/L	2020-03-27	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB3 (0031817-05) | Matrix: Water | Sampled: 2020-03-20 10:15, Continued

Anions, Continued

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	90	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	310	0.500	mg/L	N/A	
Nitrate (as N)	0.448	0.0100	mg/L	N/A	

Dissolved Metals

Lithium, dissolved	0.00015	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0080	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0439	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	102	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	0.00017	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00097	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	13.5	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00502	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00080	0.00010	mg/L	2020-03-26	
Nickel, dissolved	0.00124	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.66	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	6.5	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	7.97	0.10	mg/L	2020-03-26	
Strontium, dissolved	0.217	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	41.7	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB3 (0031817-05) | Matrix: Water | Sampled: 2020-03-20 10:15, Continued

Dissolved Metals, Continued

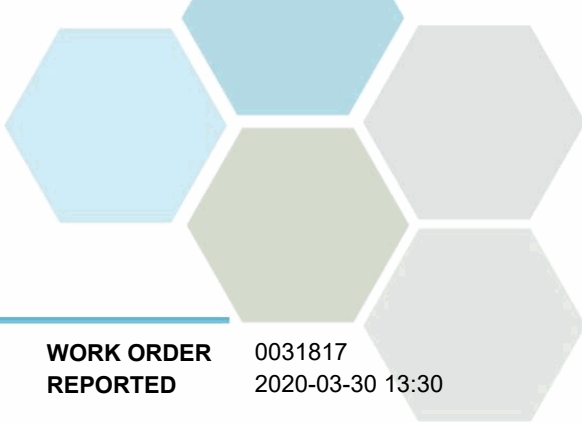
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.00179	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	208	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	208	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	533	2.0	µS/cm	2020-03-24	
pH	7.67	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	397	15	mg/L	2020-03-26	
Turbidity	83.4	0.10	NTU	2020-03-24	HT1

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	53	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	76	50-140	%	2020-03-27	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB3 (0031817-05) | Matrix: Water | Sampled: 2020-03-20 10:15, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Surrogate: Perylene-d12	81	50-140	%	2020-03-27	
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LE-1 (0031817-06) | Matrix: Water | Sampled: 2020-03-20 11:30

BCMOE Aggregate Hydrocarbons

EPHw10-19	421	250	µg/L	2020-03-26	
EPHw19-32	2430	250	µg/L	2020-03-26	
LEPHw	421	250	µg/L	N/A	
HEPHw	2430	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	89	60-126	%	2020-03-26	

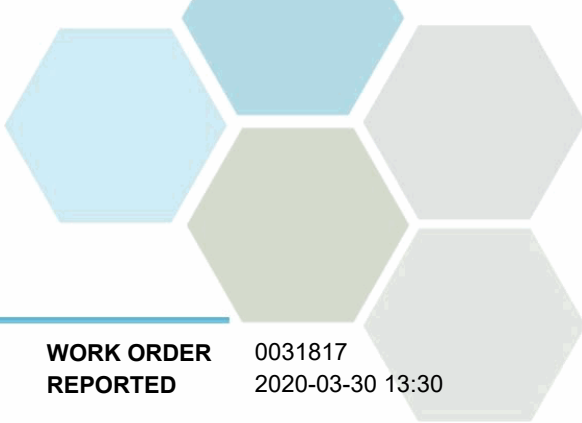
Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	92	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	87	50-140	%	2020-03-27	
Surrogate: Perylene-d12	82	50-140	%	2020-03-27	

SW1 (0031817-07) | Matrix: Water | Sampled: 2020-03-20 13:50

Anions

Chloride	8.02	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	



TEST RESULTS

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2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SW1 (0031817-07) | Matrix: Water | Sampled: 2020-03-20 13:50, Continued

Anions, Continued

Nitrate+Nitrite (as N)	0.192	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	60.0	1.0	mg/L	2020-03-26	

BCMOE Aggregate Hydrocarbons

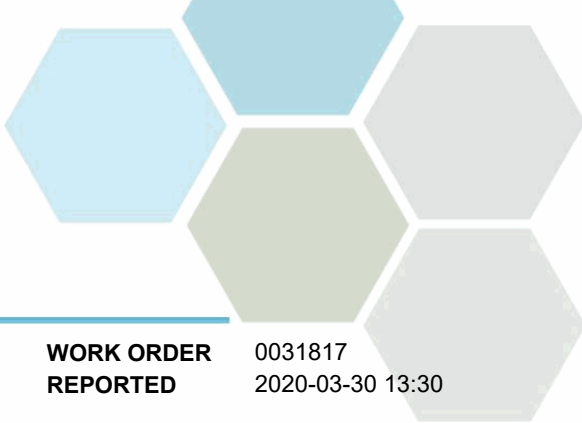
EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	88	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	152	0.500	mg/L	N/A	
Nitrate (as N)	0.192	0.0100	mg/L	N/A	

Dissolved Metals

Lithium, dissolved	0.00013	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0095	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0337	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	49.4	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00085	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	6.90	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00055	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00053	0.00010	mg/L	2020-03-26	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.54	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	5.0	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	5.87	0.10	mg/L	2020-03-26	
Strontium, dissolved	0.137	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	19.0	3.0	mg/L	2020-03-26	



TEST RESULTS

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Analyte	Result	RL	Units	Analyzed	Qualifier
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SW1 (0031817-07) | Matrix: Water | Sampled: 2020-03-20 13:50, Continued

Dissolved Metals, Continued

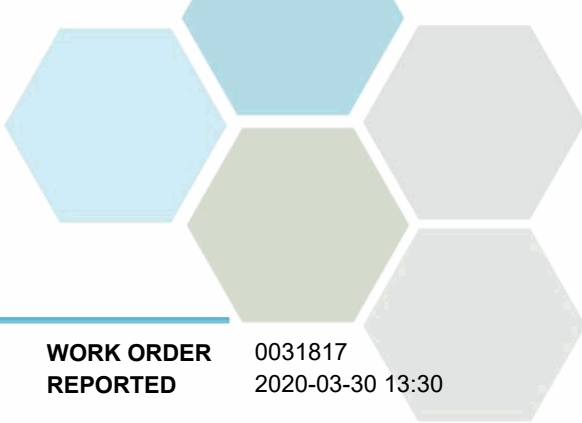
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.000662	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	110	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	110	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	290	2.0	µS/cm	2020-03-24	
pH	7.84	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	205	15	mg/L	2020-03-26	
Turbidity	1.12	0.10	NTU	2020-03-24	HT1

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
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WORK ORDER REPORTED 0031817
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Analyte	Result	RL	Units	Analyzed	Qualifier
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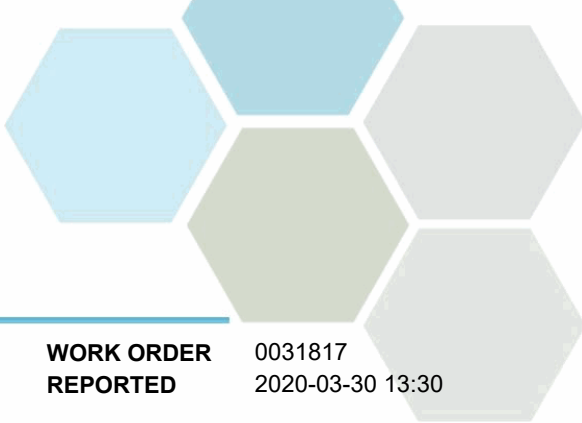
SW1 (0031817-07) | Matrix: Water | Sampled: 2020-03-20 13:50, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	78	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	86	50-140	%	2020-03-27	
Surrogate: Perylene-d12	86	50-140	%	2020-03-27	

Total Metals

Aluminum, total	0.0095	0.0050	mg/L	2020-03-26	
Antimony, total	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, total	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, total	0.0085	0.0050	mg/L	2020-03-26	
Beryllium, total	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, total	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, total	0.0338	0.0050	mg/L	2020-03-26	
Cadmium, total	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, total	53.2	0.20	mg/L	2020-03-26	
Chromium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, total	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, total	0.00092	0.00040	mg/L	2020-03-26	
Iron, total	< 0.010	0.010	mg/L	2020-03-26	
Lead, total	< 0.00020	0.00020	mg/L	2020-03-26	
Lithium, total	0.00015	0.00010	mg/L	2020-03-26	
Magnesium, total	7.34	0.010	mg/L	2020-03-26	
Manganese, total	0.00182	0.00020	mg/L	2020-03-26	
Molybdenum, total	0.00059	0.00010	mg/L	2020-03-26	
Nickel, total	0.00048	0.00040	mg/L	2020-03-26	
Phosphorus, total	< 0.050	0.050	mg/L	2020-03-26	
Potassium, total	0.58	0.10	mg/L	2020-03-26	
Selenium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, total	5.3	1.0	mg/L	2020-03-26	
Silver, total	0.000060	0.000050	mg/L	2020-03-26	
Sodium, total	6.24	0.10	mg/L	2020-03-26	
Strontium, total	0.146	0.0010	mg/L	2020-03-26	
Sulfur, total	23.3	3.0	mg/L	2020-03-26	
Tellurium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, total	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, total	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, total	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, total	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, total	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, total	0.000721	0.000020	mg/L	2020-03-26	
Vanadium, total	0.0013	0.0010	mg/L	2020-03-26	
Zinc, total	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, total	< 0.00010	0.00010	mg/L	2020-03-26	



TEST RESULTS

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WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SW1-X (0031817-08) | Matrix: Water | Sampled: 2020-03-20 13:55

Anions

Chloride	8.13	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.241	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	60.9	1.0	mg/L	2020-03-26	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	87	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	153	0.500	mg/L	N/A	
Nitrate (as N)	0.241	0.0100	mg/L	N/A	

Dissolved Metals

Lithium, dissolved	0.00013	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0079	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0234	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	49.7	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00081	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	7.08	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00053	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00056	0.00010	mg/L	2020-03-26	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.55	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	5.2	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	5.99	0.10	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
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WORK ORDER REPORTED 0031817
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Analyte	Result	RL	Units	Analyzed	Qualifier
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SW1-X (0031817-08) | Matrix: Water | Sampled: 2020-03-20 13:55, Continued

Dissolved Metals, Continued

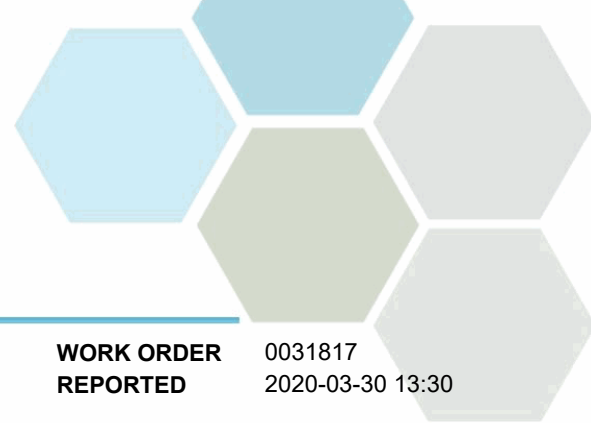
Strontium, dissolved	0.139	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	20.6	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.000661	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	110	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	110	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	322	2.0	µS/cm	2020-03-24	
pH	7.86	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	205	15	mg/L	2020-03-26	
Turbidity	0.22	0.10	NTU	2020-03-24	HT1

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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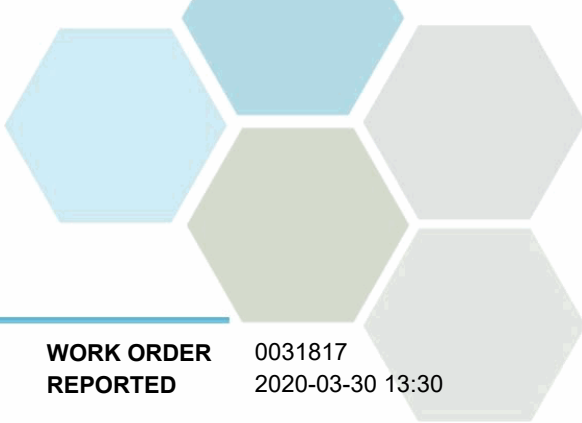
SW1-X (0031817-08) | Matrix: Water | Sampled: 2020-03-20 13:55, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	87	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	87	50-140	%	2020-03-27	
Surrogate: Perylene-d12	88	50-140	%	2020-03-27	

Total Metals

Aluminum, total	0.0063	0.0050	mg/L	2020-03-26	
Antimony, total	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, total	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, total	0.0083	0.0050	mg/L	2020-03-26	
Beryllium, total	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, total	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, total	0.0270	0.0050	mg/L	2020-03-26	
Cadmium, total	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, total	50.2	0.20	mg/L	2020-03-26	
Chromium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, total	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, total	0.00085	0.00040	mg/L	2020-03-26	
Iron, total	< 0.010	0.010	mg/L	2020-03-26	
Lead, total	< 0.00020	0.00020	mg/L	2020-03-26	
Lithium, total	0.00015	0.00010	mg/L	2020-03-26	
Magnesium, total	7.06	0.010	mg/L	2020-03-26	
Manganese, total	0.00082	0.00020	mg/L	2020-03-26	
Molybdenum, total	0.00052	0.00010	mg/L	2020-03-26	
Nickel, total	< 0.00040	0.00040	mg/L	2020-03-26	
Phosphorus, total	< 0.050	0.050	mg/L	2020-03-26	
Potassium, total	0.55	0.10	mg/L	2020-03-26	
Selenium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, total	4.9	1.0	mg/L	2020-03-26	
Silver, total	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, total	6.00	0.10	mg/L	2020-03-26	
Strontium, total	0.137	0.0010	mg/L	2020-03-26	
Sulfur, total	21.4	3.0	mg/L	2020-03-26	
Tellurium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, total	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, total	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, total	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, total	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, total	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, total	0.000661	0.000020	mg/L	2020-03-26	
Vanadium, total	0.0015	0.0010	mg/L	2020-03-26	



TEST RESULTS

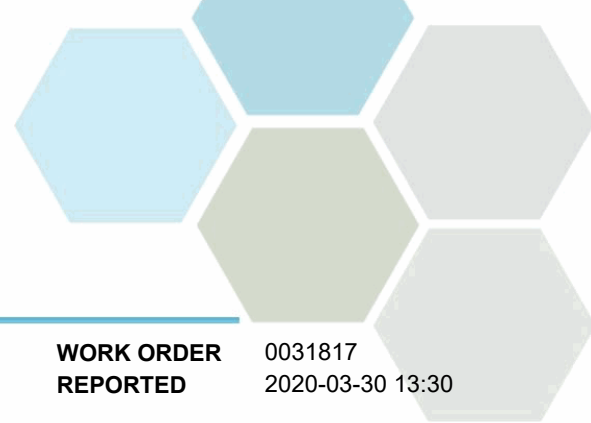
REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
SW1-X (0031817-08) Matrix: Water Sampled: 2020-03-20 13:55, Continued					
<i>Total Metals, Continued</i>					
Zinc, total	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, total	< 0.00010	0.00010	mg/L	2020-03-26	

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

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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	Edmonton
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
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
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

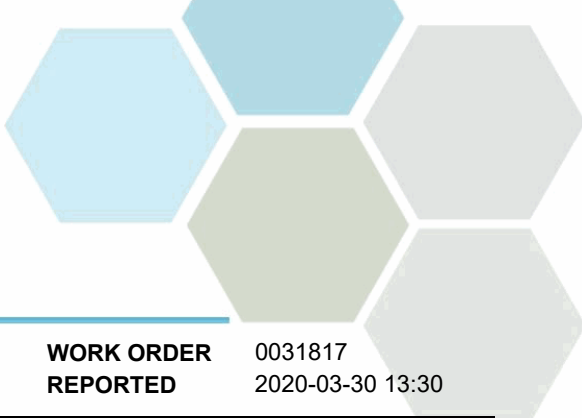
Glossary of Terms:

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 PROJECT Allterra Construction
P17-932

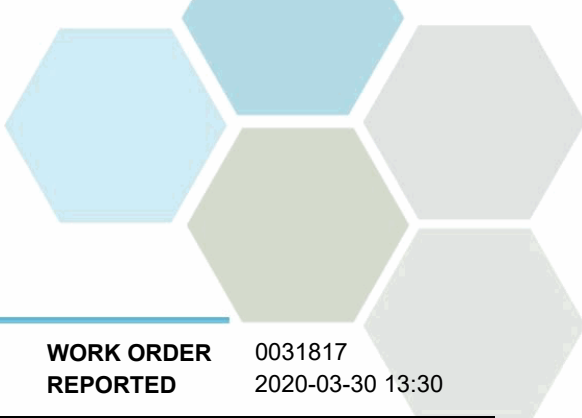
WORK ORDER REPORTED 0031817
2020-03-30 13:30

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 B0C1671									
Blank (B0C1671-BLK1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Nitrate+Nitrite (as N)	< 0.0050	0.0050 mg/L							
Blank (B0C1671-BLK2)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Nitrate+Nitrite (as N)	< 0.0050	0.0050 mg/L							
LCS (B0C1671-BS1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Nitrate+Nitrite (as N)	0.513	0.0050 mg/L	0.500		103	91-108			
LCS (B0C1671-BS2)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Nitrate+Nitrite (as N)	0.508	0.0050 mg/L	0.500		102	91-108			
Anions, Batch B0C1920									
Blank (B0C1920-BLK1)			Prepared: 2020-03-22, Analyzed: 2020-03-22						
Nitrite (as N)	< 0.0050	0.0050 mg/L							
LCS (B0C1920-BS1)			Prepared: 2020-03-22, Analyzed: 2020-03-22						
Nitrite (as N)	0.0479	0.0050 mg/L	0.0500		96	90-110			
Duplicate (B0C1920-DUP1)			Source: 0031817-01		Prepared: 2020-03-22, Analyzed: 2020-03-22				
Nitrite (as N)	0.0070	0.0050 mg/L		0.0070				10	
Anions, Batch B0C2262									
Blank (B0C2262-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Chloride	< 0.50	0.50 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Sulfate	< 1.0	1.0 mg/L							
Blank (B0C2262-BLK2)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Chloride	< 0.50	0.50 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Sulfate	< 1.0	1.0 mg/L							

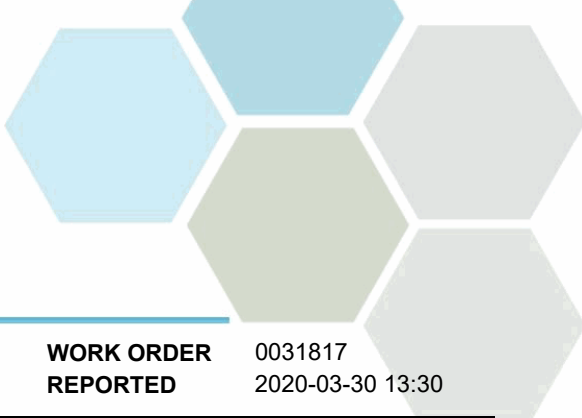


APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B0C2262, Continued									
LCS (B0C2262-BS1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Chloride	10.1	0.50 mg/L	10.0		101	90-110			
Fluoride	1.01	0.10 mg/L	1.00		101	85-115			
Sulfate	50.6	1.0 mg/L	50.0		101	90-110			
LCS (B0C2262-BS2)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Chloride	10.9	0.50 mg/L	10.0		109	90-110			
Fluoride	1.05	0.10 mg/L	1.00		105	85-115			
Sulfate	54.6	1.0 mg/L	50.0		109	90-110			
BCMOE Aggregate Hydrocarbons, Batch B0C2113									
Blank (B0C2113-BLK1)			Prepared: 2020-03-25, Analyzed: 2020-03-25						
EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							
Surrogate: 2-Methylnonane (EPH/F2-4)	299	µg/L	444		67	60-126			
LCS (B0C2113-BS2)			Prepared: 2020-03-25, Analyzed: 2020-03-26						
EPHw10-19	13700	250 µg/L	15500		89	70-117			
EPHw19-32	20000	250 µg/L	22400		89	70-113			
Surrogate: 2-Methylnonane (EPH/F2-4)	309	µg/L	444		70	60-126			
LCS Dup (B0C2113-BSD2)			Prepared: 2020-03-25, Analyzed: 2020-03-26						
EPHw10-19	11400	250 µg/L	15500		73	70-117	19	20	
EPHw19-32	16100	250 µg/L	22400		72	70-113	21	20	RPD
Surrogate: 2-Methylnonane (EPH/F2-4)	271	µg/L	444		61	60-126			
BCMOE Aggregate Hydrocarbons, Batch B0C2237									
Blank (B0C2237-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							
Surrogate: 2-Methylnonane (EPH/F2-4)	363	µg/L	444		82	60-126			
LCS (B0C2237-BS2)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
EPHw10-19	14800	250 µg/L	15500		96	70-117			
EPHw19-32	21100	250 µg/L	22400		94	70-113			
Surrogate: 2-Methylnonane (EPH/F2-4)	387	µg/L	444		87	60-126			
LCS Dup (B0C2237-BSD2)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
EPHw10-19	12800	250 µg/L	15500		83	70-117	15	20	
EPHw19-32	18500	250 µg/L	22400		82	70-113	13	20	
Surrogate: 2-Methylnonane (EPH/F2-4)	405	µg/L	444		91	60-126			
Dissolved Metals, Batch B0C2244									
Blank (B0C2244-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
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							



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 B0C2244, Continued

Blank (B0C2244-BLK1), Continued

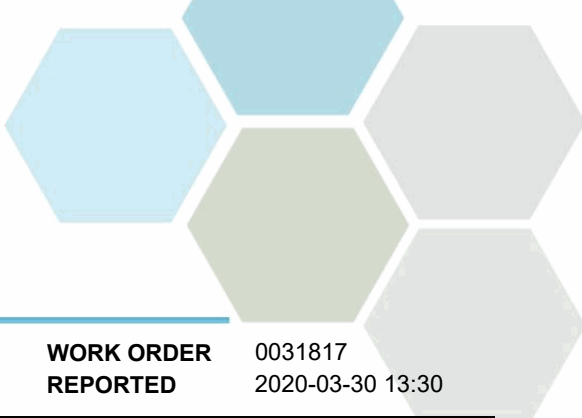
Prepared: 2020-03-26, Analyzed: 2020-03-26

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							
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 (B0C2244-BS1)

Prepared: 2020-03-26, Analyzed: 2020-03-26

Lithium, dissolved	0.0219	0.00010 mg/L	0.0200		110	80-120			
Aluminum, dissolved	0.0204	0.0050 mg/L	0.0199		103	80-120			
Antimony, dissolved	0.0199	0.00020 mg/L	0.0200		99	80-120			
Arsenic, dissolved	0.0208	0.00050 mg/L	0.0200		104	80-120			
Barium, dissolved	0.0209	0.0050 mg/L	0.0198		106	80-120			
Beryllium, dissolved	0.0217	0.00010 mg/L	0.0198		110	80-120			
Bismuth, dissolved	0.0217	0.00010 mg/L	0.0200		109	80-120			
Boron, dissolved	0.0177	0.0050 mg/L	0.0200		88	80-120			
Cadmium, dissolved	0.0211	0.000010 mg/L	0.0199		106	80-120			
Calcium, dissolved	2.25	0.20 mg/L	2.02		111	80-120			
Chromium, dissolved	0.0210	0.00050 mg/L	0.0198		106	80-120			
Cobalt, dissolved	0.0211	0.00010 mg/L	0.0199		106	80-120			
Copper, dissolved	0.0218	0.00040 mg/L	0.0200		109	80-120			
Iron, dissolved	2.14	0.010 mg/L	2.02		106	80-120			
Lead, dissolved	0.0212	0.00020 mg/L	0.0199		107	80-120			
Magnesium, dissolved	2.02	0.010 mg/L	2.02		100	80-120			
Manganese, dissolved	0.0203	0.00020 mg/L	0.0199		102	80-120			
Molybdenum, dissolved	0.0203	0.00010 mg/L	0.0200		101	80-120			
Nickel, dissolved	0.0214	0.00040 mg/L	0.0200		107	80-120			
Phosphorus, dissolved	2.09	0.050 mg/L	2.00		104	80-120			
Potassium, dissolved	1.94	0.10 mg/L	2.02		96	80-120			
Selenium, dissolved	0.0220	0.00050 mg/L	0.0200		110	80-120			
Silicon, dissolved	2.1	1.0 mg/L	2.00		107	80-120			
Silver, dissolved	0.0203	0.000050 mg/L	0.0200		101	80-120			
Sodium, dissolved	2.10	0.10 mg/L	2.02		104	80-120			



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 B0C2244, Continued									
LCS (B0C2244-BS1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Strontium, dissolved	0.0203	0.0010 mg/L	0.0200		101	80-120			
Sulfur, dissolved	4.4	3.0 mg/L	5.00		88	80-120			
Tellurium, dissolved	0.0197	0.00050 mg/L	0.0200		98	80-120			
Thallium, dissolved	0.0216	0.000020 mg/L	0.0199		109	80-120			
Thorium, dissolved	0.0209	0.00010 mg/L	0.0200		105	80-120			
Tin, dissolved	0.0208	0.00020 mg/L	0.0200		104	80-120			
Titanium, dissolved	0.0208	0.0050 mg/L	0.0200		104	80-120			
Tungsten, dissolved	0.0213	0.0010 mg/L	0.0200		107	80-120			
Uranium, dissolved	0.0215	0.000020 mg/L	0.0200		108	80-120			
Vanadium, dissolved	0.0207	0.0010 mg/L	0.0200		104	80-120			
Zinc, dissolved	0.0210	0.0040 mg/L	0.0200		105	80-120			
Zirconium, dissolved	0.0198	0.00010 mg/L	0.0200		99	80-120			
Duplicate (B0C2244-DUP1)					Source: 0031817-01 Prepared: 2020-03-26, Analyzed: 2020-03-26				
Lithium, dissolved	0.00573	0.00010 mg/L		0.00577			< 1	14	
Aluminum, dissolved	0.0107	0.0050 mg/L		0.0098				11	
Antimony, dissolved	0.00039	0.00020 mg/L		0.00031				20	
Arsenic, dissolved	0.00212	0.00050 mg/L		0.00207				8	
Barium, dissolved	0.0095	0.0050 mg/L		0.0096				7	
Beryllium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				14	
Bismuth, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Boron, dissolved	0.101	0.0050 mg/L		0.102			< 1	13	
Cadmium, dissolved	< 0.000010	0.000010 mg/L		< 0.000010				20	
Calcium, dissolved	26.1	0.20 mg/L		26.0			< 1	8	
Chromium, dissolved	< 0.00050	0.00050 mg/L		< 0.00050				14	
Cobalt, dissolved	0.00014	0.00010 mg/L		0.00014				10	
Copper, dissolved	0.00105	0.00040 mg/L		0.00097				20	
Iron, dissolved	< 0.010	0.010 mg/L		< 0.010				14	
Lead, dissolved	< 0.00020	0.00020 mg/L		< 0.00020				20	
Magnesium, dissolved	3.80	0.010 mg/L		3.83			1	6	
Manganese, dissolved	0.0625	0.00020 mg/L		0.0648			4	9	
Molybdenum, dissolved	0.0123	0.00010 mg/L		0.0122			1	19	
Nickel, dissolved	0.00098	0.00040 mg/L		0.00097				20	
Phosphorus, dissolved	< 0.050	0.050 mg/L		< 0.050				14	
Potassium, dissolved	1.23	0.10 mg/L		1.26			2	8	
Selenium, dissolved	< 0.00050	0.00050 mg/L		< 0.00050				20	
Silicon, dissolved	5.2	1.0 mg/L		5.4			4	12	
Silver, dissolved	< 0.000050	0.000050 mg/L		< 0.000050				20	
Sodium, dissolved	49.7	0.10 mg/L		50.7			2	6	
Strontium, dissolved	0.122	0.0010 mg/L		0.124			2	6	
Sulfur, dissolved	14.9	3.0 mg/L		15.7			6	20	
Tellurium, dissolved	< 0.00050	0.00050 mg/L		< 0.00050				20	
Thallium, dissolved	< 0.000020	0.000020 mg/L		< 0.000020				13	
Thorium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Tin, dissolved	0.00023	0.00020 mg/L		< 0.00020				20	
Titanium, dissolved	< 0.0050	0.0050 mg/L		< 0.0050				20	
Tungsten, dissolved	0.104	0.0010 mg/L		0.106			2	20	
Uranium, dissolved	0.00287	0.000020 mg/L		0.00294			2	14	
Vanadium, dissolved	< 0.0010	0.0010 mg/L		< 0.0010				20	
Zinc, dissolved	< 0.0040	0.0040 mg/L		< 0.0040				11	
Zirconium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Reference (B0C2244-SRM1)					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Lithium, dissolved	0.112	0.00010 mg/L	0.100		112	77-127			
Aluminum, dissolved	0.222	0.0050 mg/L	0.235		95	79-114			
Antimony, dissolved	0.0464	0.00020 mg/L	0.0431		108	89-123			



