

MoE Sampling Results in South Shawigan Creek and trib on October 8, 2016

Parameter	Units	South Shawnigan Creek d/s Elkington Forest	RipRap tributary 20m d/s from Settling pond discharge	South Shawnigan Creek u/s Van Horn Creek (SIA site SW-5)	Water Quality Guidelines (approved and working) for the Protection of Aquatic Life	
					Chronic	Acute
EMS Site Number		E294426	E301630	E305364		
Sample Date		09-Oct-16	09-Oct-16	09-Oct-16		
Depth / Duplicate		0.5m	0.5m	0.5m		
Conductivity	µS/cm	58.6	1110	78.4		
Turbidity	NTU	1.05	1.32	0.67		Change of 5
Total Suspended Solids	mg/L	<1.0	1.4	<1.0	Change of 5	Change of 25
Hardness - Total	mg/L	21.7	391	27.2		
Anions						
Chloride -Dissolved	mg/L	3.07	139	6.14	150	600
Sulphate	mg/L	2	276	5.02	218	
Total Metals						
Aluminum	µg/L	39.5	56	38.5		
Antimony	µg/L	<0.10	0.46	<0.10		20
Arsenic	µg/L	<0.10	0.21	<0.10		5
Barium	µg/L	6.25	50.5	7.36	1000	5000
Beryllium	µg/L	<0.10	<0.10	<0.10	5.3	
Bismuth	µg/L	<0.05	<0.05	<0.05		
Boron	µg/L	<10	50	<10		1200
Cadmium	µg/L	<0.005	0.0337	<0.005		
Calcium	mg/L	6.87	135	8.21		
Chromium	µg/L	<0.10	0.18	0.12		1
Cobalt	µg/L	<0.10	0.71	<0.10	4	110
Copper	µg/L	0.57	1.59	0.53	2	7
Iron	µg/L	129	59.1	42		1000
Lead	µg/L	<0.05	0.078	<0.05	4.6	33.5
Magnesium	mg/L	1.18	21.3	1.79		
Manganese	µg/L	27.8	118	22.7	800	1100
Molybdenum	µg/L	<0.05	2.73	<0.05	1000	2000
Nickel	µg/L	<0.5	1.85	<0.5		25
Phosphorus	µg/L	<30	<30	<30		
Potassium	mg/L	0.421	3.32	0.295		373
Selenium	µg/L	0.057	0.659	0.053	2	
Silicon	µg/L	2930	4880	3240		
Silver	µg/L	<0.01	<0.01	<0.01	0.05	0.1
Sodium	mg/L	2.22	58.5	3.23		
Strontium	µg/L	31.4	517	37.8		
Sulfur	mg/L	0.75	97.8	1.86		
Thallium	µg/L	<0.01	<0.01	<0.01		0.3
Tin	µg/L	<0.10	<0.10	<0.10		
Titanium	µg/L	0.49	2.53	0.88		2000
Uranium	µg/L	<0.01	1.59	<0.01		300
Vanadium	µg/L	<0.5	2.01	<0.5		6
Zinc	µg/L	<3.0	<3.0	<3.0	7.5	33
Dissolved Metals						
Aluminum	µg/L	31.5	3.4	20.2	50	100
Antimony	µg/L	<0.10	0.46	<0.10		
Arsenic	µg/L	<0.10	0.14	<0.10		
Barium	µg/L	6.18	43.4	7.14		
Beryllium	µg/L	<0.10	<0.10	<0.10		
Bismuth	µg/L	<0.05	<0.05	<0.05		
Boron	µg/L	<10	43	<10		
Cadmium	µg/L	0.0062	0.0331	<0.005	0.06	0.09
Calcium	mg/L	6.75	123	8.07		
Chromium	µg/L	<0.10	<0.10	<0.10		
Cobalt	µg/L	<0.10	0.66	<0.10		
Copper	µg/L	0.45	1.38	0.45		
Iron	µg/L	106	<5	22.8		350
Lead	µg/L	<0.05	<0.05	<0.05		
Magnesium	mg/L	1.16	20.4	1.71		
Manganese	µg/L	25.7	112	20.1		
Molybdenum	µg/L	<0.05	2.47	<0.05		

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Nickel	µg/L	<0.5	1.74	<0.5	
Phosphorus	µg/L	<10	<10	<10	
Potassium	mg/L	0.419	3.33	0.289	
Selenium	µg/L	0.091	0.678	0.065	
Silicon	µg/L	2860	4420	3150	
Silver	µg/L	<0.01	<0.01	<0.01	
Sodium	mg/L	2.21	56.4	3.17	
Strontium	µg/L	30.2	492	36.4	
Sulfur	mg/L	0.58	86.6	1.69	
Thallium	µg/L	<0.01	<0.01	<0.01	
Tin	µg/L	<0.10	<0.10	<0.10	
Titanium	µg/L	<0.3	<0.3	0.33	
Uranium	µg/L	<0.01	1.56	<0.01	
Vanadium	µg/L	<0.5	1.81	<0.5	
Zinc	µg/L	1	<1	<1	

Above chronic BC WQ Guidelines

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Parameter	Units	RipRap tributary 20m d/s from Settling pond discharge	Water Quality Guidelines (approved and working) for the Protection of Aquatic Life	
EMS Site Number		E301630		
Sample Date		08-Oct-16	Chronic	Acute
Depth / Duplicate		0.5m		
Conductivity	µS/cm	1110		
Turbidity	NTU	1.32		Change of 5
Total Suspended Solids	mg/L	1.4	Change of 5	Change of 25
Hardness - Total	mg/L	391		
Anions				
Chloride -Dissolved	mg/L	139	150	600
Sulphate	mg/L	276	218	
Volatile Organic Compounds (Water)				
Benzene	mg/L	<0.00050		
Ethylbenzene	mg/L	<0.00050		
Methyl t-butyl ether (MTBE)	mg/L	<0.00050		
Styrene	mg/L	<0.00050		
Toluene	mg/L	<0.00050		
ortho-Xylene	mg/L	<0.00050		
meta- & para-Xylene	mg/L	<0.00050		
Xylenes	mg/L	<0.00075		
Polycyclic Aromatic Hydrocarbons (Water)				
Acenaphthene	mg/L	<0.000050		
Acenaphthylene	mg/L	<0.000050		
Acridine	mg/L	<0.000050		
Anthracene	mg/L	<0.000050		
Benz(a)anthracene	mg/L	<0.000050		
Benzo(a)pyrene	mg/L	<0.000050		
Benzo(b)fluoranthene	mg/L	<0.000050		
Benzo(g,h,i)perylene	mg/L	<0.000050		
Benzo(k)fluoranthene	mg/L	<0.000050		
Chrysene	mg/L	<0.000050		
Dibenz(a,h)anthracene	mg/L	<0.000050		
Fluoranthene	mg/L	<0.000050		
Fluorene	mg/L	<0.000050		
Indeno(1,2,3-c,d)pyrene	mg/L	<0.000050		
Naphthalene	mg/L	<0.000050		
Phenanthrene	mg/L	<0.000050		
Pyrene	mg/L	<0.000050		
Quinoline	mg/L	<0.000050		