

APPENDIX IX.6

BASELINE WATER AND SEDIMENT QUALITY FOR RECEIVING WATERS

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Table IX.6-1
Baseline Water Quality in Snap Lake from 1998-2001

Parameter	Units	Snap Lake																												Water Quality Guidelines ^(c)																																					
		1998														1999																																																			
		WQ1		WQ2		WQ3		WQ7	WQ1		WQ2		WQ3		WQ4		WQ6		WQ7		WQ1		WQ2		WQ3		WQ4	WQ6	WQ7																																						
		2-Feb	20-Jul	2-Feb	20-Jul	2-Feb	20-Jul	20-Jul	24-Mar	12-Aug ^(b)	24-Mar	6.5m	Int	24-Mar	12-Aug	24-Mar	12-Aug	24-Mar	6m	Int	24-Mar	7m	Int	16-Mar	22-Jul	22-Jul	16-Mar	22-Jul	22-Jul	22-Jul	16-Mar	22-Jul																																			
								2m ^(a)	16m	Int ^(b)														3m	3m		3m	3m	3m		3m	Drinking Water	Aquatic Life																																		
Conventional Parameters																																																																			
pH	pH	6.83	6.78	6.84	6.87	6.88	6.81	6.75	6.84	6.45	6.33	6.5	6.6	6.28	6.4	6.7	6.4	6.45	6.49	6.7	6.54	6.45	6.9	6.61	6.56	6.7	6.7	6.7	6.8	6.7	6.6	6.5	6.8	6.5	6.5-8.5	6.5-9.0																															
Alkalinity	mg/L	7	5	4	8	4	7	4	4	6	6	4	7	7	4	6	4	6	5	6	5	4	7	7	5	9	8	8	9	7	6	6	10	6	-	-																															
Total Dissolved Solids	mg/L	25	< 10	18	17	< 10	15	< 10	< 10	12	<10	19	14	15	18	<10	16	13	19	<10	<10	15	<10	16	18	< 10	60	70	< 10	30	<10	40	20	40	=500 ^(d)	-																															
Total Suspended Solids	mg/L	4	< 3	< 3	< 3	< 3	< 3	< 3	< 3	<3	5	<3	<3	<3	<3	<3	7	3	<3	<3	<3	<3	3	<3	<3	<3	<3	3	<3	<3	<3	<3	<3	-	-																																
Total Hardness	mg/L	0.04	4	4	-	4	-	4	5	7	6	5	7	7	5	6	5	6	5	7	6	5	7	7	6	9	6	5	9	6	6	5	10	6	-	-																															
Conductivity	uS/cm	21	15	15	25	15	21	15	16	24	19	15	22	21	14	19	15	18	15	20	18	15	22	21	16	27	19	18	24	19	18	18	31	19	-	-																															
Colour	TCU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	10	< 3	10	10	10	5	10	=15 ^(d)	-																															
Turbidity	NTU	0.4	0.4	0.5	0.3	0.6	0.3	0.5	0.5	-	-	1.8	-	-	0.6	-	0.5	-	0.4	-	-	0.7	-	-	0.6	0.22	0.45	0.25	< 0.1	0.25	0.3	0.2	0.2	0.25	1	Short-term increase <8 long-term increase <2																															
Nutrients																																																																			
Ammonia	mg/L	0.026	0.003	0.002	0.02	0.002	0.02	0.003	0.004	0.021	0.016	0.032	0.028	0.029	0.041	0.024	0.016	0.026	0.047	0.031	0.025	0.086	0.028	0.026	0.038	0.026	<0.005	0.006	0.024	0.005	<0.005	<0.005	0.027	<0.005	-	11.1																															
Nitrate + Nitrite	mg/L	-	< 0.008	< 0.008	-	< 0.008	-	< 0.008	< 0.008	< 0.008	0.041	<0.008	< 0.008	0.029	<0.008	< 0.008	<0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	0.012	<0.008	0.04	0.009	<0.006	< 0.006	<0.006	<0.006	<0.006	0.02	0.01	-	-																																
Nitrate-N	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.038	-	-	<0.006	-	-	-	0.02	-	-	-																																
Nitrite-N	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	-	-	<0.002	-	-	<0.002	-	-	-	0.06																																