APPENDIX 2: QUALITY CONTROL RESULTS

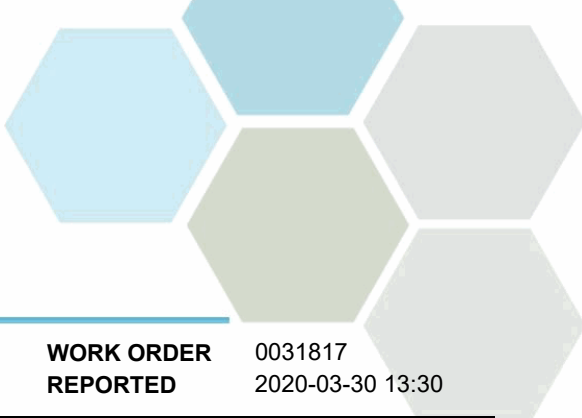
REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C2244, Continued									
Reference (B0C2244-SRM1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Arsenic, dissolved	0.465	0.00050 mg/L	0.423		110	87-113			
Barium, dissolved	3.24	0.0050 mg/L	3.30		98	85-114			
Beryllium, dissolved	0.229	0.00010 mg/L	0.209		109	79-122			
Boron, dissolved	1.49	0.0050 mg/L	1.65		90	79-117			
Cadmium, dissolved	0.234	0.000010 mg/L	0.221		106	89-112			
Calcium, dissolved	7.85	0.20 mg/L	7.72		102	85-120			
Chromium, dissolved	0.473	0.00050 mg/L	0.434		109	87-113			
Cobalt, dissolved	0.134	0.00010 mg/L	0.124		108	90-117			
Copper, dissolved	0.903	0.00040 mg/L	0.815		111	90-115			
Iron, dissolved	1.40	0.010 mg/L	1.27		110	86-112			
Lead, dissolved	0.119	0.00020 mg/L	0.110		108	90-113			
Magnesium, dissolved	6.83	0.010 mg/L	6.59		104	84-116			
Manganese, dissolved	0.347	0.00020 mg/L	0.342		101	85-113			
Molybdenum, dissolved	0.429	0.00010 mg/L	0.404		106	87-112			
Nickel, dissolved	0.895	0.00040 mg/L	0.835		107	90-114			
Phosphorus, dissolved	0.532	0.050 mg/L	0.499		107	74-119			
Potassium, dissolved	2.89	0.10 mg/L	2.88		100	78-119			
Selenium, dissolved	0.0375	0.00050 mg/L	0.0324		116	89-123			
Sodium, dissolved	18.0	0.10 mg/L	18.0		100	81-117			
Strontium, dissolved	0.954	0.0010 mg/L	0.935		102	82-111			
Thallium, dissolved	0.0421	0.000020 mg/L	0.0385		109	90-113			
Uranium, dissolved	0.262	0.000020 mg/L	0.258		102	87-113			
Vanadium, dissolved	0.910	0.0010 mg/L	0.873		104	85-110			
Zinc, dissolved	0.913	0.0040 mg/L	0.848		108	88-114			

General Parameters, Batch B0C1973

Blank (B0C1973-BLK1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
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 (B0C1973-BLK2)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
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 (B0C1973-BS1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Alkalinity, Total (as CaCO3)	112	1.0 mg/L	100		112	80-120			
LCS (B0C1973-BS2)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Alkalinity, Total (as CaCO3)	108	1.0 mg/L	100		108	80-120			
LCS (B0C1973-BS3)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Conductivity (EC)	1410	2.0 µS/cm	1410		100	95-104			
LCS (B0C1973-BS4)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Conductivity (EC)	1410	2.0 µS/cm	1410		100	95-104			



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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General Parameters, Batch B0C1973, Continued

Reference (B0C1973-SRM1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
pH	6.95	0.10 pH units	7.01		99	98-102			
Reference (B0C1973-SRM2)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
pH	6.97	0.10 pH units	7.01		99	98-102			

General Parameters, Batch B0C2015

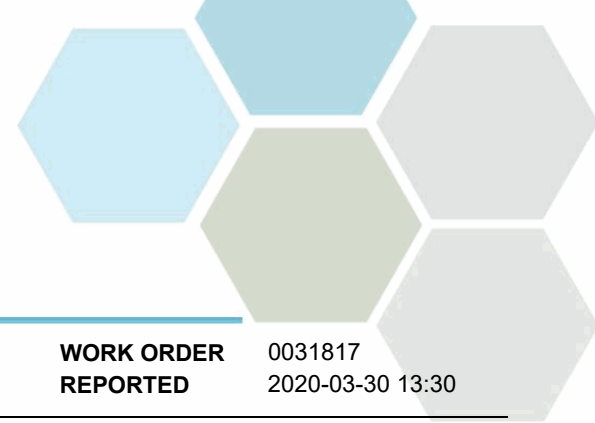
Blank (B0C2015-BLK1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Turbidity	< 0.10	0.10 NTU							
LCS (B0C2015-BS1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Turbidity	37.9	0.10 NTU	40.0		95	90-110			
Duplicate (B0C2015-DUP1)			Source: 0031817-01		Prepared: 2020-03-24, Analyzed: 2020-03-24				
Turbidity	261	0.10 NTU		257			2	15	

General Parameters, Batch B0C2184

Blank (B0C2184-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Solids, Total Dissolved	< 15	15 mg/L							
LCS (B0C2184-BS1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Solids, Total Dissolved	240	15 mg/L	240		100	85-115			
Duplicate (B0C2184-DUP1)			Source: 0031817-02		Prepared: 2020-03-26, Analyzed: 2020-03-26				
Solids, Total Dissolved	320	15 mg/L		306			4	15	

Polycyclic Aromatic Hydrocarbons (PAH), Batch B0C2113

Blank (B0C2113-BLK1)			Prepared: 2020-03-25, Analyzed: 2020-03-26						
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	2.62	µg/L	4.47		59	50-140			
Surrogate: Naphthalene-d8	2.74	µg/L	4.44		62	50-140			
Surrogate: Perylene-d12	3.79	µg/L	4.44		85	50-140			



APPENDIX 2: QUALITY CONTROL RESULTS

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WORK ORDER REPORTED 0031817
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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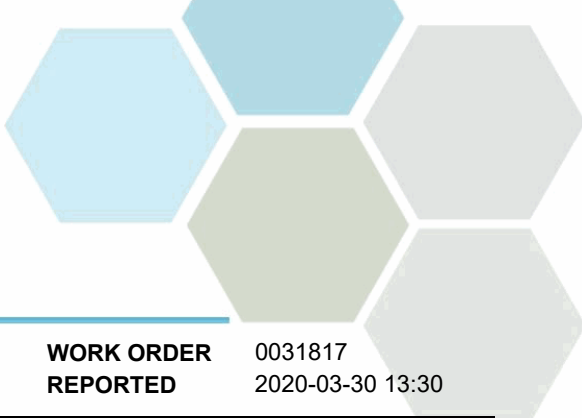
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0C2113, Continued

LCS (B0C2113-BS1)				Prepared: 2020-03-25, Analyzed: 2020-03-26					
Acenaphthene	4.34	0.050 µg/L	4.44		98	55-137			
Acenaphthylene	4.60	0.200 µg/L	4.44		104	53-140			
Acridine	3.73	0.050 µg/L	4.24		88	50-120			
Anthracene	4.48	0.010 µg/L	4.44		101	64-130			
Benz(a)anthracene	4.18	0.010 µg/L	4.44		94	57-140			
Benzo(a)pyrene	4.32	0.010 µg/L	4.44		97	63-133			
Benzo(b+j)fluoranthene	8.09	0.050 µg/L	8.89		91	60-129			
Benzo(g,h,i)perylene	4.73	0.050 µg/L	4.44		106	52-139			
Benzo(k)fluoranthene	3.75	0.050 µg/L	4.44		84	50-138			
2-Chloronaphthalene	5.12	0.100 µg/L	4.76		108	50-139			
Chrysene	4.22	0.050 µg/L	4.44		95	59-140			
Dibenz(a,h)anthracene	4.62	0.010 µg/L	4.44		104	53-136			
Fluoranthene	4.83	0.030 µg/L	4.44		109	67-135			
Fluorene	4.45	0.050 µg/L	4.44		100	57-134			
Indeno(1,2,3-cd)pyrene	4.68	0.050 µg/L	4.44		105	52-129			
1-Methylnaphthalene	3.99	0.100 µg/L	4.44		90	50-140			
2-Methylnaphthalene	4.10	0.100 µg/L	4.44		92	50-140			
Naphthalene	3.89	0.200 µg/L	4.44		87	50-140			
Phenanthrene	4.89	0.100 µg/L	4.44		110	61-134			
Pyrene	4.83	0.020 µg/L	4.44		109	66-131			
Quinoline	5.73	0.050 µg/L	4.31		133	50-140			
Surrogate: Acridine-d9	3.89	µg/L	4.47		87	50-140			
Surrogate: Naphthalene-d8	3.98	µg/L	4.44		90	50-140			
Surrogate: Perylene-d12	3.92	µg/L	4.44		88	50-140			

LCS Dup (B0C2113-BS1)				Prepared: 2020-03-25, Analyzed: 2020-03-26					
Acenaphthene	4.15	0.050 µg/L	4.44		93	55-137	5	18	
Acenaphthylene	4.38	0.200 µg/L	4.44		99	53-140	5	20	
Acridine	2.83	0.050 µg/L	4.24		67	50-120	27	30	
Anthracene	4.28	0.010 µg/L	4.44		96	64-130	5	15	
Benz(a)anthracene	4.05	0.010 µg/L	4.44		91	57-140	3	25	
Benzo(a)pyrene	4.12	0.010 µg/L	4.44		93	63-133	5	18	
Benzo(b+j)fluoranthene	7.81	0.050 µg/L	8.89		88	60-129	4	17	
Benzo(g,h,i)perylene	4.46	0.050 µg/L	4.44		100	52-139	6	22	
Benzo(k)fluoranthene	3.56	0.050 µg/L	4.44		80	50-138	5	26	
2-Chloronaphthalene	4.82	0.100 µg/L	4.76		101	50-139	6	23	
Chrysene	4.07	0.050 µg/L	4.44		92	59-140	4	23	
Dibenz(a,h)anthracene	4.36	0.010 µg/L	4.44		98	53-136	6	21	
Fluoranthene	4.59	0.030 µg/L	4.44		103	67-135	5	18	
Fluorene	4.29	0.050 µg/L	4.44		96	57-134	4	18	
Indeno(1,2,3-cd)pyrene	4.41	0.050 µg/L	4.44		99	52-129	6	21	
1-Methylnaphthalene	3.80	0.100 µg/L	4.44		86	50-140	5	20	
2-Methylnaphthalene	3.90	0.100 µg/L	4.44		88	50-140	5	21	
Naphthalene	3.68	0.200 µg/L	4.44		83	50-140	5	22	
Phenanthrene	4.62	0.100 µg/L	4.44		104	61-134	6	17	
Pyrene	4.55	0.020 µg/L	4.44		102	66-131	6	19	
Quinoline	5.98	0.050 µg/L	4.31		139	50-140	4	14	
Surrogate: Acridine-d9	2.77	µg/L	4.47		62	50-140			
Surrogate: Naphthalene-d8	3.70	µg/L	4.44		83	50-140			
Surrogate: Perylene-d12	3.65	µg/L	4.44		82	50-140			

Polycyclic Aromatic Hydrocarbons (PAH), Batch B0C2237

Blank (B0C2237-BLK1)				Prepared: 2020-03-26, Analyzed: 2020-03-27					
Acenaphthene	< 0.050	0.050 µg/L							

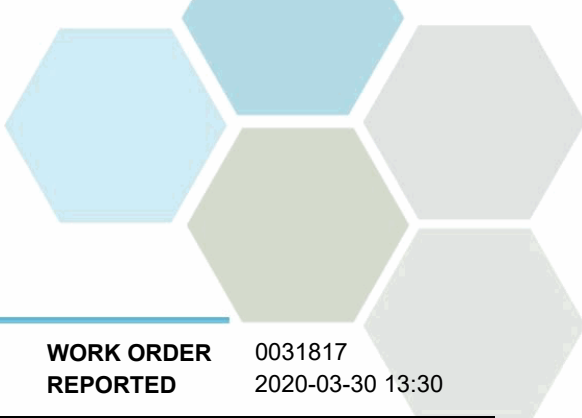


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0C2237, Continued									
Blank (B0C2237-BLK1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-27				
Acenaphthylene	< 0.200	0.200 µg/L							
Acridine	< 0.050	0.050 µg/L							
Anthracene	< 0.010	0.010 µg/L							
Benzo(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	0.020	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	2.38	µg/L	4.31		55	50-140			
Surrogate: Naphthalene-d8	3.17	µg/L	4.47		71	50-140			
Surrogate: Perylene-d12	3.50	µg/L	4.47		78	50-140			
LCS (B0C2237-BS1)					Prepared: 2020-03-26, Analyzed: 2020-03-27				
Acenaphthene	4.34	0.050 µg/L	4.44		98	55-137			
Acenaphthylene	4.58	0.200 µg/L	4.44		103	53-140			
Acridine	3.60	0.050 µg/L	4.24		85	50-120			
Anthracene	4.53	0.010 µg/L	4.44		102	64-130			
Benzo(a)anthracene	4.36	0.010 µg/L	4.44		98	57-140			
Benzo(a)pyrene	4.50	0.010 µg/L	4.44		101	63-133			
Benzo(b+j)fluoranthene	8.76	0.050 µg/L	8.89		99	60-129			
Benzo(g,h,i)perylene	4.92	0.050 µg/L	4.44		111	52-139			
Benzo(k)fluoranthene	3.84	0.050 µg/L	4.44		86	50-138			
2-Chloronaphthalene	5.25	0.100 µg/L	4.76		110	50-139			
Chrysene	4.40	0.050 µg/L	4.44		99	59-140			
Dibenz(a,h)anthracene	4.70	0.010 µg/L	4.44		106	53-136			
Fluoranthene	4.91	0.030 µg/L	4.44		110	67-135			
Fluorene	4.40	0.050 µg/L	4.44		99	57-134			
Indeno(1,2,3-cd)pyrene	4.84	0.050 µg/L	4.44		109	52-129			
1-Methylnaphthalene	4.05	0.100 µg/L	4.44		91	50-140			
2-Methylnaphthalene	4.07	0.100 µg/L	4.44		91	50-140			
Naphthalene	3.87	0.200 µg/L	4.44		87	50-140			
Phenanthrene	4.88	0.100 µg/L	4.44		110	61-134			
Pyrene	4.94	0.020 µg/L	4.44		111	66-131			
Quinoline	5.70	0.050 µg/L	4.31		132	50-140			
Surrogate: Acridine-d9	3.54	µg/L	4.31		82	50-140			
Surrogate: Naphthalene-d8	3.91	µg/L	4.47		88	50-140			
Surrogate: Perylene-d12	3.97	µg/L	4.47		89	50-140			
LCS Dup (B0C2237-BSD1)					Prepared: 2020-03-26, Analyzed: 2020-03-27				
Acenaphthene	4.44	0.050 µg/L	4.44		100	55-137	2	18	
Acenaphthylene	4.69	0.200 µg/L	4.44		105	53-140	2	20	
Acridine	3.64	0.050 µg/L	4.24		86	50-120	1	30	
Anthracene	4.50	0.010 µg/L	4.44		101	64-130	< 1	15	
Benzo(a)anthracene	3.95	0.010 µg/L	4.44		89	57-140	10	25	



APPENDIX 2: QUALITY CONTROL RESULTS

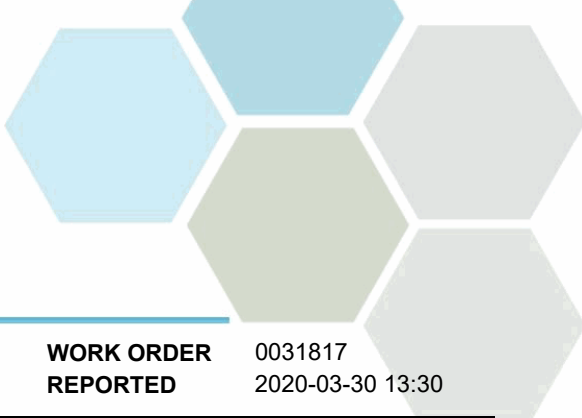
REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0C2237, Continued									
LCS Dup (B0C2237-BSD1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-27				
Benzo(a)pyrene	4.09	0.010 µg/L	4.44		92	63-133	10	18	
Benzo(b+j)fluoranthene	7.91	0.050 µg/L	8.89		89	60-129	10	17	
Benzo(g,h,i)perylene	4.55	0.050 µg/L	4.44		102	52-139	8	22	
Benzo(k)fluoranthene	3.48	0.050 µg/L	4.44		78	50-138	10	26	
2-Chloronaphthalene	5.31	0.100 µg/L	4.76		112	50-139	1	23	
Chrysene	4.00	0.050 µg/L	4.44		90	59-140	9	23	
Dibenz(a,h)anthracene	4.36	0.010 µg/L	4.44		98	53-136	7	21	
Fluoranthene	4.66	0.030 µg/L	4.44		105	67-135	5	18	
Fluorene	4.51	0.050 µg/L	4.44		102	57-134	3	18	
Indeno(1,2,3-cd)pyrene	4.46	0.050 µg/L	4.44		100	52-129	8	21	
1-Methylnaphthalene	4.09	0.100 µg/L	4.44		92	50-140	< 1	20	
2-Methylnaphthalene	4.16	0.100 µg/L	4.44		94	50-140	2	21	
Naphthalene	3.96	0.200 µg/L	4.44		89	50-140	2	22	
Phenanthrene	4.87	0.100 µg/L	4.44		110	61-134	< 1	17	
Pyrene	4.62	0.020 µg/L	4.44		104	66-131	7	19	
Quinoline	5.92	0.050 µg/L	4.31		137	50-140	4	14	
Surrogate: Acridine-d9	3.70	µg/L	4.31		86	50-140			
Surrogate: Naphthalene-d8	4.03	µg/L	4.47		90	50-140			
Surrogate: Perylene-d12	3.65	µg/L	4.47		82	50-140			

Total Metals, Batch B0C2245

Blank (B0C2245-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
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							

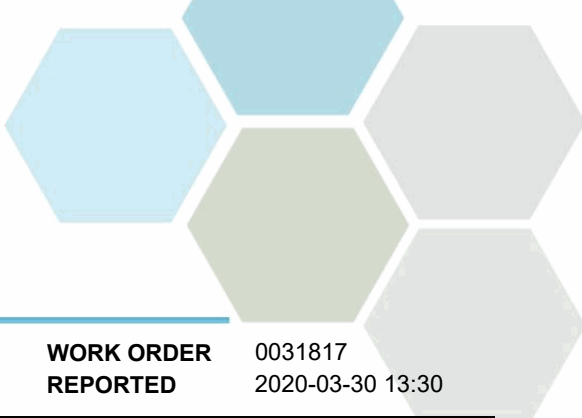


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B0C2245, Continued									
Blank (B0C2245-BLK1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-26				
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 (B0C2245-BS1)					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Aluminum, total	0.0204	0.0050 mg/L	0.0199		102	80-120			
Antimony, total	0.0204	0.00020 mg/L	0.0200		102	80-120			
Arsenic, total	0.0212	0.00050 mg/L	0.0200		106	80-120			
Barium, total	0.0205	0.0050 mg/L	0.0198		103	80-120			
Beryllium, total	0.0214	0.00010 mg/L	0.0198		108	80-120			
Bismuth, total	0.0220	0.00010 mg/L	0.0200		110	80-120			
Boron, total	0.0181	0.0050 mg/L	0.0200		91	80-120			
Cadmium, total	0.0211	0.000010 mg/L	0.0199		106	80-120			
Calcium, total	2.28	0.20 mg/L	2.02		113	80-120			
Chromium, total	0.0209	0.00050 mg/L	0.0198		105	80-120			
Cobalt, total	0.0213	0.00010 mg/L	0.0199		107	80-120			
Copper, total	0.0215	0.00040 mg/L	0.0200		107	80-120			
Iron, total	2.15	0.010 mg/L	2.02		106	80-120			
Lead, total	0.0221	0.00020 mg/L	0.0199		111	80-120			
Lithium, total	0.0220	0.00010 mg/L	0.0200		110	80-120			
Magnesium, total	2.03	0.010 mg/L	2.02		100	80-120			
Manganese, total	0.0203	0.00020 mg/L	0.0199		102	80-120			
Molybdenum, total	0.0203	0.00010 mg/L	0.0200		101	80-120			
Nickel, total	0.0214	0.00040 mg/L	0.0200		107	80-120			
Phosphorus, total	2.04	0.050 mg/L	2.00		102	80-120			
Potassium, total	1.94	0.10 mg/L	2.02		96	80-120			
Selenium, total	0.0220	0.00050 mg/L	0.0200		110	80-120			
Silicon, total	2.1	1.0 mg/L	2.00		107	80-120			
Silver, total	0.0208	0.000050 mg/L	0.0200		104	80-120			
Sodium, total	2.04	0.10 mg/L	2.02		101	80-120			
Strontium, total	0.0203	0.0010 mg/L	0.0200		102	80-120			
Sulfur, total	4.9	3.0 mg/L	5.00		98	80-120			
Tellurium, total	0.0201	0.00050 mg/L	0.0200		101	80-120			
Thallium, total	0.0218	0.000020 mg/L	0.0199		110	80-120			
Thorium, total	0.0214	0.00010 mg/L	0.0200		107	80-120			
Tin, total	0.0210	0.00020 mg/L	0.0200		105	80-120			
Titanium, total	0.0196	0.0050 mg/L	0.0200		98	80-120			
Tungsten, total	0.0209	0.0010 mg/L	0.0200		105	80-120			
Uranium, total	0.0216	0.000020 mg/L	0.0200		108	80-120			
Vanadium, total	0.0216	0.0010 mg/L	0.0200		108	80-120			
Zinc, total	0.0235	0.0040 mg/L	0.0200		118	80-120			
Zirconium, total	0.0201	0.00010 mg/L	0.0200		101	80-120			
Reference (B0C2245-SRM1)					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Aluminum, total	0.293	0.0050 mg/L	0.303		97	82-114			
Antimony, total	0.0529	0.00020 mg/L	0.0511		104	88-115			
Arsenic, total	0.127	0.00050 mg/L	0.118		108	88-111			
Barium, total	0.827	0.0050 mg/L	0.823		100	83-110			
Beryllium, total	0.0535	0.00010 mg/L	0.0496		108	80-119			
Boron, total	3.45	0.0050 mg/L	3.45		100	80-118			
Cadmium, total	0.0524	0.000010 mg/L	0.0495		106	90-110			
Calcium, total	11.0	0.20 mg/L	11.6		95	85-113			
Chromium, total	0.265	0.00050 mg/L	0.250		106	88-111			
Cobalt, total	0.0414	0.00010 mg/L	0.0377		110	90-114			



APPENDIX 2: QUALITY CONTROL RESULTS

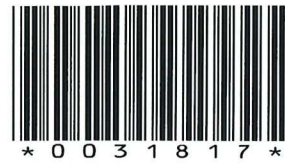
REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B0C2245, Continued									
Reference (B0C2245-SRM1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Copper, total	0.549	0.00040 mg/L	0.486		113	90-117			
Iron, total	0.549	0.010 mg/L	0.488		113	90-116			
Lead, total	0.213	0.00020 mg/L	0.204		104	90-110			
Lithium, total	0.437	0.00010 mg/L	0.403		108	79-118			
Magnesium, total	4.00	0.010 mg/L	3.79		106	88-116			
Manganese, total	0.111	0.00020 mg/L	0.109		102	88-108			
Molybdenum, total	0.204	0.00010 mg/L	0.198		103	88-110			
Nickel, total	0.268	0.00040 mg/L	0.249		108	90-112			
Phosphorus, total	0.239	0.050 mg/L	0.227		105	72-118			
Potassium, total	7.36	0.10 mg/L	7.21		102	87-116			
Selenium, total	0.135	0.00050 mg/L	0.121		111	90-122			
Sodium, total	7.51	0.10 mg/L	7.54		100	86-118			
Strontium, total	0.385	0.0010 mg/L	0.375		103	86-110			
Thallium, total	0.0877	0.000020 mg/L	0.0805		109	90-113			
Uranium, total	0.0316	0.000020 mg/L	0.0306		103	88-112			
Vanadium, total	0.398	0.0010 mg/L	0.386		103	87-110			
Zinc, total	2.66	0.0040 mg/L	2.49		107	90-113			

QC Qualifiers:

- BLK Analyte concentration in the Method Blank is above the Reporting Limit (RL).
- RPD Relative percent difference (RPD) of duplicate analysis are outside of control limits for unknown reason(s).



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

RELINQUISHED BY: KL DATE: Mar 20 2020 RECEIVED BY: AGB Novex DATE: 21/03/20
 TIME: 16:00 TIME: 10:30

TURNAROUND TIME REQUESTED:
 Routine: (5-7 Days)
 Rush: 1 Day* 2 Day* 3 Day*
 Other* _____

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

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

SAMPLED BY: <u>rg</u>	MATRIX:				SAMPLING:		COMMENTS:			ANALYSES REQUESTED:																		HOLD	POSSIBLE SAMPLE HAZARD CODE(S)																						
	DRINKING WATER	OTHER WATER	SOIL	OTHER	CONTAINER QTY	DATE	TIME	CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)	BTEX	VPH	PHC F1	VOC	VPH	PHC F2-F4	EPH	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
CLIENT SAMPLE ID:						YYYY-MM-DD	HH:MM																																												
MW19-01		✓				2020-03-20	12:30			✓								✓												✓	✓		✓	✓											✓	✓	✓				
MW19-02		✓				2020-03-20	13:30			✓								✓												✓	✓		✓	✓											✓	✓	✓				
SB1		✓				2020-03-20	12:00			✓								✓												✓	✓		✓	✓											✓	✓	✓				
SB2		✓				2020-03-20	11:15			✓								✓												✓	✓		✓	✓											✓	✓	✓				
SB3		✓				2020-03-20	10:15			✓								✓												✓	✓		✓	✓											✓	✓	✓				
LE-1		✓				2020-03-20	11:30			✓								✓																																	
SW1		✓				2020-03-20	13:50			✓								✓									✓	✓		✓	✓		✓	✓											✓	✓	✓				
SW1-X		✓				2020-03-20	13:55			✓								✓									✓	✓		✓	✓		✓	✓											✓	✓	✓				

SHIPPING INSTRUCTIONS: Return Cooler(s) Supplies Needed:
SAMPLE RETENTION: 30 Days (default) 60 Days 90 Days
 Other (surcharges will apply): _____
*** OTHER INSTRUCTIONS:** PLEASE LAB FILTER SAMPLE MW19-01 FOR DISSOLVED METALS **
 If you would like to talk to a real live Scientist about your project requirements, please check here:
SAMPLE RECEIPT CONDITION:
 COOLER 1 (°C): 8-9 ICE: Y N
 COOLER 2 (°C): _____ ICE: Y N
 COOLER 3 (°C): _____ ICE: Y N
 CUSTODY SEALS INTACT: NA Y N

CERTIFICATE OF ANALYSIS

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

ATTENTION Rahim Gaidhar

PO NUMBER Allterra 17-932

PROJECT P17-932

PROJECT INFO

WORK ORDER 0031093

RECEIVED / TEMP 2020-03-12 12:00 / 4°C

REPORTED 2020-03-19 15:09

COC NUMBER B58832

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.

