



Wetland 06 - Spring 2018 Monitoring Data Results - Rev 01

Project SWCRR
 ReportTo Hemmera Envirochem Inc.
 Maxxam Job No. B854903
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RESULTS OF ANALYSIS

Sample ID	WQ1	WQ2	WQ3	WQ4B	WQ5B	WQ4A
Date Sampled	7/5/2018	7/5/2018	7/5/2018	7/5/2018	7/5/2018	7/5/2018
Time Sampled	11:50	13:40	14:30	15:30	16:10	11:50
Maxxam Sample ID	TU5603	TU5604	TU5605	TU5606	TU5607	TU5608
Nature	WATER	WATER	WATER	WATER	WATER	WATER
Chain Of Custody Number	557638-01-01	557638-01-01	557638-01-01	557638-01-01	557638-01-01	557638-01-01
Alkalinity @25C (pp, total), CO3,HCO3,OH						
Alkalinity (Total as CaCO3)	520	390	160	-	-	-
Alkalinity (PP as CaCO3)	<1.0	<1.0	17	-	-	-
Bicarbonate (HCO3)	630	480	150	-	-	-
Carbonate (CO3)	<1.0	<1.0	21	-	-	-
Hydroxide (OH)	<1.0	<1.0	<1.0	-	-	-
Biochemical Oxygen Demand						
Biochemical Oxygen Demand	3.2	<2.0	<2.0	<2.0	<2.0	<2.0
Cadmium - low level CCME - Dissolved						
Cadmium (Cd)	<0.000020	<0.000020	<0.000020	-	-	-
Chloride by Automated Colourimetry						
Chloride (Cl)	12	41	51	-	-	-
Chemical Oxygen Demand						
Chemical Oxygen Demand	36	35	27	-	-	-
Oxygen (Dissolved, winkler)						
Oxygen (O2)	2.2	10	14	11	11	1.5
Conductivity @25C						
Conductivity	950	850	500	-	-	-
Hardness						
Hardness (CaCO3)	440	400	220	-	-	-
Elements by ICP - Dissolved						
Iron (Fe)	1.0	<0.060	<0.060	-	-	-
Lithium (Li)	<0.020	0.024	<0.020	-	-	-
Magnesium (Mg)	49	49	35	-	-	-
Manganese (Mn)	0.44	0.12	0.0083	-	-	-
Potassium (K)	1.7	4.1	2.3	-	-	-
Sodium (Na)	49	34	23	-	-	-
Strontium (Sr)	0.63	0.85	0.37	-	-	-
Sulphur (S)	3.0	7.7	10	-	-	-
Phosphorus (P)	<0.10	<0.10	<0.10	-	-	-
Barium (Ba)	0.23	0.13	0.069	-	-	-
Silicon (Si)	4.4	6.0	1.2	-	-	-
Boron (B)	0.032	0.052	0.028	-	-	-
Calcium (Ca)	97	80	30	-	-	-
Elements by ICPMS - Dissolved						
Aluminum (Al)	<0.0030	<0.0030	<0.0030	-	-	-
Chromium (Cr)	<0.0010	<0.0010	<0.0010	-	-	-

Cobalt (Co)	0.00074	0.00041	<0.00030	-	-	-
Copper (Cu)	0.00021	0.00025	0.00040	-	-	-
Lead (Pb)	<0.00020	<0.00020	<0.00020	-	-	-
Antimony (Sb)	<0.00060	<0.00060	<0.00060	-	-	-
Molybdenum (Mo)	0.00036	0.0038	0.0028	-	-	-
Nickel (Ni)	0.0011	0.0014	0.00098	-	-	-
Selenium (Se)	<0.00020	0.0011	0.00060	-	-	-
Silver (Ag)	<0.00010	<0.00010	<0.00010	-	-	-
Arsenic (As)	0.0013	0.0021	0.0016	-	-	-
Thallium (Tl)	<0.00020	<0.00020	<0.00020	-	-	-
Tin (Sn)	<0.0010	<0.0010	<0.0010	-	-	-
Titanium (Ti)	<0.0010	<0.0010	<0.0010	-	-	-
Uranium (U)	0.00044	0.0031	0.0023	-	-	-
Vanadium (V)	<0.0010	<0.0010	0.0010	-	-	-
Zinc (Zn)	<0.0030	<0.0030	<0.0030	-	-	-
Beryllium (Be)	<0.0010	<0.0010	<0.0010	-	-	-
Ion Balance						
Ion Balance (% Difference)	1.1	0.73	0.50	-	-	-
Sum of cations, anions						
Anion Sum	11	9.5	5.4	-	-	-
Cation Sum	11	9.6	5.4	-	-	-
Ammonia-N (Total)						
Ammonia (N)	0.043	0.045	0.024	-	-	-
Nitrate and Nitrite						
Nitrate (NO3)	<0.044	<0.044	0.072	0.068	1.9	3.2
Nitrite (NO2)	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Nitrate + Nitrite-N (calculated)						
Nitrate plus Nitrite (N)	<0.014	<0.014	0.016	0.015	0.44	0.71
Nitrogen (Nitrite - Nitrate) by IC						
Nitrate (N)	<0.010	<0.010	0.016	0.015	0.44	0.71
Nitrite (N)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH @25°C						
Ph	8.13	8.25	9.10	-	-	-
Orthophosphate by Konelab						
Orthophosphate (P)	0.0080	0.0068	0.0085	0.0065	0.0083	0.0066
Sulphate by Automated Colourimetry						
Sulphate (SO4)	6.6	24	34	-	-	-
Total Dissolved Solids (Filt. Residue)						
Solids	530	480	290	-	-	-
Total Dissolved Solids (Calculated)						
Total Dissolved Solids	530	470	270	-	-	-
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	1.5	0.81	0.86	-	-	-
Phosphorus -P (Total, Dissolved)						
Phosphorus (P)	<0.0030	0.029	0.0093	-	-	-
Total Phosphorus						
Phosphorus (P)	0.093	0.060	0.024	-	-	-
Total Suspended Solids (NFR)						
Solids	18	17	3.5	-	-	-

Turbidity						
Turbidity	6.5	7.0	2.6	13	2.2	<0.10



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Flow Data For July 5

Site	Channel Width (m)	Depth*(m)			Velocity* (m/sec)			Discharge (m ³ /sec)	Comments
		RMID	MID	LMID	RMID	MID	LMID		
FL 1	0.42	0.3	0.27	0.28	-	-	-	-	Channel had water present but no measureable velocity in the channel
FL 2	2.5	0.68	0.58	0.39	-	-	-	-	Channel had water present but no measureable velocity in the channel
FL 3	-	-	-	-	-	-	-	-	Channel was dry at the time of the survey
FL 4	-	-	-	-	-	-	-	-	Channel was dry at the time of the survey

* RMID= right mid channel, MID= mid channel, LMID= left mid channel
 (-)= null result

In-situ Water Quality Parameters

Site	Temperature	Dissolved Oxygen (mg/l)	pH	Conductivity (µS/cm)
WQ1	19.2	4.2	7.5	953
WQ2	19.1	10.5	7.6	882
WQ3	20.6	14.4	8.9	509
WQ4a	5.2	4.4	6.16	769
WQ4b	21.5	5.9	8.1	725
WQ5a	-	-	-	-
WQ5b	21.8	6.5	6.5	512
WQ5c	-	-	-	-

(-)= null result