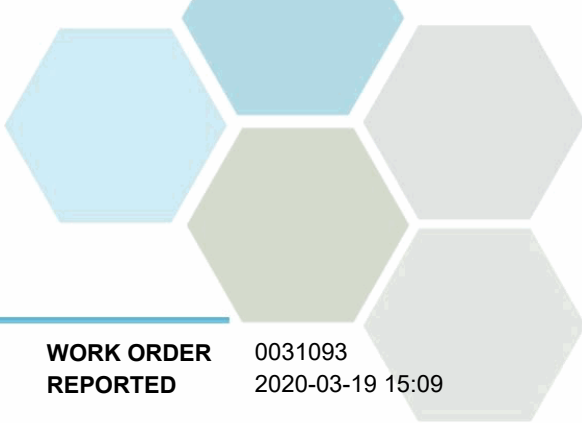
If you have any questions or concerns, please contact me at nyjpp@caro.ca

Authorized By:

Nicole Yipp
Team Lead, Client Service

1-888-311-8846 | www.caro.ca

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

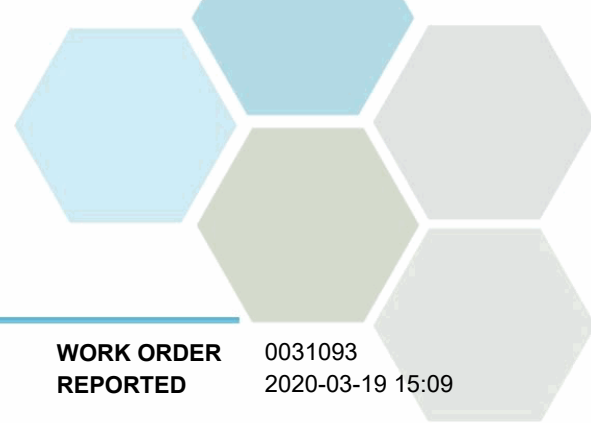


TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL	Units	Analyzed	Qualifier
20200311_LE-1 (0031093-01) Matrix: Water Sampled: 2020-03-11 11:30					
Anions					
Chloride	3500	0.10	mg/L	2020-03-13	
Fluoride	< 1.00	0.10	mg/L	2020-03-13	RA1
Nitrate (as N)	1.72	0.010	mg/L	2020-03-13	
Nitrite (as N)	0.465	0.010	mg/L	2020-03-13	
Sulfate	1430	1.0	mg/L	2020-03-13	
Calculated Parameters					
Hardness, Total (as CaCO3)	3080	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.00029	0.00010	mg/L	2020-03-19	
Aluminum, dissolved	0.0119	0.0050	mg/L	2020-03-19	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-19	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-19	
Barium, dissolved	0.0155	0.0050	mg/L	2020-03-19	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-19	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-19	
Boron, dissolved	0.190	0.0050	mg/L	2020-03-19	
Cadmium, dissolved	0.000684	0.000010	mg/L	2020-03-19	
Calcium, dissolved	833	0.20	mg/L	2020-03-19	
Chromium, dissolved	0.00878	0.00050	mg/L	2020-03-19	
Cobalt, dissolved	0.00179	0.00010	mg/L	2020-03-19	
Copper, dissolved	0.00181	0.00040	mg/L	2020-03-19	
Iron, dissolved	0.026	0.010	mg/L	2020-03-19	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-19	
Magnesium, dissolved	241	0.010	mg/L	2020-03-19	
Manganese, dissolved	19.1	0.00020	mg/L	2020-03-19	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-17	
Molybdenum, dissolved	0.00044	0.00010	mg/L	2020-03-19	
Nickel, dissolved	0.0118	0.00040	mg/L	2020-03-19	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-19	
Potassium, dissolved	24.7	0.10	mg/L	2020-03-19	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-19	
Silicon, dissolved	6.5	1.0	mg/L	2020-03-19	
Silver, dissolved	0.000107	0.000050	mg/L	2020-03-19	
Sodium, dissolved	1880	0.10	mg/L	2020-03-19	
Strontium, dissolved	4.14	0.0010	mg/L	2020-03-19	
Sulfur, dissolved	588	3.0	mg/L	2020-03-19	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-19	
Thallium, dissolved	0.000023	0.000020	mg/L	2020-03-19	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-19	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-19	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-19	

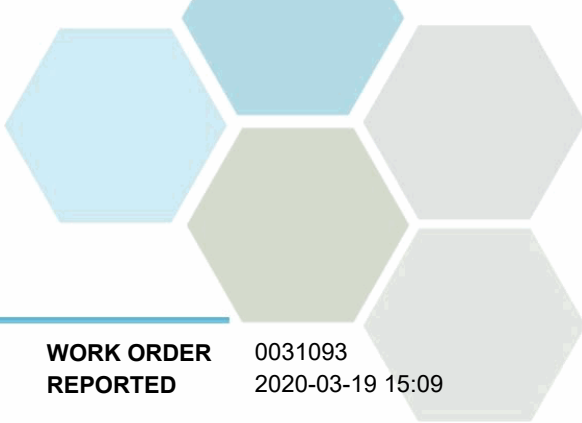


TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL	Units	Analyzed	Qualifier
20200311_LE-1 (0031093-01) Matrix: Water Sampled: 2020-03-11 11:30, Continued					
<i>Dissolved Metals, Continued</i>					
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-19	
Uranium, dissolved	0.000116	0.000020	mg/L	2020-03-19	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-19	
Zinc, dissolved	0.0415	0.0040	mg/L	2020-03-19	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-19	
<i>General Parameters</i>					
Alkalinity, Total (as CaCO3)	34.7	1.0	mg/L	2020-03-14	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-14	
Alkalinity, Bicarbonate (as CaCO3)	34.7	1.0	mg/L	2020-03-14	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-14	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-14	
Solids, Total Dissolved	8400	15	mg/L	2020-03-18	
<i>Total Metals</i>					
Aluminum, total	0.0776	0.0050	mg/L	2020-03-19	
Antimony, total	< 0.00020	0.00020	mg/L	2020-03-19	
Arsenic, total	< 0.00050	0.00050	mg/L	2020-03-19	
Barium, total	0.0169	0.0050	mg/L	2020-03-19	
Beryllium, total	< 0.00010	0.00010	mg/L	2020-03-19	
Bismuth, total	< 0.00010	0.00010	mg/L	2020-03-19	
Boron, total	0.209	0.0050	mg/L	2020-03-19	
Cadmium, total	0.000705	0.000010	mg/L	2020-03-19	
Calcium, total	859	0.20	mg/L	2020-03-19	
Chromium, total	0.0108	0.00050	mg/L	2020-03-19	
Cobalt, total	0.00195	0.00010	mg/L	2020-03-19	
Copper, total	0.00198	0.00040	mg/L	2020-03-19	
Iron, total	0.029	0.010	mg/L	2020-03-19	
Lead, total	< 0.00020	0.00020	mg/L	2020-03-19	
Lithium, total	0.00042	0.00010	mg/L	2020-03-19	
Magnesium, total	261	0.010	mg/L	2020-03-19	
Manganese, total	19.5	0.00020	mg/L	2020-03-19	
Mercury, total	< 0.000010	0.000010	mg/L	2020-03-18	
Molybdenum, total	0.00027	0.00010	mg/L	2020-03-19	
Nickel, total	0.0128	0.00040	mg/L	2020-03-19	
Phosphorus, total	< 0.050	0.050	mg/L	2020-03-19	
Potassium, total	26.4	0.10	mg/L	2020-03-19	
Selenium, total	< 0.00050	0.00050	mg/L	2020-03-19	
Silicon, total	6.6	1.0	mg/L	2020-03-19	
Silver, total	0.000138	0.000050	mg/L	2020-03-19	
Sodium, total	2070	0.10	mg/L	2020-03-19	
Strontium, total	4.39	0.0010	mg/L	2020-03-19	
Sulfur, total	627	3.0	mg/L	2020-03-19	



TEST RESULTS

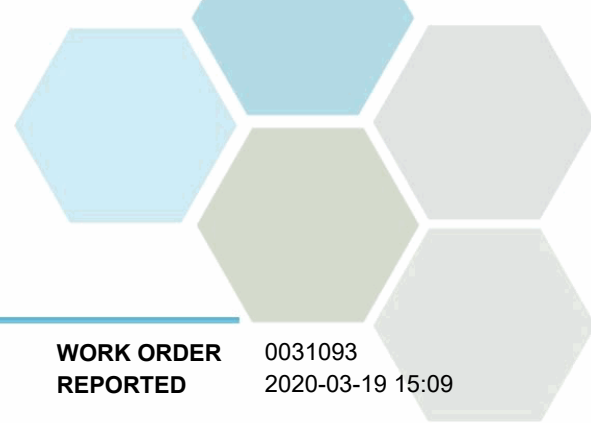
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Analyte	Result	RL	Units	Analyzed	Qualifier
20200311_LE-1 (0031093-01) Matrix: Water Sampled: 2020-03-11 11:30, Continued					
<i>Total Metals, Continued</i>					
Tellurium, total	< 0.00050	0.00050	mg/L	2020-03-19	
Thallium, total	0.000033	0.000020	mg/L	2020-03-19	
Thorium, total	< 0.00010	0.00010	mg/L	2020-03-19	
Tin, total	< 0.00020	0.00020	mg/L	2020-03-19	
Titanium, total	< 0.0050	0.0050	mg/L	2020-03-19	
Tungsten, total	< 0.0010	0.0010	mg/L	2020-03-19	
Uranium, total	0.000135	0.000020	mg/L	2020-03-19	
Vanadium, total	< 0.0010	0.0010	mg/L	2020-03-19	
Zinc, total	0.0425	0.0040	mg/L	2020-03-19	
Zirconium, total	< 0.00010	0.00010	mg/L	2020-03-19	

Sample Qualifiers:

RA1 The Reporting Limit has been raised due to matrix interference.



APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO Allterra Construction
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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
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
Mercury, dissolved in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Solids, Total Dissolved in Water	SM 2540 C* (2017)	Gravimetry (Dried at 103-105C)	Kelowna
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond

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

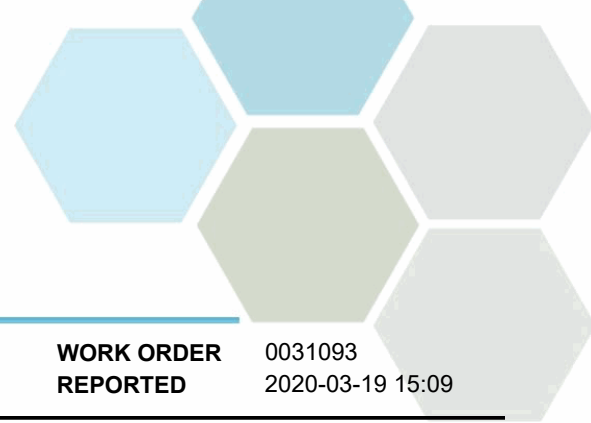
Glossary of Terms:

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
mg/L	Milligrams per litre
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

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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
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Anions, Batch B0C1119

Blank (B0C1119-BLK1)			Prepared: 2020-03-13, Analyzed: 2020-03-13						
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 (B0C1119-BLK2)			Prepared: 2020-03-13, Analyzed: 2020-03-13						
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							

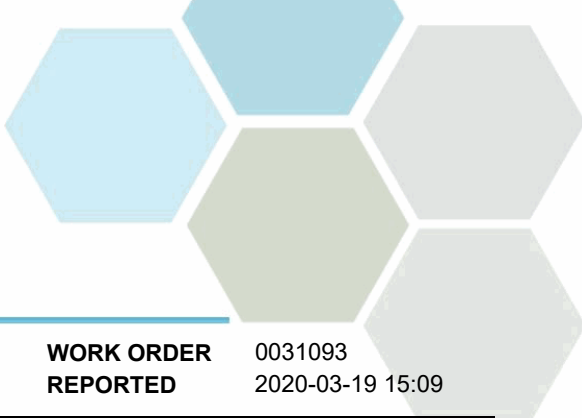
LCS (B0C1119-BS1)			Prepared: 2020-03-13, Analyzed: 2020-03-13						
Chloride	16.2	0.10 mg/L	16.0		101	90-110			
Fluoride	4.01	0.10 mg/L	4.00		100	88-108			
Nitrate (as N)	4.06	0.010 mg/L	4.00		101	90-110			
Nitrite (as N)	2.10	0.010 mg/L	2.00		105	85-115			
Sulfate	16.0	1.0 mg/L	16.0		100	90-110			

LCS (B0C1119-BS2)			Prepared: 2020-03-13, Analyzed: 2020-03-13						
Chloride	16.0	0.10 mg/L	16.0		100	90-110			
Fluoride	3.92	0.10 mg/L	4.00		98	88-108			
Nitrate (as N)	4.05	0.010 mg/L	4.00		101	90-110			
Nitrite (as N)	1.92	0.010 mg/L	2.00		96	85-115			
Sulfate	16.0	1.0 mg/L	16.0		100	90-110			

Dissolved Metals, Batch B0C1444

Blank (B0C1444-BLK1)			Prepared: 2020-03-17, Analyzed: 2020-03-17						
Mercury, dissolved	< 0.000010	0.000010 mg/L							

Reference (B0C1444-SRM1)			Prepared: 2020-03-17, Analyzed: 2020-03-17						
Mercury, dissolved	0.00423	0.000010 mg/L	0.00489		87	80-120			



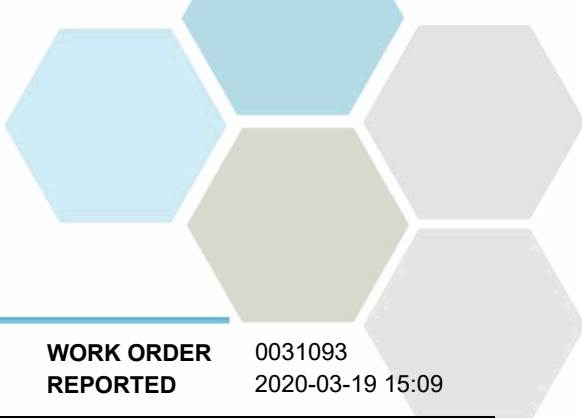
APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C1538									
Blank (B0C1538-BLK1)					Prepared: 2020-03-19, Analyzed: 2020-03-19				
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							
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 (B0C1538-BS1)					Prepared: 2020-03-19, Analyzed: 2020-03-19				
Lithium, dissolved	0.0213	0.00010 mg/L	0.0200		107	80-120			
Aluminum, dissolved	0.0229	0.0050 mg/L	0.0199		115	80-120			
Antimony, dissolved	0.0186	0.00020 mg/L	0.0200		93	80-120			
Arsenic, dissolved	0.0193	0.00050 mg/L	0.0200		97	80-120			
Barium, dissolved	0.0191	0.0050 mg/L	0.0198		96	80-120			
Beryllium, dissolved	0.0203	0.00010 mg/L	0.0198		103	80-120			
Bismuth, dissolved	0.0210	0.00010 mg/L	0.0200		105	80-120			
Boron, dissolved	0.0185	0.0050 mg/L	0.0200		92	80-120			
Cadmium, dissolved	0.0196	0.000010 mg/L	0.0199		99	80-120			
Calcium, dissolved	2.24	0.20 mg/L	2.02		111	80-120			
Chromium, dissolved	0.0194	0.00050 mg/L	0.0198		98	80-120			
Cobalt, dissolved	0.0197	0.00010 mg/L	0.0199		99	80-120			
Copper, dissolved	0.0203	0.00040 mg/L	0.0200		101	80-120			
Iron, dissolved	1.98	0.010 mg/L	2.02		98	80-120			
Lead, dissolved	0.0201	0.00020 mg/L	0.0199		101	80-120			
Magnesium, dissolved	1.99	0.010 mg/L	2.02		98	80-120			
Manganese, dissolved	0.0205	0.00020 mg/L	0.0199		103	80-120			



APPENDIX 2: QUALITY CONTROL RESULTS

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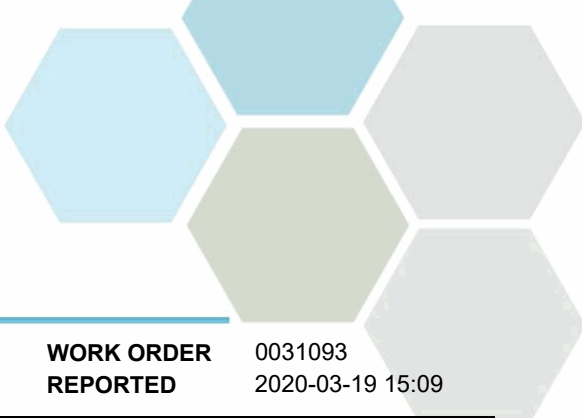
WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C1538, Continued									
LCS (B0C1538-BS1), Continued					Prepared: 2020-03-19, Analyzed: 2020-03-19				
Molybdenum, dissolved	0.0186	0.00010 mg/L	0.0200		93	80-120			
Nickel, dissolved	0.0200	0.00040 mg/L	0.0200		100	80-120			
Phosphorus, dissolved	2.02	0.050 mg/L	2.00		101	80-120			
Potassium, dissolved	1.92	0.10 mg/L	2.02		95	80-120			
Selenium, dissolved	0.0208	0.00050 mg/L	0.0200		104	80-120			
Silicon, dissolved	2.0	1.0 mg/L	2.00		100	80-120			
Silver, dissolved	0.0194	0.000050 mg/L	0.0200		97	80-120			
Sodium, dissolved	1.98	0.10 mg/L	2.02		98	80-120			
Strontium, dissolved	0.0190	0.0010 mg/L	0.0200		95	80-120			
Sulfur, dissolved	4.5	3.0 mg/L	5.00		90	80-120			
Tellurium, dissolved	0.0190	0.00050 mg/L	0.0200		95	80-120			
Thallium, dissolved	0.0208	0.000020 mg/L	0.0199		104	80-120			
Thorium, dissolved	0.0198	0.00010 mg/L	0.0200		99	80-120			
Tin, dissolved	0.0190	0.00020 mg/L	0.0200		95	80-120			
Titanium, dissolved	0.0186	0.0050 mg/L	0.0200		93	80-120			
Tungsten, dissolved	0.0197	0.0010 mg/L	0.0200		98	80-120			
Uranium, dissolved	0.0202	0.000020 mg/L	0.0200		101	80-120			
Vanadium, dissolved	0.0191	0.0010 mg/L	0.0200		96	80-120			
Zinc, dissolved	0.0206	0.0040 mg/L	0.0200		103	80-120			
Zirconium, dissolved	0.0196	0.00010 mg/L	0.0200		98	80-120			

Reference (B0C1538-SRM1)					Prepared: 2020-03-19, Analyzed: 2020-03-19				
Lithium, dissolved	0.106	0.00010 mg/L	0.100		106	77-127			
Aluminum, dissolved	0.222	0.0050 mg/L	0.235		94	79-114			
Antimony, dissolved	0.0444	0.00020 mg/L	0.0431		103	89-123			
Arsenic, dissolved	0.438	0.00050 mg/L	0.423		103	87-113			
Barium, dissolved	2.93	0.0050 mg/L	3.30		89	85-114			
Beryllium, dissolved	0.219	0.00010 mg/L	0.209		105	79-122			
Boron, dissolved	1.64	0.0050 mg/L	1.65		99	79-117			
Cadmium, dissolved	0.220	0.000010 mg/L	0.221		100	89-112			
Calcium, dissolved	7.56	0.20 mg/L	7.72		98	85-120			
Chromium, dissolved	0.429	0.00050 mg/L	0.434		99	87-113			
Cobalt, dissolved	0.127	0.00010 mg/L	0.124		103	90-117			
Copper, dissolved	0.838	0.00040 mg/L	0.815		103	90-115			
Iron, dissolved	1.30	0.010 mg/L	1.27		102	86-112			
Lead, dissolved	0.111	0.00020 mg/L	0.110		101	90-113			
Magnesium, dissolved	6.77	0.010 mg/L	6.59		103	84-116			
Manganese, dissolved	0.348	0.00020 mg/L	0.342		102	85-113			
Molybdenum, dissolved	0.405	0.00010 mg/L	0.404		100	87-112			
Nickel, dissolved	0.852	0.00040 mg/L	0.835		102	90-114			
Phosphorus, dissolved	0.516	0.050 mg/L	0.499		103	74-119			
Potassium, dissolved	2.89	0.10 mg/L	2.88		100	78-119			
Selenium, dissolved	0.0358	0.00050 mg/L	0.0324		110	89-123			
Sodium, dissolved	18.3	0.10 mg/L	18.0		101	81-117			
Strontium, dissolved	0.886	0.0010 mg/L	0.935		95	82-111			
Thallium, dissolved	0.0403	0.000020 mg/L	0.0385		105	90-113			
Uranium, dissolved	0.252	0.000020 mg/L	0.258		98	87-113			
Vanadium, dissolved	0.845	0.0010 mg/L	0.873		97	85-110			
Zinc, dissolved	0.903	0.0040 mg/L	0.848		107	88-114			

General Parameters, Batch B0C1256

Blank (B0C1256-BLK1)					Prepared: 2020-03-14, Analyzed: 2020-03-14				
Alkalinity, Total (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0 mg/L							



APPENDIX 2: QUALITY CONTROL RESULTS

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WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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General Parameters, Batch B0C1256, Continued

Blank (B0C1256-BLK1), Continued

Prepared: 2020-03-14, Analyzed: 2020-03-14

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							

Blank (B0C1256-BLK2)

Prepared: 2020-03-14, Analyzed: 2020-03-14

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							

LCS (B0C1256-BS1)

Prepared: 2020-03-14, Analyzed: 2020-03-14

Alkalinity, Total (as CaCO3)	97.7	1.0 mg/L	100		98	80-120			
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LCS (B0C1256-BS2)

Prepared: 2020-03-14, Analyzed: 2020-03-14

Alkalinity, Total (as CaCO3)	93.9	1.0 mg/L	100		94	80-120			
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General Parameters, Batch B0C1532

Blank (B0C1532-BLK1)

Prepared: 2020-03-18, Analyzed: 2020-03-18

Solids, Total Dissolved	< 15	15 mg/L							
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LCS (B0C1532-BS1)

Prepared: 2020-03-18, Analyzed: 2020-03-18

Solids, Total Dissolved	231	15 mg/L	240		96	85-115			
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Duplicate (B0C1532-DUP1)

Source: 0031093-01

Prepared: 2020-03-18, Analyzed: 2020-03-18

Solids, Total Dissolved	8100	15 mg/L		8400			4	15	
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Total Metals, Batch B0C1448

Blank (B0C1448-BLK1)

Prepared: 2020-03-17, Analyzed: 2020-03-18

Mercury, total	< 0.000010	0.000010 mg/L							
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Reference (B0C1448-SRM1)

Prepared: 2020-03-17, Analyzed: 2020-03-18

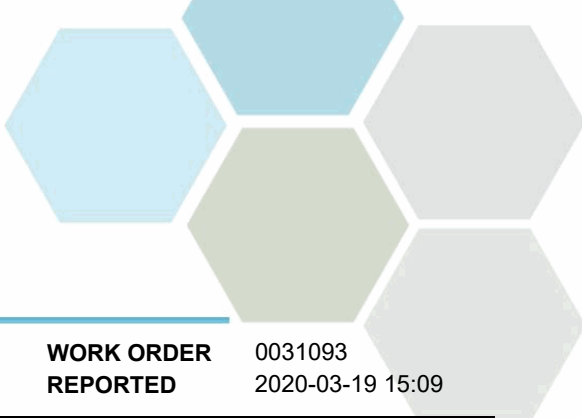
Mercury, total	0.00407	0.000010 mg/L	0.00489		83	80-120			
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Total Metals, Batch B0C1497

Blank (B0C1497-BLK1)

Prepared: 2020-03-17, Analyzed: 2020-03-19

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							



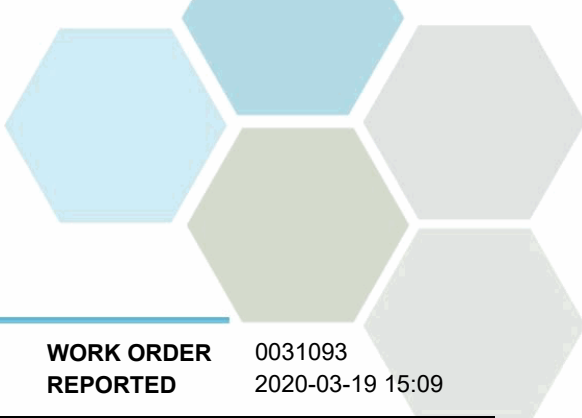
APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
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2020-03-19 15:09

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B0C1497, Continued									
Blank (B0C1497-BLK1), Continued					Prepared: 2020-03-17, Analyzed: 2020-03-19				
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 (B0C1497-BS1)					Prepared: 2020-03-17, Analyzed: 2020-03-19				
Aluminum, total	0.0220	0.0050 mg/L	0.0199		111	80-120			
Antimony, total	0.0197	0.00020 mg/L	0.0200		98	80-120			
Arsenic, total	0.0201	0.00050 mg/L	0.0200		101	80-120			
Barium, total	0.0197	0.0050 mg/L	0.0198		99	80-120			
Beryllium, total	0.0210	0.00010 mg/L	0.0198		106	80-120			
Bismuth, total	0.0219	0.00010 mg/L	0.0200		109	80-120			
Boron, total	0.0205	0.0050 mg/L	0.0200		102	80-120			
Cadmium, total	0.0205	0.000010 mg/L	0.0199		103	80-120			
Calcium, total	2.28	0.20 mg/L	2.02		113	80-120			
Chromium, total	0.0203	0.00050 mg/L	0.0198		103	80-120			
Cobalt, total	0.0206	0.00010 mg/L	0.0199		104	80-120			
Copper, total	0.0211	0.00040 mg/L	0.0200		105	80-120			
Iron, total	2.06	0.010 mg/L	2.02		102	80-120			
Lead, total	0.0209	0.00020 mg/L	0.0199		105	80-120			
Lithium, total	0.0219	0.00010 mg/L	0.0200		109	80-120			
Magnesium, total	2.10	0.010 mg/L	2.02		104	80-120			
Manganese, total	0.0219	0.00020 mg/L	0.0199		110	80-120			
Molybdenum, total	0.0198	0.00010 mg/L	0.0200		99	80-120			
Nickel, total	0.0206	0.00040 mg/L	0.0200		103	80-120			
Phosphorus, total	2.04	0.050 mg/L	2.00		102	80-120			
Potassium, total	2.02	0.10 mg/L	2.02		100	80-120			
Selenium, total	0.0220	0.00050 mg/L	0.0200		110	80-120			
Silicon, total	1.7	1.0 mg/L	2.00		85	80-120			
Silver, total	0.0204	0.000050 mg/L	0.0200		102	80-120			
Sodium, total	2.15	0.10 mg/L	2.02		106	80-120			
Strontium, total	0.0194	0.0010 mg/L	0.0200		97	80-120			
Sulfur, total	5.1	3.0 mg/L	5.00		103	80-120			
Tellurium, total	0.0191	0.00050 mg/L	0.0200		95	80-120			
Thallium, total	0.0216	0.000020 mg/L	0.0199		109	80-120			
Thorium, total	0.0207	0.00010 mg/L	0.0200		104	80-120			
Tin, total	0.0200	0.00020 mg/L	0.0200		100	80-120			
Titanium, total	0.0192	0.0050 mg/L	0.0200		96	80-120			
Tungsten, total	0.0203	0.0010 mg/L	0.0200		102	80-120			



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B0C1497, Continued									
LCS (B0C1497-BS1), Continued					Prepared: 2020-03-17, Analyzed: 2020-03-19				
Uranium, total	0.0211	0.000020 mg/L	0.0200		106	80-120			
Vanadium, total	0.0200	0.0010 mg/L	0.0200		100	80-120			
Zinc, total	0.0214	0.0040 mg/L	0.0200		107	80-120			
Zirconium, total	0.0194	0.00010 mg/L	0.0200		97	80-120			
Reference (B0C1497-SRM1)					Prepared: 2020-03-17, Analyzed: 2020-03-19				
Aluminum, total	0.299	0.0050 mg/L	0.303		99	82-114			
Antimony, total	0.0520	0.00020 mg/L	0.0511		102	88-115			
Arsenic, total	0.123	0.00050 mg/L	0.118		104	88-111			
Barium, total	0.790	0.0050 mg/L	0.823		96	83-110			
Beryllium, total	0.0524	0.00010 mg/L	0.0496		106	80-119			
Boron, total	3.35	0.0050 mg/L	3.45		97	80-118			
Cadmium, total	0.0505	0.000010 mg/L	0.0495		102	90-110			
Calcium, total	11.4	0.20 mg/L	11.6		98	85-113			
Chromium, total	0.255	0.00050 mg/L	0.250		102	88-111			
Cobalt, total	0.0403	0.00010 mg/L	0.0377		107	90-114			
Copper, total	0.524	0.00040 mg/L	0.486		108	90-117			
Iron, total	0.509	0.010 mg/L	0.488		104	90-116			
Lead, total	0.212	0.00020 mg/L	0.204		104	90-110			
Lithium, total	0.432	0.00010 mg/L	0.403		107	79-118			
Magnesium, total	3.96	0.010 mg/L	3.79		104	88-116			
Manganese, total	0.114	0.00020 mg/L	0.109		105	88-108			
Molybdenum, total	0.200	0.00010 mg/L	0.198		101	88-110			
Nickel, total	0.260	0.00040 mg/L	0.249		104	90-112			
Phosphorus, total	0.256	0.050 mg/L	0.227		113	72-118			
Potassium, total	7.38	0.10 mg/L	7.21		102	87-116			
Selenium, total	0.136	0.00050 mg/L	0.121		112	90-122			
Sodium, total	7.87	0.10 mg/L	7.54		104	86-118			
Strontium, total	0.371	0.0010 mg/L	0.375		99	86-110			
Thallium, total	0.0870	0.000020 mg/L	0.0805		108	90-113			
Uranium, total	0.0322	0.000020 mg/L	0.0306		105	88-112			
Vanadium, total	0.386	0.0010 mg/L	0.386		100	87-110			
Zinc, total	2.62	0.0040 mg/L	2.49		105	90-113			



CHAIN OF CUSTODY RECORD COC# B 58832 PAGE 1 OF 1

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

RELINQUISHED BY: S. BABULIC DATE: 3/11/20 RECEIVED BY: MAX. EXPRESS TC DATE: 03/12 TIME: 12:00
TURNAROUND TIME REQUESTED: Routine: (5-7 Days) [x] REGULATORY APPLICATION: Canadian Drinking Water Quality [] BC WQG [] BC HWR []
Rush: 1 Day* [] 2 Day* [] 3 Day* []
Other* []
*Contact Lab To Confirm. Surcharge May Apply
CCME: OTHER: []

REPORT TO: COMPANY: Alterra Construction Ltd. ADDRESS: 2158 Millstream Rd Victoria BC V9B 6H4 CONTACT: R. GAJDHAR TEL/FAX: 604-347-6903 DELIVERY METHOD: EMAIL [x] MAIL [] OTHER* [] DATA FORMAT: EXCEL [x] WATERTRAX [] ESdat [] EQUIS [] BC EMS [] OTHER* [] EMAIL 1: Rgajdhar@istander.com EMAIL 2: engineering.com EMAIL 3: sbabulic@istanderengineering.com

INVOICE TO: SAME AS REPORT TO [x] DELIVERY METHOD: EMAIL [] MAIL [] OTHER* [] EMAIL 1: EMAIL 2: EMAIL 3: PO#: Alterra 17-932



PROJECT NUMBER / INFO: Alterra 17-932
A: Biohazard D: Asbestos G: Strong Odour
B: Cyanide E: Heavy Metals H: High Contamination
C: PCBs F: Flammable I: Other (please specify*)

ANALYSES REQUESTED:

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

Table with columns: CLIENT SAMPLE ID, MATRIX (DRINKING WATER, OTHER WATER, SOIL, OTHER, # CONTAINERS), SAMPLING (DATE, TIME, CHLORINATED, FILTERED, PRESERVED), COMMENTS (e.g. flow/volume, media ID/notes)

Table with columns for various analyses: BTEX, VPH, PHCF1, VOC, VPH, PHCF2-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, FECA COLIFORMS, HPC, TOTAL COLIFORMS, E. coli, ASBESTOS, Anions, Nutrients, HOLD, POSSIBLE SAMPLE HAZARD CODE(S)

SHIPPING INSTRUCTIONS: Return Cooler(s) [] Supplies Needed: SAMPLE RETENTION: 30 Days (default) [] 60 Days [] 90 Days [] Other (surcharges will apply): * OTHER INSTRUCTIONS: SAMPLE RECEIPT CONDITION: COOLER 1 (°C): 3.9 ICE: Y [x] N [] COOLER 2 (°C): ICE: Y [] N [] COOLER 3 (°C): ICE: Y [] N [] CUSTODY SEALS INTACT: NA [] Y [] N []



ANALYTICAL SERVICES
Caring About Results, Obviously.

CARO.ca 1-888-311-8846


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

CARO BC COC, Rev 2017-05

CHAIN OF CUSTODY RECORD COC# B 58832 PAGE 1 OF 1

Page 13 of 13

REPORT TO:
COMPANY: Allterra Construction Ltd.
ADDRESS: 2158 Millstream Rd
Victoria BC V9B 6H4
CONTACT: R. GAJDHAR
TEL/FAX: 604-347-6903
DELIVERY METHOD: EMAIL MAIL OTHER*
DATA FORMAT: EXCEL WATERTRAX ESdat
EQuIS BC EMS OTHER*
EMAIL 1: Rgajdhar@islander
EMAIL 2: engineering.com
EMAIL 3: sbabulic@islanderengineering.com

INVOICE TO: SAME AS REPORT TO

* 0 0 3 1 0 9 3 *
DELIVERY METHOD: EMAIL MAIL OTHER*
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO#: Allterra 17-932

RELINQUISHED BY: S. BABULIC DATE: 3/11/20 RECEIVED BY: TC DATE: 03/12
TIME: 445 MAX. EXPRESS TIME: 1200
TURNAROUND TIME REQUESTED:
Routine: (5-7 Days)
Rush: 1 Day* 2 Day* 3 Day*
Other*
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
*Contact Lab To Confirm. Surcharge May Apply
CCME: OTHER:

PROJECT NUMBER / INFO: Allterra 17-932
A: Biohazard D: Asbestos G: Strong Odour
B: Cyanide E: Heavy Metals H: High Contamination
C: PCBs F: Flammable I: Other (please specify*)

ANALYSES REQUESTED:

SAMPLED BY: S. BABULIC
CLIENT SAMPLE ID: 20200311-LE-1

MATRIX:	SAMPLING:		CHLORINATED FILTERED PRESERVED	COMMENTS: <small>(e.g. flow/volume media ID/notes)</small>
	DATE YYYY-MM-DD	TIME HH:MM		
DRINKING WATER OTHER WATER SOIL OTHER # CONTAINERS	<u>2020-03-11</u>	<u>11:30</u>	<u>X</u>	<u>D. metals filtered</u>

BTEX <input type="checkbox"/>	VPH <input type="checkbox"/>	PHCF1 <input type="checkbox"/>	VOC <input type="checkbox"/>	VPH <input type="checkbox"/>	PHCF2-F4 <input type="checkbox"/>	PAH <input checked="" type="checkbox"/>	L/HEPH <input checked="" type="checkbox"/>	PHENOLS Chlorinated <input type="checkbox"/>	Non-Chlor. <input type="checkbox"/>	PCB <input type="checkbox"/>	GLYCOLS <input type="checkbox"/>	HAA <input type="checkbox"/>	PESTICIDES <input type="checkbox"/>	ACID HERBICIDES <input type="checkbox"/>	METALS - WATER TOTAL <input type="checkbox"/>	Hg <input type="checkbox"/>	METALS - WATER DISSOLVED <input type="checkbox"/>	Hg <input type="checkbox"/>	METALS - SOIL (SALM) <input type="checkbox"/>	inc. pH <input type="checkbox"/>	pH <input type="checkbox"/>	EC <input type="checkbox"/>	ALK <input type="checkbox"/>	TSS <input type="checkbox"/>	VSS <input type="checkbox"/>	TDS <input checked="" type="checkbox"/>	BOD <input type="checkbox"/>	COD <input type="checkbox"/>	TOG <input type="checkbox"/>	MOG <input type="checkbox"/>	FECAL COLIFORMS <input type="checkbox"/>	HPC <input type="checkbox"/>	TOTAL COLIFORMS <input type="checkbox"/>	E. coli <input type="checkbox"/>	ASBESTOS	ANIONS	NUTRIENTS	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)	
						<u>X</u>									<u>XX</u>		<u>XX</u>				<u>X</u>															<u>X</u>	<u>X</u>			

SHIPPING INSTRUCTIONS: Return Cooler(s)
Supplies Needed:

SAMPLE RETENTION:
30 Days (default)
60 Days 90 Days
Other (surcharges will apply):

*** OTHER INSTRUCTIONS:**
If you would like to talk to a real live Scientist about your project requirements, please check here:

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 3.9 ICE: Y N
COOLER 2 (°C): ICE: Y N
COOLER 3 (°C): ICE: Y N
CUSTODY SEALS INTACT: NA Y N

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

Table 1: Analytical Results for Nutrients

Sample Location	CSR Standards ⁽¹⁾		MW19-01	MW19-02	SB1	SB2	SB3
	As-built Well Depths to Bottom (mbgs)		6.27m	8.07m	3.24m	2.65m	2.94m
Sample ID			0031817-01	0031817-02	0031817-03	0031817-04	0031817-05
Date Sampled	Aquatic Life	Drinking Water	MW19-01	MW19-02	SB1	SB2	SB3
			2020-03-20	2020-03-20	2020-03-20	2020-03-20	2020-03-20
Physical Tests							
Conductivity (uS/cm)	-	-	371	424	256	396	533
Hardness (as CaCO3) mg/L	-	-	80.7	226	127	188	310
pH (pH Units)	-	-	8.02	7.76	7.58	7.58	7.67
Total Dissolved Solids mg/L	-	-	236	306	152	263	397
Turbidity (NTU)	-	-	257	1.36	23.6	29.9	83.4
Anions and Nutrients mg/L							
Alkalinity, Bicarbonate (as CaCO3)			137	153	96.7	157	208
Alkalinity, Carbonate (as CaCO3)			<1.0	<1.0	<1.0	<1.0	<1.0
Chloride (Cl)	1500	250	16	11	4.07	27.1	9.7
Fluoride (F)	2 (H < 50)	1.5					
	3 (H ≥ 50)		0.16	<0.10	<0.10	<0.10	<0.10
Nitrate (as N)	400	10	0.165	0.5	0.155	0.151	0.448
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				<0.0050		
Cl 6 - <8 mg/L	0.8						
Cl 8 - <10 mg/L	1						<0.0050
Cl ≥ 10 mg/L	2						
Sulfate (SO4)	1000	500	0.007	<0.0050		<0.0050	
			46.3	104	40.7	42.2	121

Notes: Refer to Table Endnotes (attached)

Table 2: Analytical Results for Dissolved Metals

Sample Location	CSR Standards ⁽¹⁾		MW19-01	MW19-02	SB1	SB2	SB3
As-built Well Depths (mbgs)			6.27m	8.07m	3.24m	2.65m	2.94m
Sample ID			0031817-01	0031817-02	0031817-03	0031817-04	0031817-05
			MW19-01	MW19-02	SB1	SB2	SB3
Date Sampled	Aquatic Life	Drinking Water	2020-03-20	2020-03-20	2020-03-20	2020-03-20	2020-03-20
Physical Tests mg/L							
Hardness (as CaCO3)	-	-	80.7	226	127	188	310
Dissolved Metals mg/L							
Aluminum (Al)-Dissolved	-	9.5	0.0098	<0.0050	<0.0050	0.0248	<0.0050
Antimony (Sb)-Dissolved	0.2	0.006	0.00031	<0.00020	<0.00020	<0.00020	<0.00020
Arsenic (As)-Dissolved	0.05	0.01	0.00207	<0.00050	<0.00050	<0.00050	<0.00050
Barium (Ba)-Dissolved	10	1	0.0096	0.0147	0.0056	0.0069	0.008
Beryllium (Be)-Dissolved	0.053	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Boron (B)-Dissolved	50	5	0.102	0.0656	0.0474	0.0474	0.0439
Cadmium (Cd)-Dissolved	0.0001 (H<30)	0.005	<0.000010				
	0.0003 (H=30-<90)						
	0.0005 (H=90-<150)			<0.000010			
	0.0006 (H=150-<210)			<0.000010	<0.000010	<0.000010	
Calcium (Ca)-Dissolved	-	-	26	75.3	44.4	61.1	102
Chromium (Cr)-Dissolved	0.01	0.05	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Colbalt (Co)-Dissolved	0.04	-	0.00014	<0.00010	<0.00010	<0.00010	0.00017
Copper (Cu)-Dissolved	0.02 (H<50)	1					
	0.03 (H=50-<75)						
	0.04 (H=75-<100)		0.00097				
	0.05 (H=100-<125)						
	0.06 (H=125-<150)			0.00058			
	0.07 (H=150-<175)					0.00697	
	0.08 (H=175-<200)						
0.09 (H>200)			0.00084			0.00097	
Iron (Fe)-Dissolved	-	6.5	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)-Dissolved	0.04 (H<50)	0.01					
	0.05 (H=50-<100)		<0.00020				
	0.06 (H=100-<200)				<0.00020	<0.00020	
	0.11 (H=200-<300)			<0.00020			
	0.16 (H>300)						<0.00020
Lithium (Li)-Dissolved	-	-	0.00577	0.0002	0.00011	0.00024	0.00015
Magnesium (Mg)-Dissolved	-	100	3.83	9.21	3.94	8.5	13.5
Manganese (Mn)-Dissolved	-	0.55	0.0648	0.00525	0.00038	0.00073	0.00502
Mercury (Hg)-Dissolved	0.001	0.001	-	-	-	-	-
Molybdenum (Mo)-Dissolved	10	0.25	0.0122	0.00102	0.00043	0.00052	0.0008
Nickel (Ni)-Dissolved	0.25 (H<60)	-					
	0.65 (H=60-<120)		0.00097				
	1.1 (H=120-<180)				0.00308		
	1.5 (H>180)			<0.00040		0.00175	0.00124
Phosphorus (P)-Dissolved	-	-	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	-	-	1.26	0.73	0.29	0.77	0.66
Selenium (Se)-Dissolved	0.01	0.01	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon (Si)-Dissolved	-	-	5.4	5.4	4.2	6.1	6.5
Silver (Ag)-Dissolved	0.0005 (H<=100)	-	<0.000050				
	0.015 (H>100)			<0.000050	<0.000050	<0.000050	<0.000050
Sodium (Na)-Dissolved	-	200	50.7	9.22	3.09	14.9	7.97
Strontium (Sr)-Dissolved	-	-	0.124	0.232	0.107	0.185	0.217
Sulfur (S)-Dissolved	-	-	15.7	34.1	13	13.7	41.7
Tellurium (Te)-Dissolved	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Thallium (Tl)-Dissolved	0.003	-	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Thorium (Th)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	-	-	<0.00020	<0.00020	<0.00020	0.00035	<0.00020
Titanium (Ti)-Dissolved	1	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Tungsten (W)-Dissolved	-	-	0.106	0.0182	<0.0010	<0.0010	<0.0010
Uranium (U)-Dissolved	3	0.02	0.00294	0.00114	0.000382	0.000815	0.00179
Vanadium (V)-Dissolved	-	-	<0.0010	0.0014	<0.0010	<0.0010	<0.0010
Zinc (Zn)-Dissolved	0.075 (H<90)	5	<0.0040				
	0.150 (H=90-<100)						
	0.900 (H=100-<200)			<0.0040	<0.0040		
	1.650 (H=200-<300)			<0.0040			<0.0040
2.4 (H=300-<400)							
Zirconium (Zr)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<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	SB1	SB2	SB3
	As-built Well Depths (mbgs)		6.27m	8.07m	3.24m	2.65m	2.94m
Sample ID			0031817-01	0031817-02	0031817-03	0031817-04	0031817-05
Date Sampled	Aquatic Life	Drinking Water	MW19-01	MW19-02	SB1	SB2	SB3
	2020-03-20	2020-03-20	2020-03-20	2020-03-20	2020-03-20	2020-03-20	2020-03-20
Turbidity (NTU)	-	-	257	1.36	23.6	29.9	83.4
Hydrocarbons ug/L							
EPH10-19	5000	5000	<250	<250	<250	<250	<250
EPH10-19 (SG)	5000	5000					
EPH19-32	-	-	<250	<250	<250	<250	<250
EPH19-32 (SG)	-	-					
LEPH	500	-	<250	<250	<250	<250	<250
HEPH	-	-	<250	<250	<250	<250	<250
Polycyclic Aromatic Hydrocarbons ug/L							
Acenaphthene	60	-	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	-	-	<0.200	<0.200	<0.200	<0.200	<0.200
Acridine	0.5	-	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	1	-	<0.010	<0.010	<0.010	<0.010	<0.010
Benz(a)anthracene	1	-	<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
Benzo(b)fluoranthene	-	-	-	-	-	-	-
Benzo(b+j)fluoranthene	-	-	<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
Benzo(k)fluoranthene	-	-	<0.050	<0.050	<0.050	<0.050	<0.050
2-Chloronaphthalene	-	-	<0.100	<0.100	<0.100	<0.100	<0.100
Chrysene	1	-	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenz(a,h)anthracene	-	-	<0.010	<0.010	<0.010	<0.010	<0.010
Fluoranthene	2	-	<0.030	<0.030	<0.030	<0.030	<0.030
Fluorene	120	-	<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
1-Methylnaphthalene	-	-	<0.100	<0.100	<0.100	<0.100	<0.100
2-Methylnaphthalene	-	-	<0.100	<0.100	<0.100	<0.100	<0.100
Naphthalene	10	-	<0.200	<0.200	<0.200	<0.200	<0.200
Phenanthrene	3	-	<0.100	<0.100	<0.100	<0.100	<0.100
Pyrene	0.2	-	<0.020	<0.020	<0.020	<0.020	<0.020
Quinoline	34	-	<0.050	<0.050	<0.050	<0.050	<0.050

Notes: Refer to Table Endnotes (attached)

Analytical Table Footnotes: Leachate and 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

Table 1: Analytical Results for Nutrients			SHA-LE-1	SHA-SW-1	SHA-SW-1	RPD
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	0031093-01	0031817-07	0031817-08	
Sample ID			20200311_LE-1	SW1	SW1	
Date Sampled/Time			2020-03-11	2020-03-20	2020-03-20	
Physical Tests						
Total Dissolved Solids (mg/L)	-	-	8400	205	205	0.00%
pH	7-10.5	6.5-9	-	7.84	7.86	0.25%
Conductivity (uS/cm)	-	-	-	290	322	10.46%
Hardness (as CaCO3)	-	-	3080	152	153	0.66%
Turbidity (NTU)	Δ1 NTU	8 NTU above background (24-hr during clear flow)	-	1.12	0.22	*
Anions and Nutrients mg/L						
Alkalinity Bicarbonate (as CaCO3)	<10 high sensitivity to acid inputs 10-20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs		34.7	110	110	0.00%
Alkalinity Carbonate (as CaCO3)			<1.0	<1.0	<1.0	*
Acid Sensitivity			Low	Low	Low	
Chloride (Cl)	250 mg/L	600 mg/L (instant max), 150 mg/L (30-day average)	3500	8.02	8.13	1.36%
Fluoride (F)	1.5 mg/L (instant max) 1.0 mg/L (30-day average)	0.4 (Hardness <10mg/L)	<1.00	<0.10	<0.10	*
		Hardness-Dependent AW (Hardness is >10mg/L) ⁽³⁾	-	0.31	0.31	-
Nitrate (as N)	45 mg/L	32.8 mg/L (instant maximum) 3.0 mg/L (30-day average)	1.72	0.192	0.241	22.63%
Nitrite (as N) ⁽²⁾	3 mg/L	Cl > 10 mg/L 0.6 mg/L (MAX), 0.2 mg/L (30-day average)	0.465	<0.0050	<0.0050	*
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)		60	60.9	1.49%
H 181 - 250 mg/L		429 mg/L (30-day average)				
H > 250 mg/L		TBD		1430		

Notes: Refer to Table Endnotes (attached)

Table 2: Analytical Results for Total Metals				SHA-LE-1	SHA-SW-1	SHA-SW-1	RPD
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	0031093-01	0031817-07	0031817-08		
Sample ID			20200311_LE-1	SW1	SW1		
Date Sampled/Time			2020-03-11	2020-03-20	2020-03-20		
Physical Tests							
Hardness (as CaCO3) (mg/L)	-	-	3080	152	153	0.66%	
pH	7-10.5	6.5-9	-	7.84	7.86	0.25%	
Total Metals (mg/L)							
Aluminum (Al)-Total	0.2	-	0.0776	0.0095	0.0063	*	
Antimony (Sb)-Total	-	-	<0.00020	<0.00020	<0.00020	*	
Arsenic (As)-Total	0.01	0.005	<0.00050	<0.00050	<0.00050	*	
Barium (Ba)-Total	-	-	0.0169	0.0085	0.0083	*	
Beryllium (Be)-Total	-	-	<0.00010	<0.00010	<0.00010	*	
Bismuth, total	-	-	<0.00010	<0.00010	<0.00010	*	
Boron (B)-Total	5	1.2	0.209	0.0338	0.027	22.37%	
Cadmium (Cd)-Total	-	-	0.000705	<0.000010	<0.000010	*	
Calcium (Ca)-Total	-	-	859	53.2	50.2	5.80%	
Chromium (Cr)-Total	-	-	0.0108	<0.00050	<0.00050	*	
Chromium (Cr(III))	-	-	-	-	-	-	
Chromium (Cr(VI))	-	-	-	-	-	-	
Cobalt (Co)-Total	-	0.110 (Short Term), 0.004 (Long Term Average)	0.00195	<0.00010	<0.00010	*	
Copper (Cu)-Total	0.5	Hardness-Dependent ⁽⁷⁾	0.00198	0.00092	0.00085	7.91%	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	0.2915	0.0163	0.0164	-	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	0.1232	0.0061	0.0061	-	
Iron (Fe)-Total	-	1	0.029	<0.010	<0.010	*	
Lead (Pb)-Total	0.01	Hardness-Dependent ⁽³⁾	<0.00020	<0.00020	<0.00020	*	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	6.4100	0.1391	0.1403	-	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	0.2533	0.0087	0.0088	-	
Lithium (Li)-Total	-	-	0.00042	0.00015	0.00015	*	
Magnesium (Mg)-Total	-	-	261	7.34	7.06	3.89%	
Manganese (Mn)-Total	-	Hardness-Dependent ⁽³⁾	19.5	0.00182	0.00082	*	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	34.5	2.2	2.2	-	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	14.2	1.3	1.3	-	
Mercury (Hg)-Total	0.001	0.00002	<0.000010	-	-	*	
Molybdenum (Mo)-Total	0.25	≤1 (instant max) 2 (30-d average)	0.00027	0.00059	0.00052	12.61%	
Nickel (Ni)-Total	-	0.025 (Hardness-Dependent ⁽⁸⁾ BCAWQG to protect AW H<60mg/L)	0.0128	0.00048	<0.00040	*	
		Calculated Hardness-Dependent ⁽⁸⁾ BCAWQG to protect AW 60≤H<180 mg/L CaCO3	1.292	0.131	0.132	-	
Phosphorus(P)-Total	-	-	<0.050	<0.050	<0.050	*	
Potassium (K)-Total	-	-	26.4	0.58	0.55	5.31%	
Selenium (Se)-Total	0.01	0.002	<0.00050	<0.00050	<0.00050	*	
Silicon (Si)-Total	-	-	6.6	5.3	4.9	7.84%	
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)	0.000138	0.00006	<0.000050	*	
Sodium (Na)-Total	-	-	2070	6.24	6	3.92%	
Strontium (Sr)-Total	-	-	4.39	0.146	0.137	6.36%	
Sulfur (S)-Total	-	-	627	23.3	21.4	8.50%	
Tellurium (Te)-Total	-	-	<0.00050	<0.00050	<0.00050	*	
Thallium (Tl)-Total	-	-	0.000033	<0.000020	<0.000020	*	
Thorium (Th)-Total	-	-	<0.00010	<0.00010	<0.00010	*	
Tin (Sn)-Total	-	-	<0.00020	<0.00020	<0.00020	*	
Titanium (Ti)-Total	-	-	<0.00050	<0.00050	<0.00050	*	
Tungsten (W)-Total	-	-	<0.0010	<0.0010	<0.0010	*	
Uranium (U)-Total	-	-	0.000135	0.000721	0.000661	8.68%	
Vanadium (V)-Total	-	-	<0.0010	0.0013	0.0015	*	
Zinc (Zn)-Total	5.0	Hardness >90 mg/L	0.0425	<0.0040	<0.0040	*	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (instant max)	2.276	0.080	0.080	-	
		Hardness-Dependent BCAWQG to protect AW ⁽⁸⁾ (30-d average)	2.250	0.054	0.055	-	
Zirconium (Zr)-Total	-	-	<0.00010	<0.00010	<0.00010	*	

Table 3: Analytical Results for Dissolved Metals			SHA-LE-1	SHA-SW-1	SHA-SW-1	RPD
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	0031093-01	0031817-07	0031817-08	
Sample ID			20200311_LE-1	SW1	SW1	
Date Sampled/Time			2020-03-11	2020-03-20	2020-03-20	
Physical Tests						
Hardness (as CaCO3) (mg/L)	-	-	3080	152	153	0.66%
pH	7-10.5	6.5-9	-	7.84	7.86	0.25%
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	0.0119	<0.0050	<0.0050	*
		pH/Hardness Dependent BCAWQG to protect AW ⁽⁴⁾ (instant max)	-	0.793	0.827	
		pH/Hardness Dependent BCAWQG to protect AW ⁽⁴⁾ (30-d Mean)	-	1.253	1.330	
Antimony (Sb)-Dissolved	-	-	<0.00020	<0.00020	<0.00020	*
Arsenic (As)-Dissolved	-	-	<0.00050	<0.00050	<0.00050	*
Barium (Ba)-Dissolved	-	-	0.0155	0.0095	0.0079	*
Beryllium (Be)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	*
Bismuth (Bi)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	*
Boron (B)-Dissolved	-	-	0.19	0.0337	0.0234	*
Cadmium (Cd)-Dissolved	-	Hardness-Dependent⁽³⁾	0.000684	<0.000010	<0.000010	*
		Calculated Hardness-Dependent ⁽³⁾ BCAWQG to protect AW (short-term max) $e[1.03 * \ln(Hss) - 5.274]$ ug/L H<455mg/L	Hardness exceeds 455mg/L	0.00091	0.00091	
		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	0.00029	0.00029	
Calcium (Ca)-Dissolved	-	up to 4, highly sensitive to acid inputs 4 to 8, moderately sensitive over 8 low sensitivity	833	49.4	49.7	0.61%
Chromium (Cr)-Dissolved	-	-	Low	Low	Low	
Chromium (Cr)-Dissolved	-	-	0.00878	<0.00050	<0.00050	*
Cobalt (Co)-Dissolved	-	-	0.00179	<0.00010	<0.00010	*
Copper (Cu)-Dissolved	-	-	0.00181	0.00085	0.00081	*
Iron (Fe)-Dissolved	-	0.35	0.026	<0.010	<0.010	*
Lead (Pb)-Dissolved	-	-	<0.00020	<0.00020	<0.00020	*
Lithium, dissolved	-	-	0.00029	0.00013	0.00013	*
Magnesium (Mg)-Dissolved	-	-	241	6.9	7.08	2.58%
Manganese (Mn)-Dissolved	-	-	19.1	0.00055	0.00053	*
Mercury (Hg)-Dissolved	-	-	<0.000010	-	-	*
Molybdenum (Mo)-Dissolved	-	-	0.00044	0.00053	0.00056	5.50%
Nickel (Ni)-Dissolved	-	-	0.0118	<0.00040	<0.00040	*
Phosphorus (P)-Dissolved	-	-	<0.050	<0.050	<0.050	*
Potassium (K)-Dissolved	-	-	24.7	0.54	0.55	1.83%
Selenium (Se)-Dissolved	-	-	<0.00050	<0.00050	<0.00050	*
Silicon (Si)-Dissolved	-	-	6.5	5	5.2	3.92%
Silver (Ag)-Dissolved	-	-	0.000107	<0.000050	<0.000050	*
Sodium (Na)-Dissolved	-	-	1880	5.87	5.99	2.02%
Strontium (Sr)-dissolved	-	-	4.14	0.137	0.139	1.45%
Sulfur (S)-Dissolved	-	-	588	19	20.6	8.08%
Tellurium (Te)-Dissolved	-	-	<0.00050	<0.00050	<0.00050	*
Thallium (Tl)-Dissolved	-	-	0.000023	<0.000020	<0.000020	*
Thorium (Th)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	*
Tin (Sn)-Dissolved	-	-	<0.00020	<0.00020	<0.00020	*
Titanium (Ti)-Dissolved	-	-	<0.0050	<0.0050	<0.0050	*
Tungsten (W)-Dissolved	-	-	<0.0010	<0.0010	<0.0010	
Uranium (U)-Dissolved	-	-	0.000116	0.000662	0.000661	0.15%
Vanadium (V)-Dissolved	-	-	<0.0010	<0.0010	<0.0010	*
Zinc (Zn)-Dissolved	-	-	0.0415	<0.0040	<0.0040	*
Zirconium (Zr)-Dissolved	-	-	<0.00010	<0.00010	<0.00010	*

Notes: Refer to Table Endnotes (attached)

Table 4: Analytical Results for Hydrocarbons and PAHs			SHA-LE-1	SHA-SW-1	SHA-SW-1	RPD
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	0031817-06	0031817-07	0031817-08	
Sample ID			LE-1	SW1	SW1	
Date Sampled/ Time			2020-03-20	2020-03-20	2020-03-20	
Hydrocarbons ug/L						
LEPH	-	-	421	<250	<250	*
HEPH	-	-	2430	<250	<250	*
Polycyclic Aromatic						
Acenaphthene	-	6 (LONG TERM)	<0.050	<0.050	<0.050	*
Acenaphthylene	-	-	<0.200	<0.200	<0.200	*
Acridine	-	3 (LONG TERM), 0.05 (PHOTOTOXIC)	<0.050	<0.050	<0.050	*
Anthracene	-	4 (LONG TERM), 0.1 (PHOTOTOXIC)	<0.010	<0.010	<0.010	*
Benz(a)anthracene	0.01	0.1 (LONG TERM), 0.1 (PHOTOTOXIC)	<0.010	<0.010	<0.010	*
Benzo(a)pyrene	-	0.01 (LONG TERM)	<0.010	<0.010	<0.010	*
Benzo(b)fluoranthene	-	-	-	-	-	-
Benzo(b+j)fluoranthene	-	-	<0.050	<0.050	<0.050	*
Benzo(g,h,i)perylene	-	-	<0.050	<0.050	<0.050	*
Benzo(k)fluoranthene	-	-	<0.050	<0.050	<0.050	*
2-Chloronaphthalene			<0.100	<0.100	<0.100	*
Chrysene	-	-	<0.050	<0.050	<0.050	*
Dibenz(a,h)anthracene	-	-	<0.010	<0.010	<0.010	*
Fluoranthene	-	4 (LONG TERM), 0.2 (PHOTOTOXIC)	<0.030	<0.030	<0.030	*
Fluorene	-	12 (LONG TERM)	<0.050	<0.050	<0.050	*
Indeno(1,2,3-c,d)pyrene	-	-	<0.050	<0.050	<0.050	*
1-Methylnaphthalene			<0.100	<0.100	<0.100	*
2-Methylnaphthalene			<0.100	<0.100	<0.100	*
Naphthalene	-	1 (LONG TERM)	<0.200	<0.200	<0.200	*
Phenanthrene	-	0.3 (LONG TERM)	<0.100	<0.100	<0.100	*
Pyrene	-	0.02 (PHOTOTOXIC)	<0.020	<0.020	<0.020	*
Quinoline	-	-	<0.050	<0.050	<0.050	*

Notes: Refer to Table Endnotes (attached)



CERTIFICATE OF ANALYSIS

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

ATTENTION Rahim Gaidhar

PO NUMBER 17-932
PROJECT P17-932

PROJECT INFO

WORK ORDER 0031817

RECEIVED / TEMP 2020-03-21 10:30 / 9°C
REPORTED 2020-03-30 13:30
COC NUMBER MARCH 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.

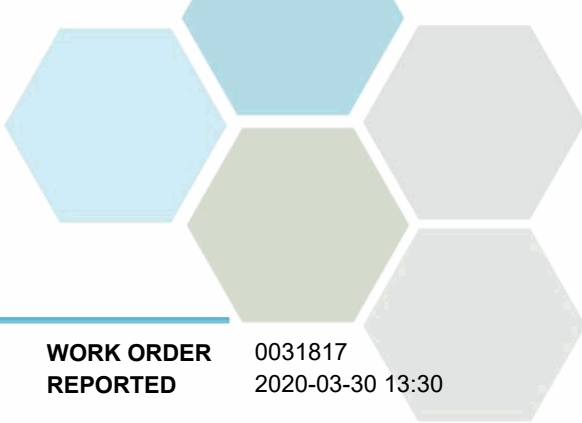
If you have any questions or concerns, please contact me at nyjpp@caro.ca

Authorized By:

Nicole Yipp
Team Lead, Client Service

1-888-311-8846 | www.caro.ca

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

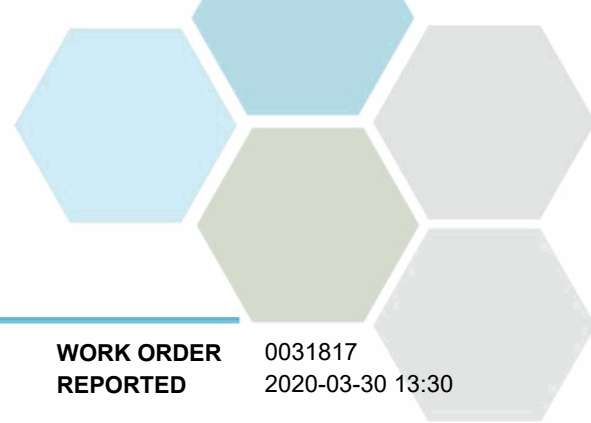


TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
MW19-01 (0031817-01) Matrix: Water Sampled: 2020-03-20 12:30					
Anions					
Chloride	16.0	0.50	mg/L	2020-03-26	
Fluoride	0.16	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.172	0.0050	mg/L	2020-03-24	
Nitrite (as N)	0.0070	0.0050	mg/L	2020-03-22	
Sulfate	46.3	1.0	mg/L	2020-03-26	
BCMOE Aggregate Hydrocarbons					
EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	66	60-126	%	2020-03-26	
Calculated Parameters					
Hardness, Total (as CaCO3)	80.7	0.500	mg/L	N/A	
Nitrate (as N)	0.165	0.0100	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.00577	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	0.0098	0.0050	mg/L	2020-03-26	
Antimony, dissolved	0.00031	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	0.00207	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0096	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.102	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	26.0	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	0.00014	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00097	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	3.83	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.0648	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.0122	0.00010	mg/L	2020-03-26	
Nickel, dissolved	0.00097	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	1.26	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	5.4	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	50.7	0.10	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW19-01 (0031817-01) | Matrix: Water | Sampled: 2020-03-20 12:30, Continued

Dissolved Metals, Continued

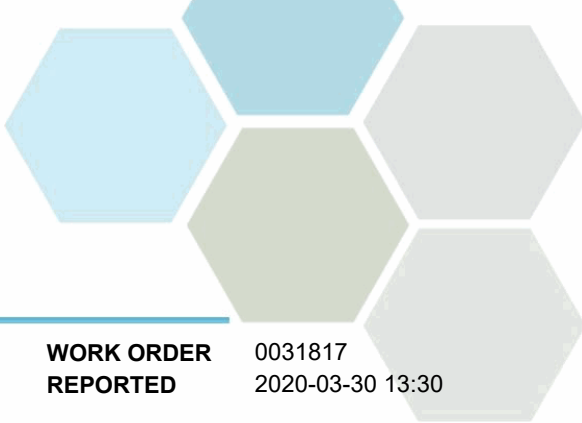
Strontium, dissolved	0.124	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	15.7	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	0.106	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.00294	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	137	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	137	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	371	2.0	µS/cm	2020-03-24	
pH	8.02	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	236	15	mg/L	2020-03-26	
Turbidity	257	0.10	NTU	2020-03-24	HT1

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-26	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-26	
Acridine	< 0.050	0.050	µg/L	2020-03-26	
Anthracene	< 0.010	0.010	µg/L	2020-03-26	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-26	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-26	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-26	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-26	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-26	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-26	
Chrysene	< 0.050	0.050	µg/L	2020-03-26	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-26	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-26	
Fluorene	< 0.050	0.050	µg/L	2020-03-26	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-26	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-26	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-26	
Naphthalene	< 0.200	0.200	µg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW19-01 (0031817-01) | Matrix: Water | Sampled: 2020-03-20 12:30, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Phenanthrene	< 0.100	0.100	µg/L	2020-03-26	
Pyrene	< 0.020	0.020	µg/L	2020-03-26	
Quinoline	< 0.050	0.050	µg/L	2020-03-26	
Surrogate: Acridine-d9	76	50-140	%	2020-03-26	
Surrogate: Naphthalene-d8	76	50-140	%	2020-03-26	
Surrogate: Perylene-d12	70	50-140	%	2020-03-26	

MW19-02 (0031817-02) | Matrix: Water | Sampled: 2020-03-20 13:30

Anions

Chloride	11.0	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.500	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	104	1.0	mg/L	2020-03-27	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	80	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	226	0.500	mg/L	N/A	
Nitrate (as N)	0.500	0.0100	mg/L	N/A	

Dissolved Metals

Lithium, dissolved	0.00020	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0147	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0656	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	75.3	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00084	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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MW19-02 (0031817-02) | Matrix: Water | Sampled: 2020-03-20 13:30, Continued

Dissolved Metals, Continued

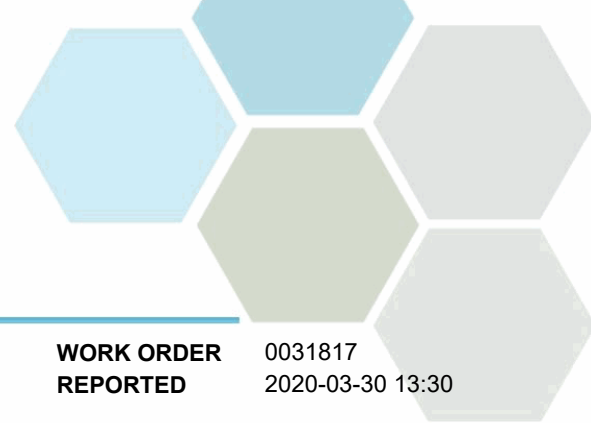
Magnesium, dissolved	9.21	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00525	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00102	0.00010	mg/L	2020-03-26	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.73	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	5.4	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	9.22	0.10	mg/L	2020-03-26	
Strontium, dissolved	0.232	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	34.1	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	0.0182	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.00114	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	0.0014	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	153	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	153	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	424	2.0	µS/cm	2020-03-24	
pH	7.76	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	306	15	mg/L	2020-03-26	
Turbidity	1.36	0.10	NTU	2020-03-24	HT1

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-28	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-28	
Acridine	< 0.050	0.050	µg/L	2020-03-28	
Anthracene	< 0.010	0.010	µg/L	2020-03-28	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-28	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-28	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-28	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-28	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
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Analyte	Result	RL	Units	Analyzed	Qualifier
MW19-02 (0031817-02) Matrix: Water Sampled: 2020-03-20 13:30, Continued					
<i>Polycyclic Aromatic Hydrocarbons (PAH), Continued</i>					
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-28	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-28	
Chrysene	< 0.050	0.050	µg/L	2020-03-28	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-28	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-28	
Fluorene	< 0.050	0.050	µg/L	2020-03-28	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-28	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-28	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-28	
Naphthalene	< 0.200	0.200	µg/L	2020-03-28	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-28	
Pyrene	< 0.020	0.020	µg/L	2020-03-28	
Quinoline	< 0.050	0.050	µg/L	2020-03-28	
Surrogate: Acridine-d9	94	50-140	%	2020-03-28	
Surrogate: Naphthalene-d8	74	50-140	%	2020-03-28	
Surrogate: Perylene-d12	94	50-140	%	2020-03-28	

SB1 (0031817-03) | Matrix: Water | Sampled: 2020-03-20 12:00

Anions

Chloride	4.07	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.155	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	40.7	1.0	mg/L	2020-03-26	

BCMOE Aggregate Hydrocarbons

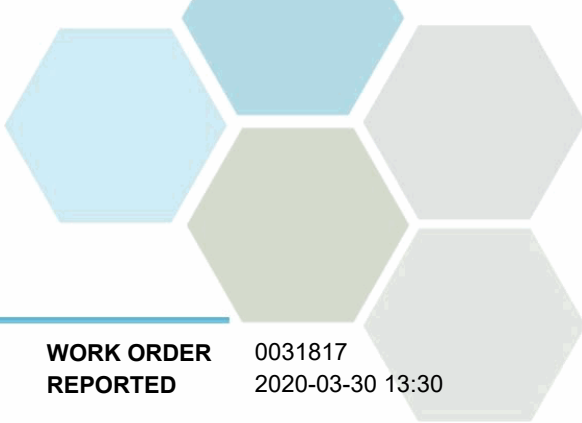
EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	85	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	127	0.500	mg/L	N/A	
Nitrate (as N)	0.155	0.0100	mg/L	N/A	

Dissolved Metals

Lithium, dissolved	0.00011	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0056	0.0050	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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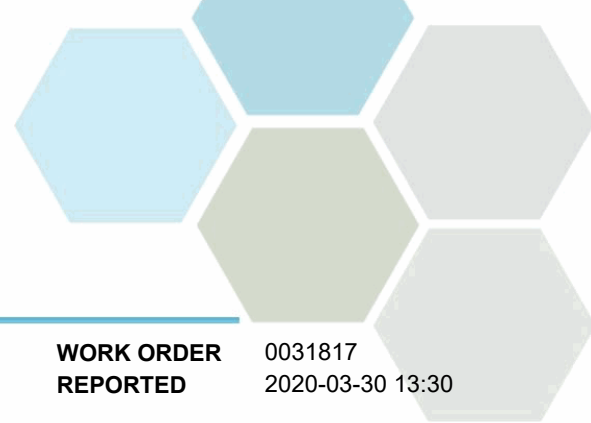
SB1 (0031817-03) | Matrix: Water | Sampled: 2020-03-20 12:00, Continued

Dissolved Metals, Continued

Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0474	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	44.4	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00058	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	3.94	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00038	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00043	0.00010	mg/L	2020-03-26	
Nickel, dissolved	0.00308	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.29	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	4.2	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	3.09	0.10	mg/L	2020-03-26	
Strontium, dissolved	0.107	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	13.0	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.000382	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	96.7	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	96.7	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	256	2.0	µS/cm	2020-03-24	
pH	7.58	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	152	15	mg/L	2020-03-26	
Turbidity	23.6	0.10	NTU	2020-03-24	HT1



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB1 (0031817-03) | Matrix: Water | Sampled: 2020-03-20 12:00, Continued

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	93	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	88	50-140	%	2020-03-27	
Surrogate: Perylene-d12	92	50-140	%	2020-03-27	

SB2 (0031817-04) | Matrix: Water | Sampled: 2020-03-20 11:15

Anions

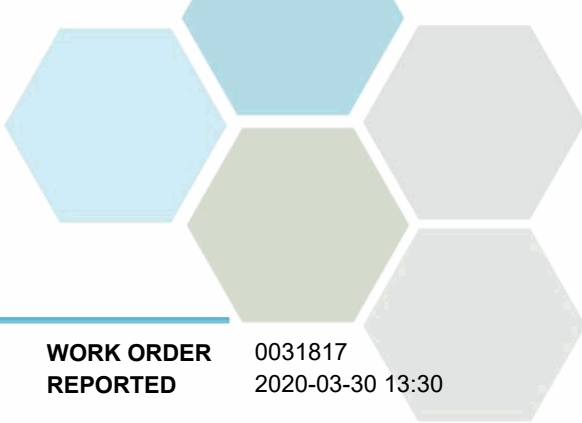
Chloride	27.1	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.151	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	42.2	1.0	mg/L	2020-03-26	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	88	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	188	0.500	mg/L	N/A	
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TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB2 (0031817-04) | Matrix: Water | Sampled: 2020-03-20 11:15, Continued

Calculated Parameters, Continued

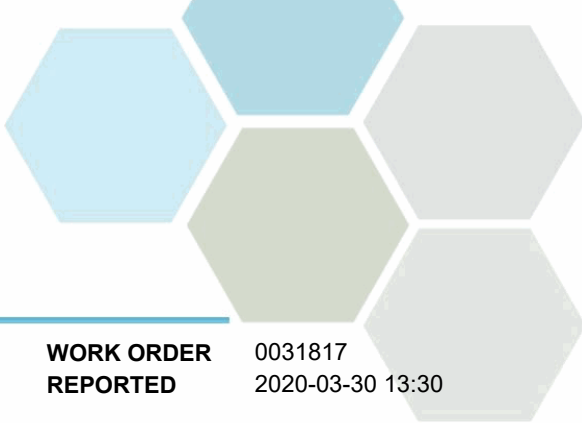
Nitrate (as N)	0.151	0.0100	mg/L	N/A	
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Dissolved Metals

Lithium, dissolved	0.00024	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	0.0248	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0069	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0474	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	61.1	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00697	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	8.50	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00073	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00052	0.00010	mg/L	2020-03-26	
Nickel, dissolved	0.00175	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.77	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	6.1	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	14.9	0.10	mg/L	2020-03-26	
Strontium, dissolved	0.185	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	13.7	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	0.00035	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.000815	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	157	1.0	mg/L	2020-03-24	
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TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
SB2 (0031817-04) Matrix: Water Sampled: 2020-03-20 11:15, Continued					
<i>General Parameters, Continued</i>					
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	157	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	396	2.0	µS/cm	2020-03-24	
pH	7.58	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	263	15	mg/L	2020-03-26	
Turbidity	29.9	0.10	NTU	2020-03-24	HT1

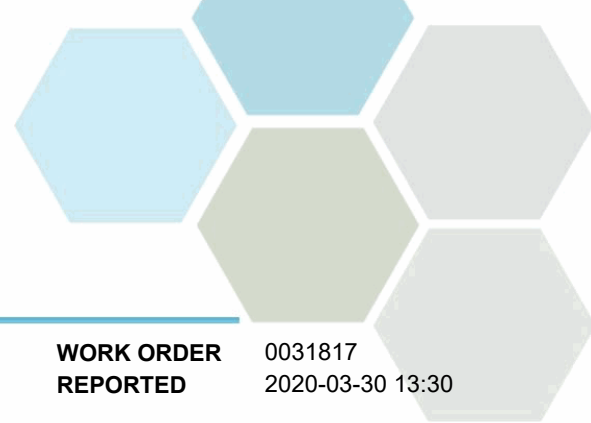
Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	53	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	83	50-140	%	2020-03-27	
Surrogate: Perylene-d12	83	50-140	%	2020-03-27	

SB3 (0031817-05) | Matrix: Water | Sampled: 2020-03-20 10:15

Anions

Chloride	9.70	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.448	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	121	1.0	mg/L	2020-03-27	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB3 (0031817-05) | Matrix: Water | Sampled: 2020-03-20 10:15, Continued

Anions, Continued

BCMOE Aggregate Hydrocarbons

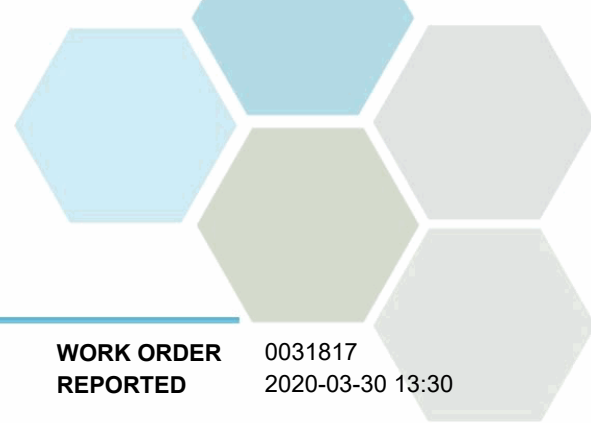
EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	90	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	310	0.500	mg/L	N/A	
Nitrate (as N)	0.448	0.0100	mg/L	N/A	

Dissolved Metals

Lithium, dissolved	0.00015	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0080	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0439	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	102	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	0.00017	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00097	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	13.5	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00502	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00080	0.00010	mg/L	2020-03-26	
Nickel, dissolved	0.00124	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.66	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	6.5	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	7.97	0.10	mg/L	2020-03-26	
Strontium, dissolved	0.217	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	41.7	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB3 (0031817-05) | Matrix: Water | Sampled: 2020-03-20 10:15, Continued

Dissolved Metals, Continued

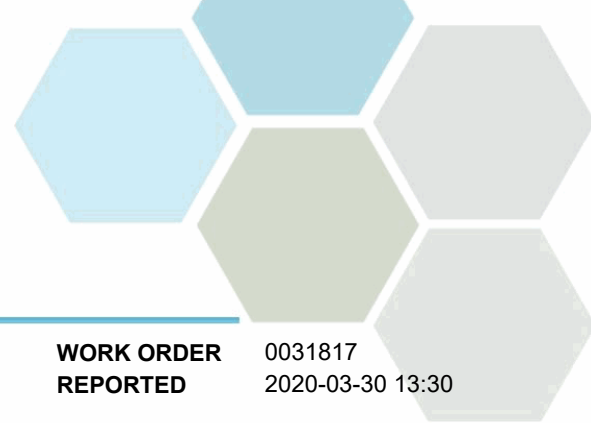
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.00179	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	208	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	208	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	533	2.0	µS/cm	2020-03-24	
pH	7.67	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	397	15	mg/L	2020-03-26	
Turbidity	83.4	0.10	NTU	2020-03-24	HT1

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	53	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	76	50-140	%	2020-03-27	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SB3 (0031817-05) | Matrix: Water | Sampled: 2020-03-20 10:15, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Surrogate: Perylene-d12	81	50-140	%	2020-03-27	
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LE-1 (0031817-06) | Matrix: Water | Sampled: 2020-03-20 11:30

BCMOE Aggregate Hydrocarbons

EPHw10-19	421	250	µg/L	2020-03-26	
EPHw19-32	2430	250	µg/L	2020-03-26	
LEPHw	421	250	µg/L	N/A	
HEPHw	2430	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	89	60-126	%	2020-03-26	

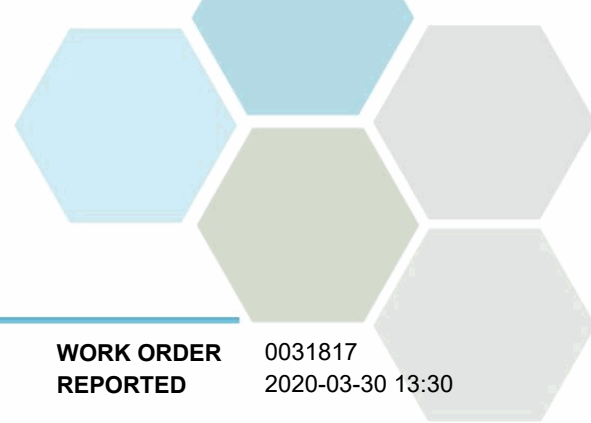
Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	92	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	87	50-140	%	2020-03-27	
Surrogate: Perylene-d12	82	50-140	%	2020-03-27	

SW1 (0031817-07) | Matrix: Water | Sampled: 2020-03-20 13:50

Anions

Chloride	8.02	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	

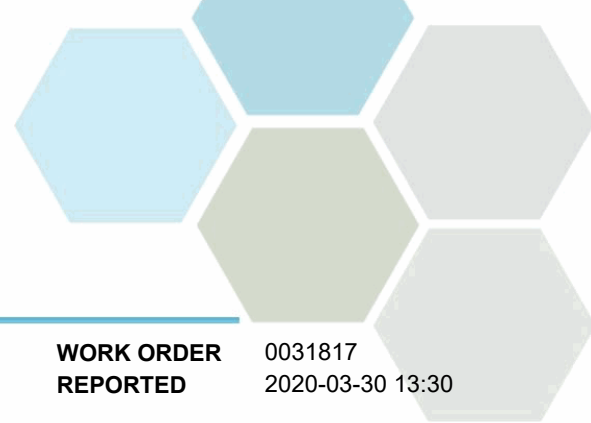


TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
SW1 (0031817-07) Matrix: Water Sampled: 2020-03-20 13:50, Continued					
<i>Anions, Continued</i>					
Nitrate+Nitrite (as N)	0.192	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	60.0	1.0	mg/L	2020-03-26	
<i>BCMOE Aggregate Hydrocarbons</i>					
EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	88	60-126	%	2020-03-26	
<i>Calculated Parameters</i>					
Hardness, Total (as CaCO3)	152	0.500	mg/L	N/A	
Nitrate (as N)	0.192	0.0100	mg/L	N/A	
<i>Dissolved Metals</i>					
Lithium, dissolved	0.00013	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0095	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0337	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	49.4	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00085	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	6.90	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00055	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00053	0.00010	mg/L	2020-03-26	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.54	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	5.0	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	5.87	0.10	mg/L	2020-03-26	
Strontium, dissolved	0.137	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	19.0	3.0	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SW1 (0031817-07) | Matrix: Water | Sampled: 2020-03-20 13:50, Continued

Dissolved Metals, Continued

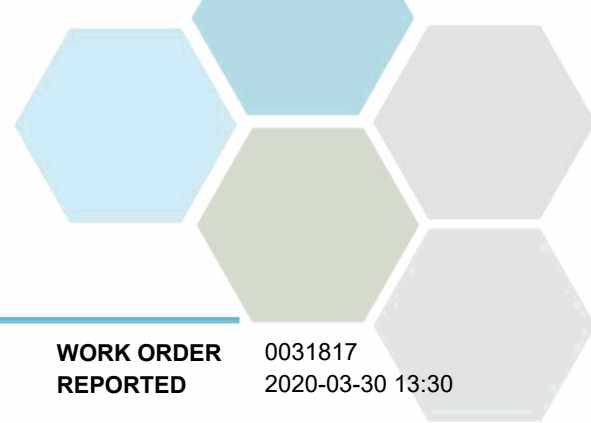
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.000662	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	110	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	110	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	290	2.0	µS/cm	2020-03-24	
pH	7.84	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	205	15	mg/L	2020-03-26	
Turbidity	1.12	0.10	NTU	2020-03-24	HT1

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	
Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	

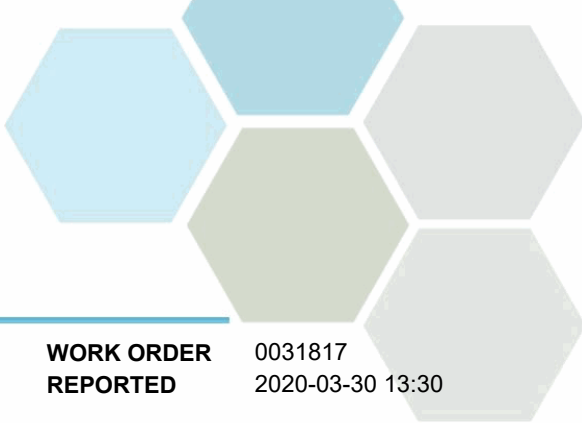


TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
SW1 (0031817-07) Matrix: Water Sampled: 2020-03-20 13:50, Continued					
<i>Polycyclic Aromatic Hydrocarbons (PAH), Continued</i>					
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	78	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	86	50-140	%	2020-03-27	
Surrogate: Perylene-d12	86	50-140	%	2020-03-27	
Total Metals					
Aluminum, total	0.0095	0.0050	mg/L	2020-03-26	
Antimony, total	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, total	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, total	0.0085	0.0050	mg/L	2020-03-26	
Beryllium, total	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, total	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, total	0.0338	0.0050	mg/L	2020-03-26	
Cadmium, total	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, total	53.2	0.20	mg/L	2020-03-26	
Chromium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, total	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, total	0.00092	0.00040	mg/L	2020-03-26	
Iron, total	< 0.010	0.010	mg/L	2020-03-26	
Lead, total	< 0.00020	0.00020	mg/L	2020-03-26	
Lithium, total	0.00015	0.00010	mg/L	2020-03-26	
Magnesium, total	7.34	0.010	mg/L	2020-03-26	
Manganese, total	0.00182	0.00020	mg/L	2020-03-26	
Molybdenum, total	0.00059	0.00010	mg/L	2020-03-26	
Nickel, total	0.00048	0.00040	mg/L	2020-03-26	
Phosphorus, total	< 0.050	0.050	mg/L	2020-03-26	
Potassium, total	0.58	0.10	mg/L	2020-03-26	
Selenium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, total	5.3	1.0	mg/L	2020-03-26	
Silver, total	0.000060	0.000050	mg/L	2020-03-26	
Sodium, total	6.24	0.10	mg/L	2020-03-26	
Strontium, total	0.146	0.0010	mg/L	2020-03-26	
Sulfur, total	23.3	3.0	mg/L	2020-03-26	
Tellurium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, total	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, total	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, total	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, total	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, total	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, total	0.000721	0.000020	mg/L	2020-03-26	
Vanadium, total	0.0013	0.0010	mg/L	2020-03-26	
Zinc, total	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, total	< 0.00010	0.00010	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SW1-X (0031817-08) | Matrix: Water | Sampled: 2020-03-20 13:55

Anions

Chloride	8.13	0.50	mg/L	2020-03-26	
Fluoride	< 0.10	0.10	mg/L	2020-03-26	
Nitrate+Nitrite (as N)	0.241	0.0050	mg/L	2020-03-24	
Nitrite (as N)	< 0.0050	0.0050	mg/L	2020-03-22	
Sulfate	60.9	1.0	mg/L	2020-03-26	

BCMOE Aggregate Hydrocarbons

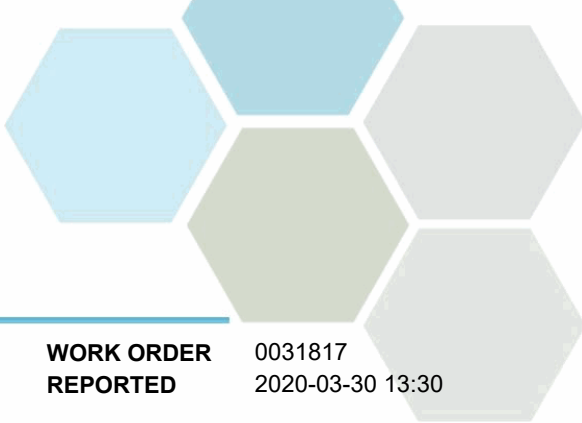
EPHw10-19	< 250	250	µg/L	2020-03-26	
EPHw19-32	< 250	250	µg/L	2020-03-26	
LEPHw	< 250	250	µg/L	N/A	
HEPHw	< 250	250	µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	87	60-126	%	2020-03-26	

Calculated Parameters

Hardness, Total (as CaCO3)	153	0.500	mg/L	N/A	
Nitrate (as N)	0.241	0.0100	mg/L	N/A	

Dissolved Metals

Lithium, dissolved	0.00013	0.00010	mg/L	2020-03-26	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, dissolved	0.0079	0.0050	mg/L	2020-03-26	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, dissolved	0.0234	0.0050	mg/L	2020-03-26	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, dissolved	49.7	0.20	mg/L	2020-03-26	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, dissolved	0.00081	0.00040	mg/L	2020-03-26	
Iron, dissolved	< 0.010	0.010	mg/L	2020-03-26	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Magnesium, dissolved	7.08	0.010	mg/L	2020-03-26	
Manganese, dissolved	0.00053	0.00020	mg/L	2020-03-26	
Molybdenum, dissolved	0.00056	0.00010	mg/L	2020-03-26	
Nickel, dissolved	< 0.00040	0.00040	mg/L	2020-03-26	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-26	
Potassium, dissolved	0.55	0.10	mg/L	2020-03-26	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, dissolved	5.2	1.0	mg/L	2020-03-26	
Silver, dissolved	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, dissolved	5.99	0.10	mg/L	2020-03-26	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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SW1-X (0031817-08) | Matrix: Water | Sampled: 2020-03-20 13:55, Continued

Dissolved Metals, Continued

Strontium, dissolved	0.139	0.0010	mg/L	2020-03-26	
Sulfur, dissolved	20.6	3.0	mg/L	2020-03-26	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, dissolved	0.000661	0.000020	mg/L	2020-03-26	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-26	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-26	

General Parameters

Alkalinity, Total (as CaCO3)	110	1.0	mg/L	2020-03-24	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Bicarbonate (as CaCO3)	110	1.0	mg/L	2020-03-24	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-24	
Conductivity (EC)	322	2.0	µS/cm	2020-03-24	
pH	7.86	0.10	pH units	2020-03-24	HT2
Solids, Total Dissolved	205	15	mg/L	2020-03-26	
Turbidity	0.22	0.10	NTU	2020-03-24	HT1

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	0.050	µg/L	2020-03-27	
Acenaphthylene	< 0.200	0.200	µg/L	2020-03-27	
Acridine	< 0.050	0.050	µg/L	2020-03-27	
Anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-03-27	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-03-27	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-03-27	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Chrysene	< 0.050	0.050	µg/L	2020-03-27	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-03-27	
Fluoranthene	< 0.030	0.030	µg/L	2020-03-27	
Fluorene	< 0.050	0.050	µg/L	2020-03-27	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-03-27	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-03-27	
Naphthalene	< 0.200	0.200	µg/L	2020-03-27	



TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
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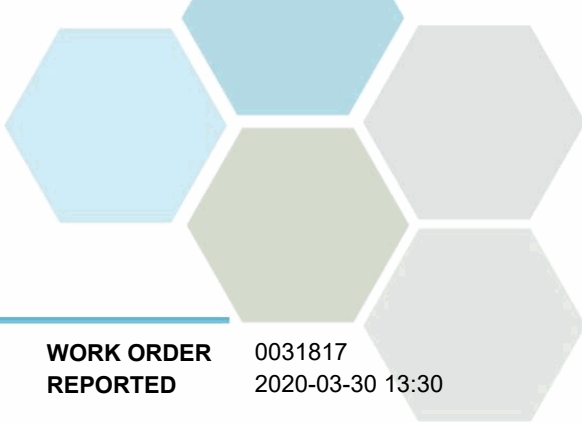
SW1-X (0031817-08) | Matrix: Water | Sampled: 2020-03-20 13:55, Continued

Polycyclic Aromatic Hydrocarbons (PAH), Continued

Phenanthrene	< 0.100	0.100	µg/L	2020-03-27	
Pyrene	< 0.020	0.020	µg/L	2020-03-27	
Quinoline	< 0.050	0.050	µg/L	2020-03-27	
Surrogate: Acridine-d9	87	50-140	%	2020-03-27	
Surrogate: Naphthalene-d8	87	50-140	%	2020-03-27	
Surrogate: Perylene-d12	88	50-140	%	2020-03-27	

Total Metals

Aluminum, total	0.0063	0.0050	mg/L	2020-03-26	
Antimony, total	< 0.00020	0.00020	mg/L	2020-03-26	
Arsenic, total	< 0.00050	0.00050	mg/L	2020-03-26	
Barium, total	0.0083	0.0050	mg/L	2020-03-26	
Beryllium, total	< 0.00010	0.00010	mg/L	2020-03-26	
Bismuth, total	< 0.00010	0.00010	mg/L	2020-03-26	
Boron, total	0.0270	0.0050	mg/L	2020-03-26	
Cadmium, total	< 0.000010	0.000010	mg/L	2020-03-26	
Calcium, total	50.2	0.20	mg/L	2020-03-26	
Chromium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Cobalt, total	< 0.00010	0.00010	mg/L	2020-03-26	
Copper, total	0.00085	0.00040	mg/L	2020-03-26	
Iron, total	< 0.010	0.010	mg/L	2020-03-26	
Lead, total	< 0.00020	0.00020	mg/L	2020-03-26	
Lithium, total	0.00015	0.00010	mg/L	2020-03-26	
Magnesium, total	7.06	0.010	mg/L	2020-03-26	
Manganese, total	0.00082	0.00020	mg/L	2020-03-26	
Molybdenum, total	0.00052	0.00010	mg/L	2020-03-26	
Nickel, total	< 0.00040	0.00040	mg/L	2020-03-26	
Phosphorus, total	< 0.050	0.050	mg/L	2020-03-26	
Potassium, total	0.55	0.10	mg/L	2020-03-26	
Selenium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Silicon, total	4.9	1.0	mg/L	2020-03-26	
Silver, total	< 0.000050	0.000050	mg/L	2020-03-26	
Sodium, total	6.00	0.10	mg/L	2020-03-26	
Strontium, total	0.137	0.0010	mg/L	2020-03-26	
Sulfur, total	21.4	3.0	mg/L	2020-03-26	
Tellurium, total	< 0.00050	0.00050	mg/L	2020-03-26	
Thallium, total	< 0.000020	0.000020	mg/L	2020-03-26	
Thorium, total	< 0.00010	0.00010	mg/L	2020-03-26	
Tin, total	< 0.00020	0.00020	mg/L	2020-03-26	
Titanium, total	< 0.0050	0.0050	mg/L	2020-03-26	
Tungsten, total	< 0.0010	0.0010	mg/L	2020-03-26	
Uranium, total	0.000661	0.000020	mg/L	2020-03-26	
Vanadium, total	0.0015	0.0010	mg/L	2020-03-26	



TEST RESULTS

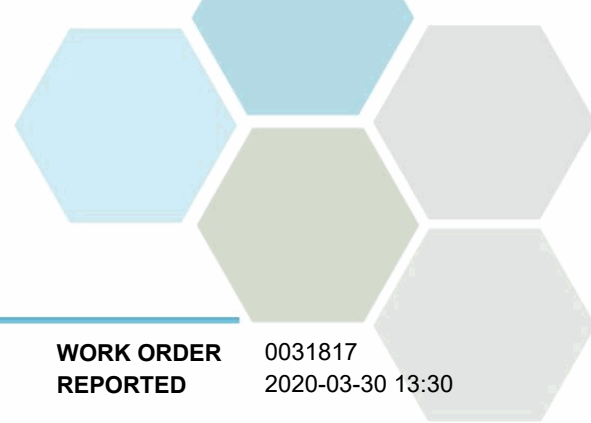
REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL	Units	Analyzed	Qualifier
SW1-X (0031817-08) Matrix: Water Sampled: 2020-03-20 13:55, Continued					
<i>Total Metals, Continued</i>					
Zinc, total	< 0.0040	0.0040	mg/L	2020-03-26	
Zirconium, total	< 0.00010	0.00010	mg/L	2020-03-26	

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 PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

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	Edmonton
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
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
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

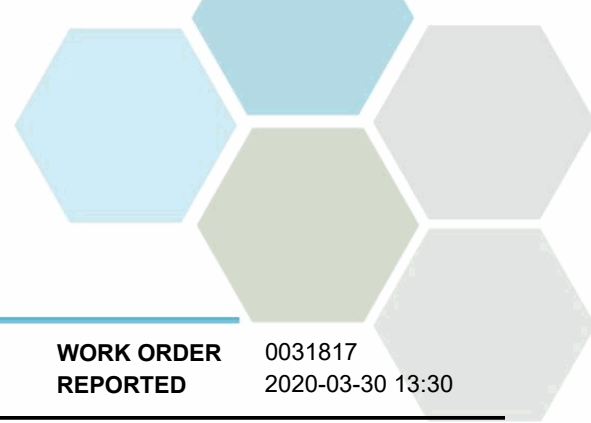
Glossary of Terms:

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 PROJECT Allterra Construction
P17-932

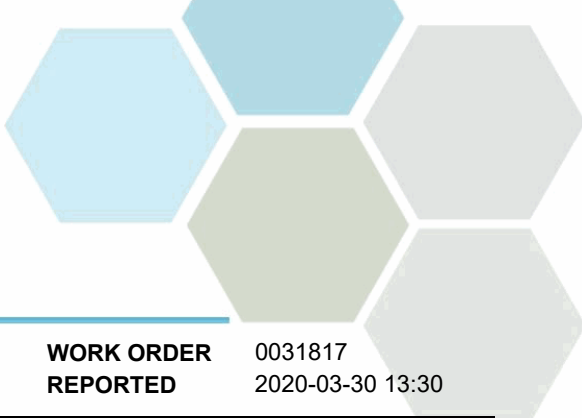
WORK ORDER REPORTED 0031817
2020-03-30 13:30

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 B0C1671									
Blank (B0C1671-BLK1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Nitrate+Nitrite (as N)	< 0.0050	0.0050 mg/L							
Blank (B0C1671-BLK2)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Nitrate+Nitrite (as N)	< 0.0050	0.0050 mg/L							
LCS (B0C1671-BS1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Nitrate+Nitrite (as N)	0.513	0.0050 mg/L	0.500		103	91-108			
LCS (B0C1671-BS2)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Nitrate+Nitrite (as N)	0.508	0.0050 mg/L	0.500		102	91-108			
Anions, Batch B0C1920									
Blank (B0C1920-BLK1)			Prepared: 2020-03-22, Analyzed: 2020-03-22						
Nitrite (as N)	< 0.0050	0.0050 mg/L							
LCS (B0C1920-BS1)			Prepared: 2020-03-22, Analyzed: 2020-03-22						
Nitrite (as N)	0.0479	0.0050 mg/L	0.0500		96	90-110			
Duplicate (B0C1920-DUP1)			Source: 0031817-01		Prepared: 2020-03-22, Analyzed: 2020-03-22				
Nitrite (as N)	0.0070	0.0050 mg/L		0.0070				10	
Anions, Batch B0C2262									
Blank (B0C2262-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Chloride	< 0.50	0.50 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Sulfate	< 1.0	1.0 mg/L							
Blank (B0C2262-BLK2)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Chloride	< 0.50	0.50 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Sulfate	< 1.0	1.0 mg/L							



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Anions, Batch B0C2262, Continued

LCS (B0C2262-BS1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Chloride	10.1	0.50 mg/L	10.0		101	90-110			
Fluoride	1.01	0.10 mg/L	1.00		101	85-115			
Sulfate	50.6	1.0 mg/L	50.0		101	90-110			
LCS (B0C2262-BS2)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Chloride	10.9	0.50 mg/L	10.0		109	90-110			
Fluoride	1.05	0.10 mg/L	1.00		105	85-115			
Sulfate	54.6	1.0 mg/L	50.0		109	90-110			

BCMOE Aggregate Hydrocarbons, Batch B0C2113

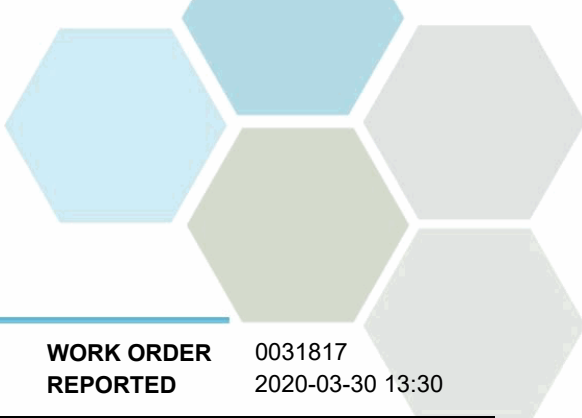
Blank (B0C2113-BLK1)			Prepared: 2020-03-25, Analyzed: 2020-03-25						
EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							
Surrogate: 2-Methylnonane (EPH/F2-4)	299	µg/L	444		67	60-126			
LCS (B0C2113-BS2)			Prepared: 2020-03-25, Analyzed: 2020-03-26						
EPHw10-19	13700	250 µg/L	15500		89	70-117			
EPHw19-32	20000	250 µg/L	22400		89	70-113			
Surrogate: 2-Methylnonane (EPH/F2-4)	309	µg/L	444		70	60-126			
LCS Dup (B0C2113-BSD2)			Prepared: 2020-03-25, Analyzed: 2020-03-26						
EPHw10-19	11400	250 µg/L	15500		73	70-117	19	20	
EPHw19-32	16100	250 µg/L	22400		72	70-113	21	20	RPD
Surrogate: 2-Methylnonane (EPH/F2-4)	271	µg/L	444		61	60-126			

BCMOE Aggregate Hydrocarbons, Batch B0C2237

Blank (B0C2237-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							
Surrogate: 2-Methylnonane (EPH/F2-4)	363	µg/L	444		82	60-126			
LCS (B0C2237-BS2)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
EPHw10-19	14800	250 µg/L	15500		96	70-117			
EPHw19-32	21100	250 µg/L	22400		94	70-113			
Surrogate: 2-Methylnonane (EPH/F2-4)	387	µg/L	444		87	60-126			
LCS Dup (B0C2237-BSD2)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
EPHw10-19	12800	250 µg/L	15500		83	70-117	15	20	
EPHw19-32	18500	250 µg/L	22400		82	70-113	13	20	
Surrogate: 2-Methylnonane (EPH/F2-4)	405	µg/L	444		91	60-126			

Dissolved Metals, Batch B0C2244

Blank (B0C2244-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
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							



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Dissolved Metals, Batch B0C2244, Continued

Blank (B0C2244-BLK1), Continued

Prepared: 2020-03-26, Analyzed: 2020-03-26

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							
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 (B0C2244-BS1)

Prepared: 2020-03-26, Analyzed: 2020-03-26

Lithium, dissolved	0.0219	0.00010 mg/L	0.0200		110	80-120			
Aluminum, dissolved	0.0204	0.0050 mg/L	0.0199		103	80-120			
Antimony, dissolved	0.0199	0.00020 mg/L	0.0200		99	80-120			
Arsenic, dissolved	0.0208	0.00050 mg/L	0.0200		104	80-120			
Barium, dissolved	0.0209	0.0050 mg/L	0.0198		106	80-120			
Beryllium, dissolved	0.0217	0.00010 mg/L	0.0198		110	80-120			
Bismuth, dissolved	0.0217	0.00010 mg/L	0.0200		109	80-120			
Boron, dissolved	0.0177	0.0050 mg/L	0.0200		88	80-120			
Cadmium, dissolved	0.0211	0.000010 mg/L	0.0199		106	80-120			
Calcium, dissolved	2.25	0.20 mg/L	2.02		111	80-120			
Chromium, dissolved	0.0210	0.00050 mg/L	0.0198		106	80-120			
Cobalt, dissolved	0.0211	0.00010 mg/L	0.0199		106	80-120			
Copper, dissolved	0.0218	0.00040 mg/L	0.0200		109	80-120			
Iron, dissolved	2.14	0.010 mg/L	2.02		106	80-120			
Lead, dissolved	0.0212	0.00020 mg/L	0.0199		107	80-120			
Magnesium, dissolved	2.02	0.010 mg/L	2.02		100	80-120			
Manganese, dissolved	0.0203	0.00020 mg/L	0.0199		102	80-120			
Molybdenum, dissolved	0.0203	0.00010 mg/L	0.0200		101	80-120			
Nickel, dissolved	0.0214	0.00040 mg/L	0.0200		107	80-120			
Phosphorus, dissolved	2.09	0.050 mg/L	2.00		104	80-120			
Potassium, dissolved	1.94	0.10 mg/L	2.02		96	80-120			
Selenium, dissolved	0.0220	0.00050 mg/L	0.0200		110	80-120			
Silicon, dissolved	2.1	1.0 mg/L	2.00		107	80-120			
Silver, dissolved	0.0203	0.000050 mg/L	0.0200		101	80-120			
Sodium, dissolved	2.10	0.10 mg/L	2.02		104	80-120			

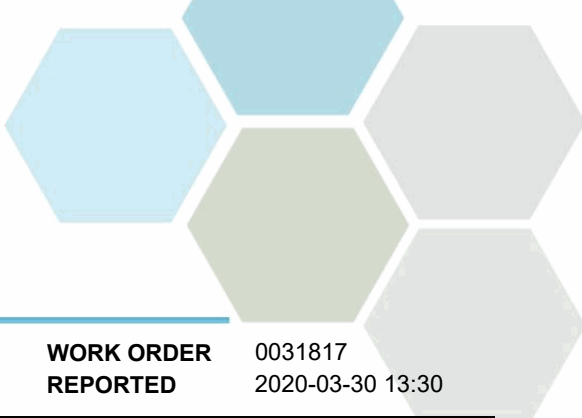


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C2244, Continued									
LCS (B0C2244-BS1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Strontium, dissolved	0.0203	0.0010 mg/L	0.0200		101	80-120			
Sulfur, dissolved	4.4	3.0 mg/L	5.00		88	80-120			
Tellurium, dissolved	0.0197	0.00050 mg/L	0.0200		98	80-120			
Thallium, dissolved	0.0216	0.000020 mg/L	0.0199		109	80-120			
Thorium, dissolved	0.0209	0.00010 mg/L	0.0200		105	80-120			
Tin, dissolved	0.0208	0.00020 mg/L	0.0200		104	80-120			
Titanium, dissolved	0.0208	0.0050 mg/L	0.0200		104	80-120			
Tungsten, dissolved	0.0213	0.0010 mg/L	0.0200		107	80-120			
Uranium, dissolved	0.0215	0.000020 mg/L	0.0200		108	80-120			
Vanadium, dissolved	0.0207	0.0010 mg/L	0.0200		104	80-120			
Zinc, dissolved	0.0210	0.0040 mg/L	0.0200		105	80-120			
Zirconium, dissolved	0.0198	0.00010 mg/L	0.0200		99	80-120			
Duplicate (B0C2244-DUP1)					Source: 0031817-01 Prepared: 2020-03-26, Analyzed: 2020-03-26				
Lithium, dissolved	0.00573	0.00010 mg/L		0.00577			< 1	14	
Aluminum, dissolved	0.0107	0.0050 mg/L		0.0098				11	
Antimony, dissolved	0.00039	0.00020 mg/L		0.00031				20	
Arsenic, dissolved	0.00212	0.00050 mg/L		0.00207				8	
Barium, dissolved	0.0095	0.0050 mg/L		0.0096				7	
Beryllium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				14	
Bismuth, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Boron, dissolved	0.101	0.0050 mg/L		0.102			< 1	13	
Cadmium, dissolved	< 0.000010	0.000010 mg/L		< 0.000010				20	
Calcium, dissolved	26.1	0.20 mg/L		26.0			< 1	8	
Chromium, dissolved	< 0.00050	0.00050 mg/L		< 0.00050				14	
Cobalt, dissolved	0.00014	0.00010 mg/L		0.00014				10	
Copper, dissolved	0.00105	0.00040 mg/L		0.00097				20	
Iron, dissolved	< 0.010	0.010 mg/L		< 0.010				14	
Lead, dissolved	< 0.00020	0.00020 mg/L		< 0.00020				20	
Magnesium, dissolved	3.80	0.010 mg/L		3.83			1	6	
Manganese, dissolved	0.0625	0.00020 mg/L		0.0648			4	9	
Molybdenum, dissolved	0.0123	0.00010 mg/L		0.0122			1	19	
Nickel, dissolved	0.00098	0.00040 mg/L		0.00097				20	
Phosphorus, dissolved	< 0.050	0.050 mg/L		< 0.050				14	
Potassium, dissolved	1.23	0.10 mg/L		1.26			2	8	
Selenium, dissolved	< 0.00050	0.00050 mg/L		< 0.00050				20	
Silicon, dissolved	5.2	1.0 mg/L		5.4			4	12	
Silver, dissolved	< 0.000050	0.000050 mg/L		< 0.000050				20	
Sodium, dissolved	49.7	0.10 mg/L		50.7			2	6	
Strontium, dissolved	0.122	0.0010 mg/L		0.124			2	6	
Sulfur, dissolved	14.9	3.0 mg/L		15.7			6	20	
Tellurium, dissolved	< 0.00050	0.00050 mg/L		< 0.00050				20	
Thallium, dissolved	< 0.000020	0.000020 mg/L		< 0.000020				13	
Thorium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Tin, dissolved	0.00023	0.00020 mg/L		< 0.00020				20	
Titanium, dissolved	< 0.0050	0.0050 mg/L		< 0.0050				20	
Tungsten, dissolved	0.104	0.0010 mg/L		0.106			2	20	
Uranium, dissolved	0.00287	0.000020 mg/L		0.00294			2	14	
Vanadium, dissolved	< 0.0010	0.0010 mg/L		< 0.0010				20	
Zinc, dissolved	< 0.0040	0.0040 mg/L		< 0.0040				11	
Zirconium, dissolved	< 0.00010	0.00010 mg/L		< 0.00010				20	
Reference (B0C2244-SRM1)					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Lithium, dissolved	0.112	0.00010 mg/L	0.100		112	77-127			
Aluminum, dissolved	0.222	0.0050 mg/L	0.235		95	79-114			
Antimony, dissolved	0.0464	0.00020 mg/L	0.0431		108	89-123			



APPENDIX 2: QUALITY CONTROL RESULTS

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WORK ORDER REPORTED 0031817
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C2244, Continued									
Reference (B0C2244-SRM1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Arsenic, dissolved	0.465	0.00050 mg/L	0.423		110	87-113			
Barium, dissolved	3.24	0.0050 mg/L	3.30		98	85-114			
Beryllium, dissolved	0.229	0.00010 mg/L	0.209		109	79-122			
Boron, dissolved	1.49	0.0050 mg/L	1.65		90	79-117			
Cadmium, dissolved	0.234	0.000010 mg/L	0.221		106	89-112			
Calcium, dissolved	7.85	0.20 mg/L	7.72		102	85-120			
Chromium, dissolved	0.473	0.00050 mg/L	0.434		109	87-113			
Cobalt, dissolved	0.134	0.00010 mg/L	0.124		108	90-117			
Copper, dissolved	0.903	0.00040 mg/L	0.815		111	90-115			
Iron, dissolved	1.40	0.010 mg/L	1.27		110	86-112			
Lead, dissolved	0.119	0.00020 mg/L	0.110		108	90-113			
Magnesium, dissolved	6.83	0.010 mg/L	6.59		104	84-116			
Manganese, dissolved	0.347	0.00020 mg/L	0.342		101	85-113			
Molybdenum, dissolved	0.429	0.00010 mg/L	0.404		106	87-112			
Nickel, dissolved	0.895	0.00040 mg/L	0.835		107	90-114			
Phosphorus, dissolved	0.532	0.050 mg/L	0.499		107	74-119			
Potassium, dissolved	2.89	0.10 mg/L	2.88		100	78-119			
Selenium, dissolved	0.0375	0.00050 mg/L	0.0324		116	89-123			
Sodium, dissolved	18.0	0.10 mg/L	18.0		100	81-117			
Strontium, dissolved	0.954	0.0010 mg/L	0.935		102	82-111			
Thallium, dissolved	0.0421	0.000020 mg/L	0.0385		109	90-113			
Uranium, dissolved	0.262	0.000020 mg/L	0.258		102	87-113			
Vanadium, dissolved	0.910	0.0010 mg/L	0.873		104	85-110			
Zinc, dissolved	0.913	0.0040 mg/L	0.848		108	88-114			

General Parameters, Batch B0C1973

Blank (B0C1973-BLK1)			Prepared: 2020-03-24, Analyzed: 2020-03-24		
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 (B0C1973-BLK2)			Prepared: 2020-03-24, Analyzed: 2020-03-24		
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 (B0C1973-BS1)			Prepared: 2020-03-24, Analyzed: 2020-03-24		
Alkalinity, Total (as CaCO3)	112	1.0 mg/L	100	112	80-120
LCS (B0C1973-BS2)			Prepared: 2020-03-24, Analyzed: 2020-03-24		
Alkalinity, Total (as CaCO3)	108	1.0 mg/L	100	108	80-120
LCS (B0C1973-BS3)			Prepared: 2020-03-24, Analyzed: 2020-03-24		
Conductivity (EC)	1410	2.0 µS/cm	1410	100	95-104
LCS (B0C1973-BS4)			Prepared: 2020-03-24, Analyzed: 2020-03-24		
Conductivity (EC)	1410	2.0 µS/cm	1410	100	95-104

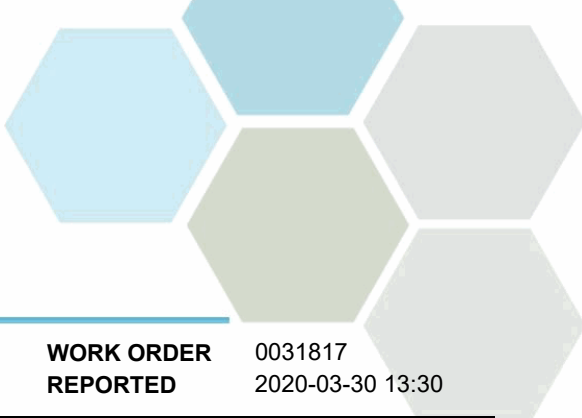


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
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WORK ORDER REPORTED 0031817
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0C1973, Continued									
Reference (B0C1973-SRM1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
pH	6.95	0.10 pH units	7.01		99	98-102			
Reference (B0C1973-SRM2)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
pH	6.97	0.10 pH units	7.01		99	98-102			
General Parameters, Batch B0C2015									
Blank (B0C2015-BLK1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Turbidity	< 0.10	0.10 NTU							
LCS (B0C2015-BS1)			Prepared: 2020-03-24, Analyzed: 2020-03-24						
Turbidity	37.9	0.10 NTU	40.0		95	90-110			
Duplicate (B0C2015-DUP1)			Source: 0031817-01		Prepared: 2020-03-24, Analyzed: 2020-03-24				
Turbidity	261	0.10 NTU		257			2	15	
General Parameters, Batch B0C2184									
Blank (B0C2184-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Solids, Total Dissolved	< 15	15 mg/L							
LCS (B0C2184-BS1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
Solids, Total Dissolved	240	15 mg/L	240		100	85-115			
Duplicate (B0C2184-DUP1)			Source: 0031817-02		Prepared: 2020-03-26, Analyzed: 2020-03-26				
Solids, Total Dissolved	320	15 mg/L		306			4	15	
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0C2113									
Blank (B0C2113-BLK1)			Prepared: 2020-03-25, Analyzed: 2020-03-26						
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	2.62	µg/L	4.47		59	50-140			
Surrogate: Naphthalene-d8	2.74	µg/L	4.44		62	50-140			
Surrogate: Perylene-d12	3.79	µg/L	4.44		85	50-140			



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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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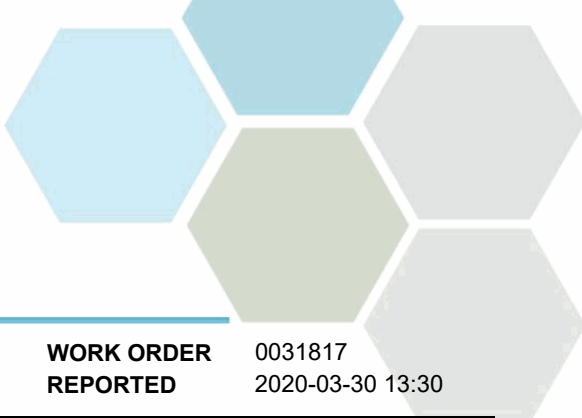
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0C2113, Continued

LCS (B0C2113-BS1)			Prepared: 2020-03-25, Analyzed: 2020-03-26						
Acenaphthene	4.34	0.050 µg/L	4.44		98	55-137			
Acenaphthylene	4.60	0.200 µg/L	4.44		104	53-140			
Acridine	3.73	0.050 µg/L	4.24		88	50-120			
Anthracene	4.48	0.010 µg/L	4.44		101	64-130			
Benz(a)anthracene	4.18	0.010 µg/L	4.44		94	57-140			
Benzo(a)pyrene	4.32	0.010 µg/L	4.44		97	63-133			
Benzo(b+j)fluoranthene	8.09	0.050 µg/L	8.89		91	60-129			
Benzo(g,h,i)perylene	4.73	0.050 µg/L	4.44		106	52-139			
Benzo(k)fluoranthene	3.75	0.050 µg/L	4.44		84	50-138			
2-Chloronaphthalene	5.12	0.100 µg/L	4.76		108	50-139			
Chrysene	4.22	0.050 µg/L	4.44		95	59-140			
Dibenz(a,h)anthracene	4.62	0.010 µg/L	4.44		104	53-136			
Fluoranthene	4.83	0.030 µg/L	4.44		109	67-135			
Fluorene	4.45	0.050 µg/L	4.44		100	57-134			
Indeno(1,2,3-cd)pyrene	4.68	0.050 µg/L	4.44		105	52-129			
1-Methylnaphthalene	3.99	0.100 µg/L	4.44		90	50-140			
2-Methylnaphthalene	4.10	0.100 µg/L	4.44		92	50-140			
Naphthalene	3.89	0.200 µg/L	4.44		87	50-140			
Phenanthrene	4.89	0.100 µg/L	4.44		110	61-134			
Pyrene	4.83	0.020 µg/L	4.44		109	66-131			
Quinoline	5.73	0.050 µg/L	4.31		133	50-140			
Surrogate: Acridine-d9	3.89	µg/L	4.47		87	50-140			
Surrogate: Naphthalene-d8	3.98	µg/L	4.44		90	50-140			
Surrogate: Perylene-d12	3.92	µg/L	4.44		88	50-140			

LCS Dup (B0C2113-BS1)			Prepared: 2020-03-25, Analyzed: 2020-03-26						
Acenaphthene	4.15	0.050 µg/L	4.44		93	55-137	5	18	
Acenaphthylene	4.38	0.200 µg/L	4.44		99	53-140	5	20	
Acridine	2.83	0.050 µg/L	4.24		67	50-120	27	30	
Anthracene	4.28	0.010 µg/L	4.44		96	64-130	5	15	
Benz(a)anthracene	4.05	0.010 µg/L	4.44		91	57-140	3	25	
Benzo(a)pyrene	4.12	0.010 µg/L	4.44		93	63-133	5	18	
Benzo(b+j)fluoranthene	7.81	0.050 µg/L	8.89		88	60-129	4	17	
Benzo(g,h,i)perylene	4.46	0.050 µg/L	4.44		100	52-139	6	22	
Benzo(k)fluoranthene	3.56	0.050 µg/L	4.44		80	50-138	5	26	
2-Chloronaphthalene	4.82	0.100 µg/L	4.76		101	50-139	6	23	
Chrysene	4.07	0.050 µg/L	4.44		92	59-140	4	23	
Dibenz(a,h)anthracene	4.36	0.010 µg/L	4.44		98	53-136	6	21	
Fluoranthene	4.59	0.030 µg/L	4.44		103	67-135	5	18	
Fluorene	4.29	0.050 µg/L	4.44		96	57-134	4	18	
Indeno(1,2,3-cd)pyrene	4.41	0.050 µg/L	4.44		99	52-129	6	21	
1-Methylnaphthalene	3.80	0.100 µg/L	4.44		86	50-140	5	20	
2-Methylnaphthalene	3.90	0.100 µg/L	4.44		88	50-140	5	21	
Naphthalene	3.68	0.200 µg/L	4.44		83	50-140	5	22	
Phenanthrene	4.62	0.100 µg/L	4.44		104	61-134	6	17	
Pyrene	4.55	0.020 µg/L	4.44		102	66-131	6	19	
Quinoline	5.98	0.050 µg/L	4.31		139	50-140	4	14	
Surrogate: Acridine-d9	2.77	µg/L	4.47		62	50-140			
Surrogate: Naphthalene-d8	3.70	µg/L	4.44		83	50-140			
Surrogate: Perylene-d12	3.65	µg/L	4.44		82	50-140			

Polycyclic Aromatic Hydrocarbons (PAH), Batch B0C2237

Blank (B0C2237-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-27						
Acenaphthene	< 0.050	0.050 µg/L							

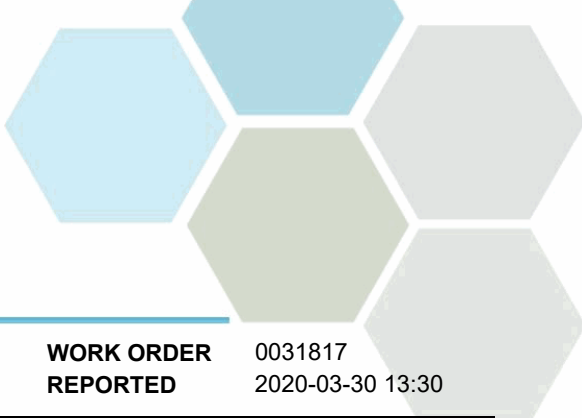


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0C2237, Continued									
Blank (B0C2237-BLK1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-27				
Acenaphthylene	< 0.200	0.200 µg/L							
Acridine	< 0.050	0.050 µg/L							
Anthracene	< 0.010	0.010 µg/L							
Benzo(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	0.020	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	2.38	µg/L	4.31		55	50-140			
Surrogate: Naphthalene-d8	3.17	µg/L	4.47		71	50-140			
Surrogate: Perylene-d12	3.50	µg/L	4.47		78	50-140			
LCS (B0C2237-BS1)					Prepared: 2020-03-26, Analyzed: 2020-03-27				
Acenaphthene	4.34	0.050 µg/L	4.44		98	55-137			
Acenaphthylene	4.58	0.200 µg/L	4.44		103	53-140			
Acridine	3.60	0.050 µg/L	4.24		85	50-120			
Anthracene	4.53	0.010 µg/L	4.44		102	64-130			
Benzo(a)anthracene	4.36	0.010 µg/L	4.44		98	57-140			
Benzo(a)pyrene	4.50	0.010 µg/L	4.44		101	63-133			
Benzo(b+j)fluoranthene	8.76	0.050 µg/L	8.89		99	60-129			
Benzo(g,h,i)perylene	4.92	0.050 µg/L	4.44		111	52-139			
Benzo(k)fluoranthene	3.84	0.050 µg/L	4.44		86	50-138			
2-Chloronaphthalene	5.25	0.100 µg/L	4.76		110	50-139			
Chrysene	4.40	0.050 µg/L	4.44		99	59-140			
Dibenz(a,h)anthracene	4.70	0.010 µg/L	4.44		106	53-136			
Fluoranthene	4.91	0.030 µg/L	4.44		110	67-135			
Fluorene	4.40	0.050 µg/L	4.44		99	57-134			
Indeno(1,2,3-cd)pyrene	4.84	0.050 µg/L	4.44		109	52-129			
1-Methylnaphthalene	4.05	0.100 µg/L	4.44		91	50-140			
2-Methylnaphthalene	4.07	0.100 µg/L	4.44		91	50-140			
Naphthalene	3.87	0.200 µg/L	4.44		87	50-140			
Phenanthrene	4.88	0.100 µg/L	4.44		110	61-134			
Pyrene	4.94	0.020 µg/L	4.44		111	66-131			
Quinoline	5.70	0.050 µg/L	4.31		132	50-140			
Surrogate: Acridine-d9	3.54	µg/L	4.31		82	50-140			
Surrogate: Naphthalene-d8	3.91	µg/L	4.47		88	50-140			
Surrogate: Perylene-d12	3.97	µg/L	4.47		89	50-140			
LCS Dup (B0C2237-BSD1)					Prepared: 2020-03-26, Analyzed: 2020-03-27				
Acenaphthene	4.44	0.050 µg/L	4.44		100	55-137	2	18	
Acenaphthylene	4.69	0.200 µg/L	4.44		105	53-140	2	20	
Acridine	3.64	0.050 µg/L	4.24		86	50-120	1	30	
Anthracene	4.50	0.010 µg/L	4.44		101	64-130	< 1	15	
Benzo(a)anthracene	3.95	0.010 µg/L	4.44		89	57-140	10	25	



APPENDIX 2: QUALITY CONTROL RESULTS

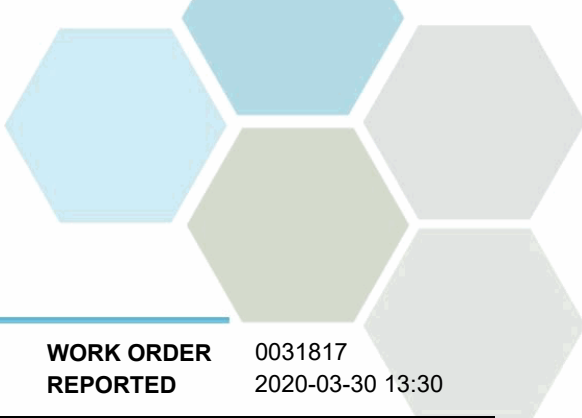
REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0C2237, Continued									
LCS Dup (B0C2237-BSD1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-27				
Benzo(a)pyrene	4.09	0.010 µg/L	4.44		92	63-133	10	18	
Benzo(b+j)fluoranthene	7.91	0.050 µg/L	8.89		89	60-129	10	17	
Benzo(g,h,i)perylene	4.55	0.050 µg/L	4.44		102	52-139	8	22	
Benzo(k)fluoranthene	3.48	0.050 µg/L	4.44		78	50-138	10	26	
2-Chloronaphthalene	5.31	0.100 µg/L	4.76		112	50-139	1	23	
Chrysene	4.00	0.050 µg/L	4.44		90	59-140	9	23	
Dibenz(a,h)anthracene	4.36	0.010 µg/L	4.44		98	53-136	7	21	
Fluoranthene	4.66	0.030 µg/L	4.44		105	67-135	5	18	
Fluorene	4.51	0.050 µg/L	4.44		102	57-134	3	18	
Indeno(1,2,3-cd)pyrene	4.46	0.050 µg/L	4.44		100	52-129	8	21	
1-Methylnaphthalene	4.09	0.100 µg/L	4.44		92	50-140	< 1	20	
2-Methylnaphthalene	4.16	0.100 µg/L	4.44		94	50-140	2	21	
Naphthalene	3.96	0.200 µg/L	4.44		89	50-140	2	22	
Phenanthrene	4.87	0.100 µg/L	4.44		110	61-134	< 1	17	
Pyrene	4.62	0.020 µg/L	4.44		104	66-131	7	19	
Quinoline	5.92	0.050 µg/L	4.31		137	50-140	4	14	
Surrogate: Acridine-d9	3.70	µg/L	4.31		86	50-140			
Surrogate: Naphthalene-d8	4.03	µg/L	4.47		90	50-140			
Surrogate: Perylene-d12	3.65	µg/L	4.47		82	50-140			

Total Metals, Batch B0C2245

Blank (B0C2245-BLK1)			Prepared: 2020-03-26, Analyzed: 2020-03-26						
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							

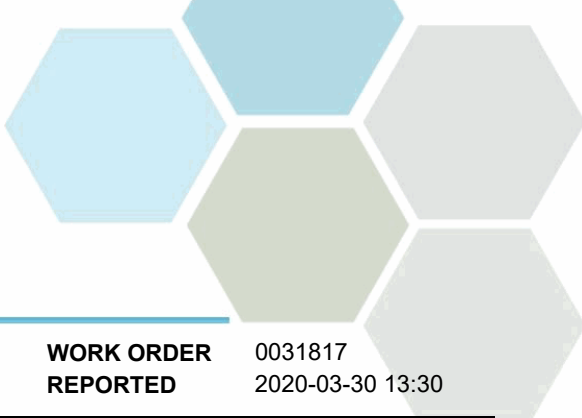


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B0C2245, Continued									
Blank (B0C2245-BLK1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-26				
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 (B0C2245-BS1)					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Aluminum, total	0.0204	0.0050 mg/L	0.0199		102	80-120			
Antimony, total	0.0204	0.00020 mg/L	0.0200		102	80-120			
Arsenic, total	0.0212	0.00050 mg/L	0.0200		106	80-120			
Barium, total	0.0205	0.0050 mg/L	0.0198		103	80-120			
Beryllium, total	0.0214	0.00010 mg/L	0.0198		108	80-120			
Bismuth, total	0.0220	0.00010 mg/L	0.0200		110	80-120			
Boron, total	0.0181	0.0050 mg/L	0.0200		91	80-120			
Cadmium, total	0.0211	0.000010 mg/L	0.0199		106	80-120			
Calcium, total	2.28	0.20 mg/L	2.02		113	80-120			
Chromium, total	0.0209	0.00050 mg/L	0.0198		105	80-120			
Cobalt, total	0.0213	0.00010 mg/L	0.0199		107	80-120			
Copper, total	0.0215	0.00040 mg/L	0.0200		107	80-120			
Iron, total	2.15	0.010 mg/L	2.02		106	80-120			
Lead, total	0.0221	0.00020 mg/L	0.0199		111	80-120			
Lithium, total	0.0220	0.00010 mg/L	0.0200		110	80-120			
Magnesium, total	2.03	0.010 mg/L	2.02		100	80-120			
Manganese, total	0.0203	0.00020 mg/L	0.0199		102	80-120			
Molybdenum, total	0.0203	0.00010 mg/L	0.0200		101	80-120			
Nickel, total	0.0214	0.00040 mg/L	0.0200		107	80-120			
Phosphorus, total	2.04	0.050 mg/L	2.00		102	80-120			
Potassium, total	1.94	0.10 mg/L	2.02		96	80-120			
Selenium, total	0.0220	0.00050 mg/L	0.0200		110	80-120			
Silicon, total	2.1	1.0 mg/L	2.00		107	80-120			
Silver, total	0.0208	0.000050 mg/L	0.0200		104	80-120			
Sodium, total	2.04	0.10 mg/L	2.02		101	80-120			
Strontium, total	0.0203	0.0010 mg/L	0.0200		102	80-120			
Sulfur, total	4.9	3.0 mg/L	5.00		98	80-120			
Tellurium, total	0.0201	0.00050 mg/L	0.0200		101	80-120			
Thallium, total	0.0218	0.000020 mg/L	0.0199		110	80-120			
Thorium, total	0.0214	0.00010 mg/L	0.0200		107	80-120			
Tin, total	0.0210	0.00020 mg/L	0.0200		105	80-120			
Titanium, total	0.0196	0.0050 mg/L	0.0200		98	80-120			
Tungsten, total	0.0209	0.0010 mg/L	0.0200		105	80-120			
Uranium, total	0.0216	0.000020 mg/L	0.0200		108	80-120			
Vanadium, total	0.0216	0.0010 mg/L	0.0200		108	80-120			
Zinc, total	0.0235	0.0040 mg/L	0.0200		118	80-120			
Zirconium, total	0.0201	0.00010 mg/L	0.0200		101	80-120			
Reference (B0C2245-SRM1)					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Aluminum, total	0.293	0.0050 mg/L	0.303		97	82-114			
Antimony, total	0.0529	0.00020 mg/L	0.0511		104	88-115			
Arsenic, total	0.127	0.00050 mg/L	0.118		108	88-111			
Barium, total	0.827	0.0050 mg/L	0.823		100	83-110			
Beryllium, total	0.0535	0.00010 mg/L	0.0496		108	80-119			
Boron, total	3.45	0.0050 mg/L	3.45		100	80-118			
Cadmium, total	0.0524	0.000010 mg/L	0.0495		106	90-110			
Calcium, total	11.0	0.20 mg/L	11.6		95	85-113			
Chromium, total	0.265	0.00050 mg/L	0.250		106	88-111			
Cobalt, total	0.0414	0.00010 mg/L	0.0377		110	90-114			



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031817
2020-03-30 13:30

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B0C2245, Continued									
Reference (B0C2245-SRM1), Continued					Prepared: 2020-03-26, Analyzed: 2020-03-26				
Copper, total	0.549	0.00040 mg/L	0.486		113	90-117			
Iron, total	0.549	0.010 mg/L	0.488		113	90-116			
Lead, total	0.213	0.00020 mg/L	0.204		104	90-110			
Lithium, total	0.437	0.00010 mg/L	0.403		108	79-118			
Magnesium, total	4.00	0.010 mg/L	3.79		106	88-116			
Manganese, total	0.111	0.00020 mg/L	0.109		102	88-108			
Molybdenum, total	0.204	0.00010 mg/L	0.198		103	88-110			
Nickel, total	0.268	0.00040 mg/L	0.249		108	90-112			
Phosphorus, total	0.239	0.050 mg/L	0.227		105	72-118			
Potassium, total	7.36	0.10 mg/L	7.21		102	87-116			
Selenium, total	0.135	0.00050 mg/L	0.121		111	90-122			
Sodium, total	7.51	0.10 mg/L	7.54		100	86-118			
Strontium, total	0.385	0.0010 mg/L	0.375		103	86-110			
Thallium, total	0.0877	0.000020 mg/L	0.0805		109	90-113			
Uranium, total	0.0316	0.000020 mg/L	0.0306		103	88-112			
Vanadium, total	0.398	0.0010 mg/L	0.386		103	87-110			
Zinc, total	2.66	0.0040 mg/L	2.49		107	90-113			

QC Qualifiers:

- BLK Analyte concentration in the Method Blank is above the Reporting Limit (RL).
- RPD Relative percent difference (RPD) of duplicate analysis are outside of control limits for unknown reason(s).



1-8846

IC V6V 2K9
BC V1X 5C3
AB T5S 1H7

CHAIN OF CUSTODY RECORD

COC# MARCH 2020 PAGE 1 OF 1

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
EMAIL 1:
EMAIL 2:
EMAIL 3:
EQuIS BC EMS OTHER*

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

RELINQUISHED BY: [Signature] DATE: MAR 20 2020 RECEIVED BY: AGB Novex DATE: 21/03/20
TIME: 16:00 TIME: 10:30
TURNAROUND TIME REQUESTED:
Routine: (5-7 Days)
Rush: 1 Day* 2 Day* 3 Day*
Other*
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:
A: Biohazard D: Asbestos G: Strong Odour
B: Cyanide E: Heavy Metals H: High Contamination
C: PCBs F: Flammable I: Other (please specify*)

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

SAMPLED BY: <u>rg</u>	MATRIX:		SAMPLING:		COMMENTS:						
	DRINKING WATER	OTHER WATER	SOIL	OTHER	CONTAINER QTY	DATE	TIME	CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
CLIENT SAMPLE ID:						YYYY-MM-DD	HH:MM				
MW19-01		✓				2020-03-20	12:30			✓	
MW19-02		✓				2020-03-20	13:30	✓	✓		
SB1		✓				2020-03-20	12:00	✓	✓		
SB2		✓				2020-03-20	11:15	✓	✓		
SB3		✓				2020-03-20	10:15	✓	✓		
LE-1		✓				2020-03-20	11:30		✓		
SW1		✓				2020-03-20	13:50	✓	✓		
SW1-X		✓				2020-03-20	13:55	✓	✓		

ANALYSES REQUESTED:																																											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																							
BTEX	VPH	PHC F1	VOC	VPH	PHC F2-F4	EPH	PAH	L/HEPH	Non-Chlor.	PHENOLS Chlorinated	HAA	PCB	GLYCOLS	HAA	PESTICIDES	ACID HERBICIDES	Hg	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)

SHIPPING INSTRUCTIONS: Return Cooler(s)
Supplies Needed:

SAMPLE RETENTION: 30 Days (default)
60 Days 90 Days
Other (surcharges will apply):

* OTHER INSTRUCTIONS:
PLEASE LAB FILTER SAMPLE MW19-01 FOR DISSOLVED METALS **
If you would like to talk to a real live Scientist about your project requirements, please check here:

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 8-9 ICE: Y N
COOLER 2 (°C): ICE: Y N
COOLER 3 (°C): ICE: Y N
CUSTODY SEALS INTACT: NA Y N

CERTIFICATE OF ANALYSIS

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

ATTENTION Rahim Gaidhar

PO NUMBER Allterra 17-932

PROJECT P17-932

PROJECT INFO

WORK ORDER 0031093

RECEIVED / TEMP 2020-03-12 12:00 / 4°C

REPORTED 2020-03-19 15:09

COC NUMBER B58832

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.

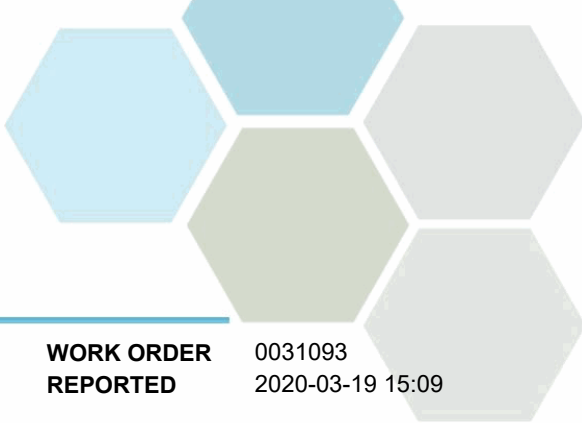
If you have any questions or concerns, please contact me at nyjpp@caro.ca

Authorized By:

Nicole Yipp
Team Lead, Client Service

1-888-311-8846 | www.caro.ca

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

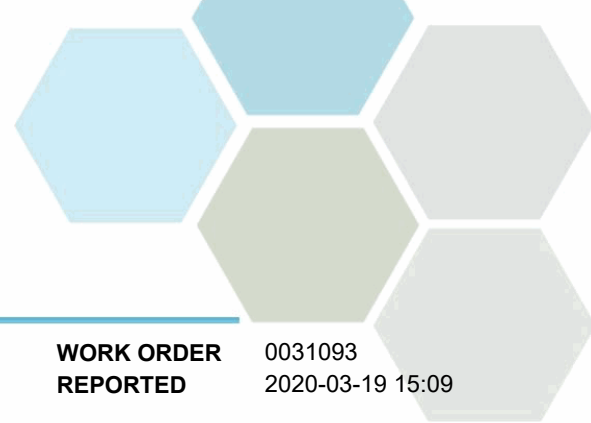


TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL	Units	Analyzed	Qualifier
20200311_LE-1 (0031093-01) Matrix: Water Sampled: 2020-03-11 11:30					
Anions					
Chloride	3500	0.10	mg/L	2020-03-13	
Fluoride	< 1.00	0.10	mg/L	2020-03-13	RA1
Nitrate (as N)	1.72	0.010	mg/L	2020-03-13	
Nitrite (as N)	0.465	0.010	mg/L	2020-03-13	
Sulfate	1430	1.0	mg/L	2020-03-13	
Calculated Parameters					
Hardness, Total (as CaCO3)	3080	0.500	mg/L	N/A	
Dissolved Metals					
Lithium, dissolved	0.00029	0.00010	mg/L	2020-03-19	
Aluminum, dissolved	0.0119	0.0050	mg/L	2020-03-19	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2020-03-19	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2020-03-19	
Barium, dissolved	0.0155	0.0050	mg/L	2020-03-19	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2020-03-19	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2020-03-19	
Boron, dissolved	0.190	0.0050	mg/L	2020-03-19	
Cadmium, dissolved	0.000684	0.000010	mg/L	2020-03-19	
Calcium, dissolved	833	0.20	mg/L	2020-03-19	
Chromium, dissolved	0.00878	0.00050	mg/L	2020-03-19	
Cobalt, dissolved	0.00179	0.00010	mg/L	2020-03-19	
Copper, dissolved	0.00181	0.00040	mg/L	2020-03-19	
Iron, dissolved	0.026	0.010	mg/L	2020-03-19	
Lead, dissolved	< 0.00020	0.00020	mg/L	2020-03-19	
Magnesium, dissolved	241	0.010	mg/L	2020-03-19	
Manganese, dissolved	19.1	0.00020	mg/L	2020-03-19	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2020-03-17	
Molybdenum, dissolved	0.00044	0.00010	mg/L	2020-03-19	
Nickel, dissolved	0.0118	0.00040	mg/L	2020-03-19	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2020-03-19	
Potassium, dissolved	24.7	0.10	mg/L	2020-03-19	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2020-03-19	
Silicon, dissolved	6.5	1.0	mg/L	2020-03-19	
Silver, dissolved	0.000107	0.000050	mg/L	2020-03-19	
Sodium, dissolved	1880	0.10	mg/L	2020-03-19	
Strontium, dissolved	4.14	0.0010	mg/L	2020-03-19	
Sulfur, dissolved	588	3.0	mg/L	2020-03-19	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2020-03-19	
Thallium, dissolved	0.000023	0.000020	mg/L	2020-03-19	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2020-03-19	
Tin, dissolved	< 0.00020	0.00020	mg/L	2020-03-19	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2020-03-19	

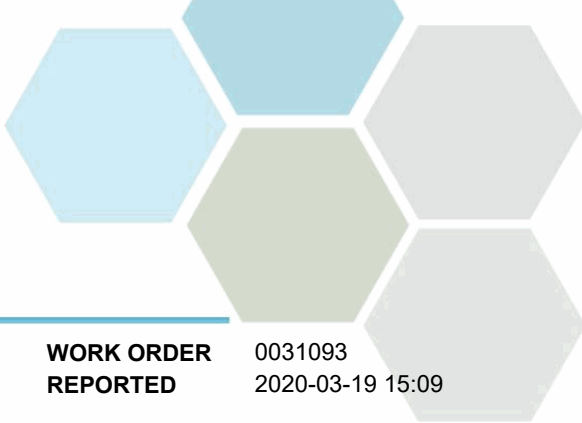


TEST RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL	Units	Analyzed	Qualifier
20200311_LE-1 (0031093-01) Matrix: Water Sampled: 2020-03-11 11:30, Continued					
<i>Dissolved Metals, Continued</i>					
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2020-03-19	
Uranium, dissolved	0.000116	0.000020	mg/L	2020-03-19	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2020-03-19	
Zinc, dissolved	0.0415	0.0040	mg/L	2020-03-19	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2020-03-19	
<i>General Parameters</i>					
Alkalinity, Total (as CaCO3)	34.7	1.0	mg/L	2020-03-14	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2020-03-14	
Alkalinity, Bicarbonate (as CaCO3)	34.7	1.0	mg/L	2020-03-14	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2020-03-14	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2020-03-14	
Solids, Total Dissolved	8400	15	mg/L	2020-03-18	
<i>Total Metals</i>					
Aluminum, total	0.0776	0.0050	mg/L	2020-03-19	
Antimony, total	< 0.00020	0.00020	mg/L	2020-03-19	
Arsenic, total	< 0.00050	0.00050	mg/L	2020-03-19	
Barium, total	0.0169	0.0050	mg/L	2020-03-19	
Beryllium, total	< 0.00010	0.00010	mg/L	2020-03-19	
Bismuth, total	< 0.00010	0.00010	mg/L	2020-03-19	
Boron, total	0.209	0.0050	mg/L	2020-03-19	
Cadmium, total	0.000705	0.000010	mg/L	2020-03-19	
Calcium, total	859	0.20	mg/L	2020-03-19	
Chromium, total	0.0108	0.00050	mg/L	2020-03-19	
Cobalt, total	0.00195	0.00010	mg/L	2020-03-19	
Copper, total	0.00198	0.00040	mg/L	2020-03-19	
Iron, total	0.029	0.010	mg/L	2020-03-19	
Lead, total	< 0.00020	0.00020	mg/L	2020-03-19	
Lithium, total	0.00042	0.00010	mg/L	2020-03-19	
Magnesium, total	261	0.010	mg/L	2020-03-19	
Manganese, total	19.5	0.00020	mg/L	2020-03-19	
Mercury, total	< 0.000010	0.000010	mg/L	2020-03-18	
Molybdenum, total	0.00027	0.00010	mg/L	2020-03-19	
Nickel, total	0.0128	0.00040	mg/L	2020-03-19	
Phosphorus, total	< 0.050	0.050	mg/L	2020-03-19	
Potassium, total	26.4	0.10	mg/L	2020-03-19	
Selenium, total	< 0.00050	0.00050	mg/L	2020-03-19	
Silicon, total	6.6	1.0	mg/L	2020-03-19	
Silver, total	0.000138	0.000050	mg/L	2020-03-19	
Sodium, total	2070	0.10	mg/L	2020-03-19	
Strontium, total	4.39	0.0010	mg/L	2020-03-19	
Sulfur, total	627	3.0	mg/L	2020-03-19	



TEST RESULTS

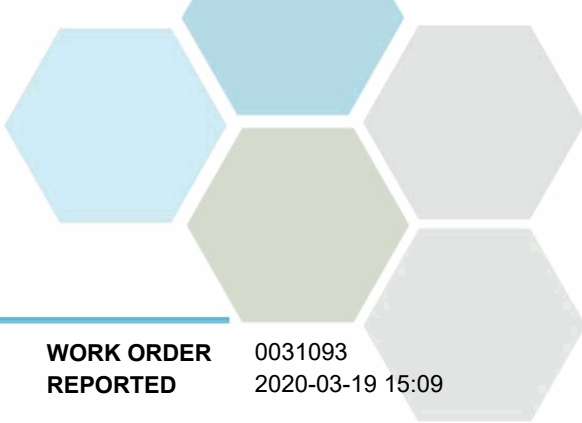
REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL	Units	Analyzed	Qualifier
20200311_LE-1 (0031093-01) Matrix: Water Sampled: 2020-03-11 11:30, Continued					
<i>Total Metals, Continued</i>					
Tellurium, total	< 0.00050	0.00050	mg/L	2020-03-19	
Thallium, total	0.000033	0.000020	mg/L	2020-03-19	
Thorium, total	< 0.00010	0.00010	mg/L	2020-03-19	
Tin, total	< 0.00020	0.00020	mg/L	2020-03-19	
Titanium, total	< 0.0050	0.0050	mg/L	2020-03-19	
Tungsten, total	< 0.0010	0.0010	mg/L	2020-03-19	
Uranium, total	0.000135	0.000020	mg/L	2020-03-19	
Vanadium, total	< 0.0010	0.0010	mg/L	2020-03-19	
Zinc, total	0.0425	0.0040	mg/L	2020-03-19	
Zirconium, total	< 0.00010	0.00010	mg/L	2020-03-19	

Sample Qualifiers:

RA1 The Reporting Limit has been raised due to matrix interference.



APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO Allterra Construction
PROJECT P17-932

WORK ORDER 0031093
REPORTED 2020-03-19 15:09

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
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
Mercury, dissolved in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Solids, Total Dissolved in Water	SM 2540 C* (2017)	Gravimetry (Dried at 103-105C)	Kelowna
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond

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

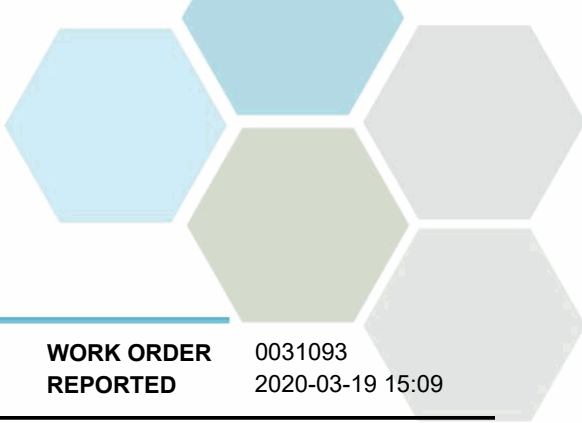
Glossary of Terms:

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
mg/L	Milligrams per litre
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 PROJECT Allterra Construction
P17-932

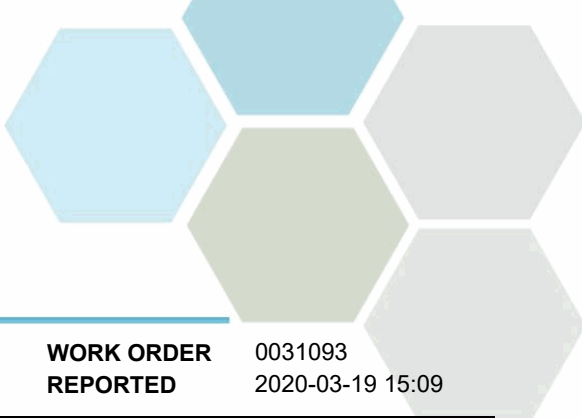
WORK ORDER REPORTED 0031093
2020-03-19 15:09

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 B0C1119									
Blank (B0C1119-BLK1)			Prepared: 2020-03-13, Analyzed: 2020-03-13						
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 (B0C1119-BLK2)			Prepared: 2020-03-13, Analyzed: 2020-03-13						
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 (B0C1119-BS1)			Prepared: 2020-03-13, Analyzed: 2020-03-13						
Chloride	16.2	0.10 mg/L	16.0		101	90-110			
Fluoride	4.01	0.10 mg/L	4.00		100	88-108			
Nitrate (as N)	4.06	0.010 mg/L	4.00		101	90-110			
Nitrite (as N)	2.10	0.010 mg/L	2.00		105	85-115			
Sulfate	16.0	1.0 mg/L	16.0		100	90-110			
LCS (B0C1119-BS2)			Prepared: 2020-03-13, Analyzed: 2020-03-13						
Chloride	16.0	0.10 mg/L	16.0		100	90-110			
Fluoride	3.92	0.10 mg/L	4.00		98	88-108			
Nitrate (as N)	4.05	0.010 mg/L	4.00		101	90-110			
Nitrite (as N)	1.92	0.010 mg/L	2.00		96	85-115			
Sulfate	16.0	1.0 mg/L	16.0		100	90-110			
Dissolved Metals, Batch B0C1444									
Blank (B0C1444-BLK1)			Prepared: 2020-03-17, Analyzed: 2020-03-17						
Mercury, dissolved	< 0.000010	0.000010 mg/L							
Reference (B0C1444-SRM1)			Prepared: 2020-03-17, Analyzed: 2020-03-17						
Mercury, dissolved	0.00423	0.000010 mg/L	0.00489		87	80-120			



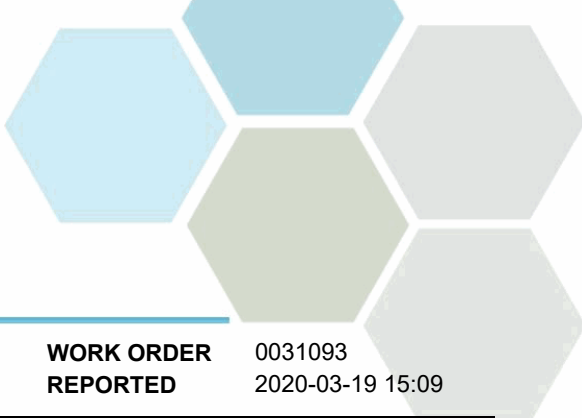
APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C1538									
Blank (B0C1538-BLK1)					Prepared: 2020-03-19, Analyzed: 2020-03-19				
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							
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 (B0C1538-BS1)					Prepared: 2020-03-19, Analyzed: 2020-03-19				
Lithium, dissolved	0.0213	0.00010 mg/L	0.0200		107	80-120			
Aluminum, dissolved	0.0229	0.0050 mg/L	0.0199		115	80-120			
Antimony, dissolved	0.0186	0.00020 mg/L	0.0200		93	80-120			
Arsenic, dissolved	0.0193	0.00050 mg/L	0.0200		97	80-120			
Barium, dissolved	0.0191	0.0050 mg/L	0.0198		96	80-120			
Beryllium, dissolved	0.0203	0.00010 mg/L	0.0198		103	80-120			
Bismuth, dissolved	0.0210	0.00010 mg/L	0.0200		105	80-120			
Boron, dissolved	0.0185	0.0050 mg/L	0.0200		92	80-120			
Cadmium, dissolved	0.0196	0.000010 mg/L	0.0199		99	80-120			
Calcium, dissolved	2.24	0.20 mg/L	2.02		111	80-120			
Chromium, dissolved	0.0194	0.00050 mg/L	0.0198		98	80-120			
Cobalt, dissolved	0.0197	0.00010 mg/L	0.0199		99	80-120			
Copper, dissolved	0.0203	0.00040 mg/L	0.0200		101	80-120			
Iron, dissolved	1.98	0.010 mg/L	2.02		98	80-120			
Lead, dissolved	0.0201	0.00020 mg/L	0.0199		101	80-120			
Magnesium, dissolved	1.99	0.010 mg/L	2.02		98	80-120			
Manganese, dissolved	0.0205	0.00020 mg/L	0.0199		103	80-120			



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

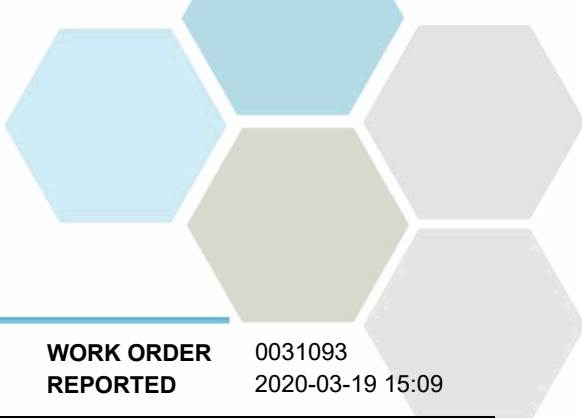
WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B0C1538, Continued									
LCS (B0C1538-BS1), Continued					Prepared: 2020-03-19, Analyzed: 2020-03-19				
Molybdenum, dissolved	0.0186	0.00010 mg/L	0.0200		93	80-120			
Nickel, dissolved	0.0200	0.00040 mg/L	0.0200		100	80-120			
Phosphorus, dissolved	2.02	0.050 mg/L	2.00		101	80-120			
Potassium, dissolved	1.92	0.10 mg/L	2.02		95	80-120			
Selenium, dissolved	0.0208	0.00050 mg/L	0.0200		104	80-120			
Silicon, dissolved	2.0	1.0 mg/L	2.00		100	80-120			
Silver, dissolved	0.0194	0.000050 mg/L	0.0200		97	80-120			
Sodium, dissolved	1.98	0.10 mg/L	2.02		98	80-120			
Strontium, dissolved	0.0190	0.0010 mg/L	0.0200		95	80-120			
Sulfur, dissolved	4.5	3.0 mg/L	5.00		90	80-120			
Tellurium, dissolved	0.0190	0.00050 mg/L	0.0200		95	80-120			
Thallium, dissolved	0.0208	0.000020 mg/L	0.0199		104	80-120			
Thorium, dissolved	0.0198	0.00010 mg/L	0.0200		99	80-120			
Tin, dissolved	0.0190	0.00020 mg/L	0.0200		95	80-120			
Titanium, dissolved	0.0186	0.0050 mg/L	0.0200		93	80-120			
Tungsten, dissolved	0.0197	0.0010 mg/L	0.0200		98	80-120			
Uranium, dissolved	0.0202	0.000020 mg/L	0.0200		101	80-120			
Vanadium, dissolved	0.0191	0.0010 mg/L	0.0200		96	80-120			
Zinc, dissolved	0.0206	0.0040 mg/L	0.0200		103	80-120			
Zirconium, dissolved	0.0196	0.00010 mg/L	0.0200		98	80-120			

Reference (B0C1538-SRM1)					Prepared: 2020-03-19, Analyzed: 2020-03-19				
Lithium, dissolved	0.106	0.00010 mg/L	0.100		106	77-127			
Aluminum, dissolved	0.222	0.0050 mg/L	0.235		94	79-114			
Antimony, dissolved	0.0444	0.00020 mg/L	0.0431		103	89-123			
Arsenic, dissolved	0.438	0.00050 mg/L	0.423		103	87-113			
Barium, dissolved	2.93	0.0050 mg/L	3.30		89	85-114			
Beryllium, dissolved	0.219	0.00010 mg/L	0.209		105	79-122			
Boron, dissolved	1.64	0.0050 mg/L	1.65		99	79-117			
Cadmium, dissolved	0.220	0.000010 mg/L	0.221		100	89-112			
Calcium, dissolved	7.56	0.20 mg/L	7.72		98	85-120			
Chromium, dissolved	0.429	0.00050 mg/L	0.434		99	87-113			
Cobalt, dissolved	0.127	0.00010 mg/L	0.124		103	90-117			
Copper, dissolved	0.838	0.00040 mg/L	0.815		103	90-115			
Iron, dissolved	1.30	0.010 mg/L	1.27		102	86-112			
Lead, dissolved	0.111	0.00020 mg/L	0.110		101	90-113			
Magnesium, dissolved	6.77	0.010 mg/L	6.59		103	84-116			
Manganese, dissolved	0.348	0.00020 mg/L	0.342		102	85-113			
Molybdenum, dissolved	0.405	0.00010 mg/L	0.404		100	87-112			
Nickel, dissolved	0.852	0.00040 mg/L	0.835		102	90-114			
Phosphorus, dissolved	0.516	0.050 mg/L	0.499		103	74-119			
Potassium, dissolved	2.89	0.10 mg/L	2.88		100	78-119			
Selenium, dissolved	0.0358	0.00050 mg/L	0.0324		110	89-123			
Sodium, dissolved	18.3	0.10 mg/L	18.0		101	81-117			
Strontium, dissolved	0.886	0.0010 mg/L	0.935		95	82-111			
Thallium, dissolved	0.0403	0.000020 mg/L	0.0385		105	90-113			
Uranium, dissolved	0.252	0.000020 mg/L	0.258		98	87-113			
Vanadium, dissolved	0.845	0.0010 mg/L	0.873		97	85-110			
Zinc, dissolved	0.903	0.0040 mg/L	0.848		107	88-114			

General Parameters, Batch B0C1256

Blank (B0C1256-BLK1)					Prepared: 2020-03-14, Analyzed: 2020-03-14				
Alkalinity, Total (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0 mg/L							



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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General Parameters, Batch B0C1256, Continued

Blank (B0C1256-BLK1), Continued

Prepared: 2020-03-14, Analyzed: 2020-03-14

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							

Blank (B0C1256-BLK2)

Prepared: 2020-03-14, Analyzed: 2020-03-14

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							

LCS (B0C1256-BS1)

Prepared: 2020-03-14, Analyzed: 2020-03-14

Alkalinity, Total (as CaCO3)	97.7	1.0 mg/L	100		98	80-120			
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LCS (B0C1256-BS2)

Prepared: 2020-03-14, Analyzed: 2020-03-14

Alkalinity, Total (as CaCO3)	93.9	1.0 mg/L	100		94	80-120			
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General Parameters, Batch B0C1532

Blank (B0C1532-BLK1)

Prepared: 2020-03-18, Analyzed: 2020-03-18

Solids, Total Dissolved	< 15	15 mg/L							
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LCS (B0C1532-BS1)

Prepared: 2020-03-18, Analyzed: 2020-03-18

Solids, Total Dissolved	231	15 mg/L	240		96	85-115			
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Duplicate (B0C1532-DUP1)

Source: 0031093-01

Prepared: 2020-03-18, Analyzed: 2020-03-18

Solids, Total Dissolved	8100	15 mg/L		8400			4	15	
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Total Metals, Batch B0C1448

Blank (B0C1448-BLK1)

Prepared: 2020-03-17, Analyzed: 2020-03-18

Mercury, total	< 0.000010	0.000010 mg/L							
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Reference (B0C1448-SRM1)

Prepared: 2020-03-17, Analyzed: 2020-03-18

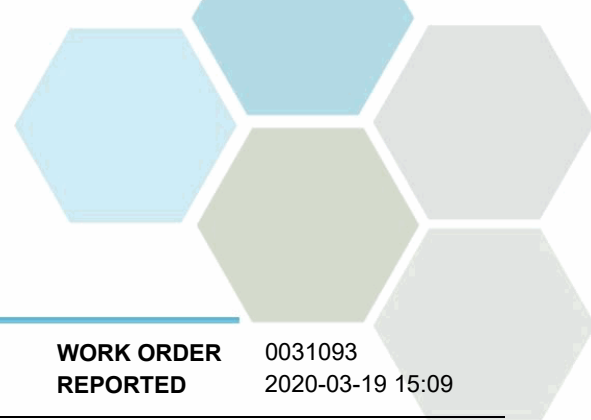
Mercury, total	0.00407	0.000010 mg/L	0.00489		83	80-120			
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Total Metals, Batch B0C1497

Blank (B0C1497-BLK1)

Prepared: 2020-03-17, Analyzed: 2020-03-19

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							



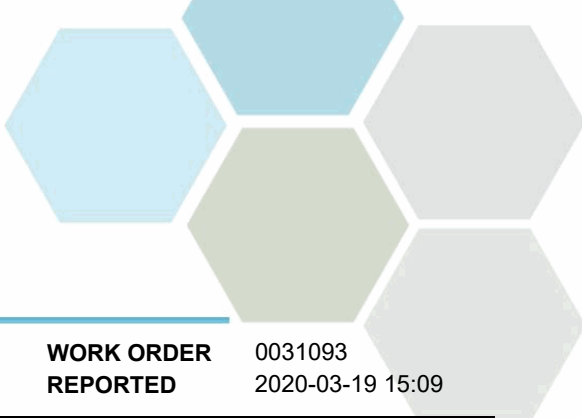
APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B0C1497, Continued									
Blank (B0C1497-BLK1), Continued					Prepared: 2020-03-17, Analyzed: 2020-03-19				
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 (B0C1497-BS1)					Prepared: 2020-03-17, Analyzed: 2020-03-19				
Aluminum, total	0.0220	0.0050 mg/L	0.0199		111	80-120			
Antimony, total	0.0197	0.00020 mg/L	0.0200		98	80-120			
Arsenic, total	0.0201	0.00050 mg/L	0.0200		101	80-120			
Barium, total	0.0197	0.0050 mg/L	0.0198		99	80-120			
Beryllium, total	0.0210	0.00010 mg/L	0.0198		106	80-120			
Bismuth, total	0.0219	0.00010 mg/L	0.0200		109	80-120			
Boron, total	0.0205	0.0050 mg/L	0.0200		102	80-120			
Cadmium, total	0.0205	0.000010 mg/L	0.0199		103	80-120			
Calcium, total	2.28	0.20 mg/L	2.02		113	80-120			
Chromium, total	0.0203	0.00050 mg/L	0.0198		103	80-120			
Cobalt, total	0.0206	0.00010 mg/L	0.0199		104	80-120			
Copper, total	0.0211	0.00040 mg/L	0.0200		105	80-120			
Iron, total	2.06	0.010 mg/L	2.02		102	80-120			
Lead, total	0.0209	0.00020 mg/L	0.0199		105	80-120			
Lithium, total	0.0219	0.00010 mg/L	0.0200		109	80-120			
Magnesium, total	2.10	0.010 mg/L	2.02		104	80-120			
Manganese, total	0.0219	0.00020 mg/L	0.0199		110	80-120			
Molybdenum, total	0.0198	0.00010 mg/L	0.0200		99	80-120			
Nickel, total	0.0206	0.00040 mg/L	0.0200		103	80-120			
Phosphorus, total	2.04	0.050 mg/L	2.00		102	80-120			
Potassium, total	2.02	0.10 mg/L	2.02		100	80-120			
Selenium, total	0.0220	0.00050 mg/L	0.0200		110	80-120			
Silicon, total	1.7	1.0 mg/L	2.00		85	80-120			
Silver, total	0.0204	0.000050 mg/L	0.0200		102	80-120			
Sodium, total	2.15	0.10 mg/L	2.02		106	80-120			
Strontium, total	0.0194	0.0010 mg/L	0.0200		97	80-120			
Sulfur, total	5.1	3.0 mg/L	5.00		103	80-120			
Tellurium, total	0.0191	0.00050 mg/L	0.0200		95	80-120			
Thallium, total	0.0216	0.000020 mg/L	0.0199		109	80-120			
Thorium, total	0.0207	0.00010 mg/L	0.0200		104	80-120			
Tin, total	0.0200	0.00020 mg/L	0.0200		100	80-120			
Titanium, total	0.0192	0.0050 mg/L	0.0200		96	80-120			
Tungsten, total	0.0203	0.0010 mg/L	0.0200		102	80-120			



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Allterra Construction
P17-932

WORK ORDER REPORTED 0031093
2020-03-19 15:09

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B0C1497, Continued									
LCS (B0C1497-BS1), Continued					Prepared: 2020-03-17, Analyzed: 2020-03-19				
Uranium, total	0.0211	0.000020 mg/L	0.0200		106	80-120			
Vanadium, total	0.0200	0.0010 mg/L	0.0200		100	80-120			
Zinc, total	0.0214	0.0040 mg/L	0.0200		107	80-120			
Zirconium, total	0.0194	0.00010 mg/L	0.0200		97	80-120			
Reference (B0C1497-SRM1)					Prepared: 2020-03-17, Analyzed: 2020-03-19				
Aluminum, total	0.299	0.0050 mg/L	0.303		99	82-114			
Antimony, total	0.0520	0.00020 mg/L	0.0511		102	88-115			
Arsenic, total	0.123	0.00050 mg/L	0.118		104	88-111			
Barium, total	0.790	0.0050 mg/L	0.823		96	83-110			
Beryllium, total	0.0524	0.00010 mg/L	0.0496		106	80-119			
Boron, total	3.35	0.0050 mg/L	3.45		97	80-118			
Cadmium, total	0.0505	0.000010 mg/L	0.0495		102	90-110			
Calcium, total	11.4	0.20 mg/L	11.6		98	85-113			
Chromium, total	0.255	0.00050 mg/L	0.250		102	88-111			
Cobalt, total	0.0403	0.00010 mg/L	0.0377		107	90-114			
Copper, total	0.524	0.00040 mg/L	0.486		108	90-117			
Iron, total	0.509	0.010 mg/L	0.488		104	90-116			
Lead, total	0.212	0.00020 mg/L	0.204		104	90-110			
Lithium, total	0.432	0.00010 mg/L	0.403		107	79-118			
Magnesium, total	3.96	0.010 mg/L	3.79		104	88-116			
Manganese, total	0.114	0.00020 mg/L	0.109		105	88-108			
Molybdenum, total	0.200	0.00010 mg/L	0.198		101	88-110			
Nickel, total	0.260	0.00040 mg/L	0.249		104	90-112			
Phosphorus, total	0.256	0.050 mg/L	0.227		113	72-118			
Potassium, total	7.38	0.10 mg/L	7.21		102	87-116			
Selenium, total	0.136	0.00050 mg/L	0.121		112	90-122			
Sodium, total	7.87	0.10 mg/L	7.54		104	86-118			
Strontium, total	0.371	0.0010 mg/L	0.375		99	86-110			
Thallium, total	0.0870	0.000020 mg/L	0.0805		108	90-113			
Uranium, total	0.0322	0.000020 mg/L	0.0306		105	88-112			
Vanadium, total	0.386	0.0010 mg/L	0.386		100	87-110			
Zinc, total	2.62	0.0040 mg/L	2.49		105	90-113			


CHAIN OF CUSTODY RECORD COC# **B 58832** PAGE 1 OF 1

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RELINQUISHED BY:	DATE: <u>3/11/20</u>	RECEIVED BY:	DATE: <u>0312</u>
<u>S. BABULIC</u>	TIME: <u>4:45</u>	<u>MAX EXPRESS TC</u>	TIME: <u>1200</u>
TURNAROUND TIME REQUESTED:		REGULATORY APPLICATION:	
Routine: (5-7 Days) <input checked="" type="checkbox"/> Rush: 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> Other*		Show on Report <input type="checkbox"/> Canadian Drinking Water Quality <input type="checkbox"/> BC WQG <input type="checkbox"/> BC HWR <input type="checkbox"/> BC CSR Soil: WL <input type="checkbox"/> AL <input type="checkbox"/> PL <input type="checkbox"/> RL-LD <input type="checkbox"/> RL-HD <input type="checkbox"/> CL <input type="checkbox"/> IL <input type="checkbox"/> BC CSR Water: AW <input type="checkbox"/> IW <input type="checkbox"/> LW <input type="checkbox"/> DW <input type="checkbox"/> *Contact Lab To Confirm. Surcharge May Apply CCM: OTHER:	
PROJECT NUMBER / INFO:		A: Biohazard D: Asbestos G: Strong Odour B: Cyanide E: Heavy Metals H: High Contamination C: PCBs F: Flammable I: Other (please specify*)	

REPORT TO:
 COMPANY: Allterra Construction Ltd.
 ADDRESS: 2158 Millstream Rd
Victoria BC V9B 6H4
 CONTACT: R. GAJDHAR
 TEL/FAX: 604-347-6903
 DELIVERY METHOD: EMAIL MAIL OTHER*
 DATA FORMAT: EXCEL WATERTRAX ESdat
 EQUIS BC EMS OTHER*
 EMAIL 1: Rgajdhar@istandee
 EMAIL 2: engineering.com
 EMAIL 3: sbabulic@istandeeengineering.com

INVOICE TO: SAME AS REPORT TO



* 0 0 3 1 0 9 3 *

DELIVERY METHOD: EMAIL MAIL OTHER*
 EMAIL 1:
 EMAIL 2:
 EMAIL 3:
 PO#: Allterra 17-932

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

SAMPLED BY: S. BABULIC

CLIENT SAMPLE ID:	MATRIX:				# CONTAINERS	SAMPLING:			COMMENTS:
	DRINKING WATER	OTHER WATER	SOIL	OTHER		DATE	TIME	CHLORINATED FILTERED PRESERVED	
<u>20200311-LE-1</u>		<input checked="" type="checkbox"/>				<u>2020-03-11</u>	<u>11:30</u>	<input checked="" type="checkbox"/>	<u>D. Metals Filtered</u>

BTEX	VPH	PHCF1	VOC	VPH	PHCF2-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	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)								
						<input checked="" type="checkbox"/>									<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>								<u>Anions</u>	<u>Nutrients</u>	

SHIPPING INSTRUCTIONS: Return Cooler(s) <input type="checkbox"/> Supplies Needed:	SAMPLE RETENTION: 30 Days (default) <input type="checkbox"/> 60 Days <input type="checkbox"/> 90 Days <input type="checkbox"/> Other (surcharges will apply):	* OTHER INSTRUCTIONS: If you would like to talk to a real live Scientist about your project requirements, please check here: <input type="checkbox"/>	SAMPLE RECEIPT CONDITION: COOLER 1 (°C): <u>3.9</u> ICE: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> COOLER 2 (°C): ICE: <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> COOLER 3 (°C): ICE: <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> CUSTODY SEALS INTACT: NA <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/>
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ANALYTICAL SERVICES
Caring About Results, Obviously.

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1-888-311-8846

CARO BC COC, Rev 2017-05

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

CHAIN OF CUSTODY RECORD COC# B 58832 PAGE 1 OF 1

Page 13 of 13

RELINQUISHED BY: S. BABULIC DATE: 3/11/20 TIME: 445
RECEIVED BY: TC MAX-EXPRESS DATE: 03/12 TIME: 1200

REPORT TO: COMPANY: Aliterra Construction Ltd.
ADDRESS: 2158 Millstream Rd Victoria BC V9B 6H4
CONTACT: R. GAJDHAR
TEL/FAX: 604-347-6903
DELIVERY METHOD: EMAIL [X] MAIL [] OTHER* []
DATA FORMAT: EXCEL [X] WATERTRAX [] ESdat []
EQuIS [] BC EMS [] OTHER* []
EMAIL 1: Rgajdhar@istander.com
EMAIL 2: engineering.com
EMAIL 3: sbabulic@istanderengineering.com

INVOICE TO: SAME AS REPORT TO [X]
* 0 0 3 1 0 9 3 *
DELIVERY METHOD: EMAIL [] MAIL [] OTHER* []
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO #: Aliterra 17-932

TURNAROUND TIME REQUESTED: Routine: (5-7 Days) [X] Rush: 1 Day* [] 2 Day* [] 3 Day* []
REGULATORY APPLICATION: 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: Aliterra 17-932
A: Biohazard D: Asbestos G: Strong Odour
B: Cyanide E: Heavy Metals H: High Contamination
C: PCBs F: Flammable I: Other (please specify*)

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

Table with columns: CLIENT SAMPLE ID, MATRIX (DRINKING WATER, OTHER WATER, SOIL, OTHER, # CONTAINERS), SAMPLING (DATE, TIME, CHLORINATED, FILTERED, PRESERVED), COMMENTS (e.g. flow/volume media ID/notes). Row 1: 20200311-LE-1, OTHER WATER, 2020-03-11 11:30, X, D. metals filtered.

Table for ANALYSES REQUESTED with columns for various tests: BTEX, VPH, PHCF1, VOC, PHCF2-F4, EPH, 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, Anions, Nutrients, HOLD, POSSIBLE SAMPLE HAZARD CODE(S).

SHIPPING INSTRUCTIONS: Return Cooler(s) [] Supplies Needed:

SAMPLE RETENTION: 30 Days (default) [] 60 Days [] 90 Days [] Other (surcharges will apply):

* OTHER INSTRUCTIONS: If you would like to talk to a real live Scientist about your project requirements, please check here: []

SAMPLE RECEIPT CONDITION: COOLER 1 (°C): 3.9 ICE: Y [X] N [] COOLER 2 (°C): ICE: Y [] N [] COOLER 3 (°C): ICE: Y [] N [] CUSTODY SEALS INTACT: NA [] Y [] N []