Total Phosphorus	mg/L	0.008	0.005	<0.002	-	0.01	0.004	0.004	0.002	0.01	0.016	0.01	0.011	0.016	0.009	0.009	0.009	0.01	0.008	0.014	0.012	0.026	0.011	0.012	0.014	0.009	0.003	0.002	0.005	<0.001	<0.001	0.003	0.006	0.004	-	-																															
Dissolved Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	0.009	-	-	0.007	-	0.008	-	0.01	-	-	0.012	-	-	0.012	0.008	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.003	-	-																															
Orthophosphate	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.005	0.005	<0.002	0.004	0.004	<0.002	0.004	<0.002	0.004	<0.002	0.004	0.004	<0.002	0.004	0.004	<0.002	0.004	0.005	<0.001	0.001	0.001	<0.001	0.002	0.001	-	-																																
Total Kjeldahl Nitrogen	mg/L	-	-	-	-	-	-	-	-	-	-	0.24	-	-	0.18	-	0.17	-	0.2	-	-	0.24	-	-	0.2	0.31	<0.05	<0.05	0.25	0.39	0.7	<0.05	0.34	0.11	-	-																															
Dissolved Organic Carbon	mg/L	-	-	-	-	-	-	-	-	-	-	3	-	-	3	-	3	-	3	-	-	4	-	-	4	4	-	-	4	-	-	4	-	-	-																																
Total Organic Carbon	mg/L	<1	2.8	3.6	-	2.7	-	6.8	3.4	3.9	3.2	3.1	4.1	3	3.2	3.9	3.1	3.1	3	4.5	3.6	3.8	4.6	4	3.6	5	4	-	4	3	3	-	5	-	-	-																															
Major Ions																																																																			
Bicarbonate	mgCO ₃ /L	-	-	-	-	-	-	-	-	5.7	5.7	-	6.8	7.3	-	5.6	-	5.5	-	5.9	5.2	-	6.8	6.6	-	11	10	10	11	9	8	7	12	8	-	-																															
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	-																																
Calcium	mg/L	1.52	0.95	0.93	1.81	0.93	1.4	0.97	1	1.46	1.45	1.13	1.64	1.76	1.06	1.35	1.21	1.33	1.11	1.52	1.34	1.23	1.65	1.56	1.24	2.13	1.38	1.28	2.02	1.34	1.32	1.26	2.43	1.42	-	-																															
Chloride	mg/L	0.81	0.40	0.20	0.72	0.60	0.61	0.30	0.40	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	0.2	0.2	<0.2	<0.2	<1	<1	<1	<1	<1	<1	<1	<1	=250 ^(d)	230																																
Fluoride	mg/L	-	-	-	-	-	-	-	-	-	-	0.04	-	-	0.04	-	0.04	-	0.04	-	-	0.04	-	-	0.04	0.06	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	0.06	<0.05	1.5	-																															
Hydroxide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	-																															
Magnesium	mg/L	0.79	0.48	0.50	0.94	0.49	0.77	0.50	0.54	0.69	0.61	0.58	0.78	0.69	0.57	0.66	0.58	0.61	0.58	0.73	0.64	0.56	0.78	0.73	0.57	0.88	0.58	0.54	0.84	0.57	0.57	0.57	1.01	0.62	-	-																															
Potassium	mg/L	0.68	0.40	0.40	0.78	0.40	0.66	0.40	0.42	0.52	0.49	0.32	0.58	0.49	0.33	0.48	0.33	0.44	0.34	0.56	0.46	0.35	0.54	0.49	0.37	0.74	0.43	0.41	0.67	0.42	0.42	0.42	0.77	0.46	-	-																															
Silica	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	0.4	-	-	0.6	-	-	-	-																															
Sodium	mg/L	0.74	0.45	0.46	0.94	0.47	0.69	0.46	0.44	0.61	0.52	0.45	0.7	0.57	0.46	0.57	0.44	0.53	0.44	0.59	0.5	0.44	0.62	0.55	0.45	1	0.6	0.6	0.9	0.6	0.6	0.5	1	0.6	=200 ^(d)	-																															
Sulphate	mg/L	6	3	3	4	4	6	3	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	36	<3	<3	<3	<3	<3	2.46	1.38	1.31	1.98	1.34	1.37	1.52	2.74	1.79	=500 ^(d)	-																															
Total Metals																																	UL ^(e)		UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
Aluminum	µg/L	6.3	7.2	7.5	6.6	7.7	5.1	6.4	14.1	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	11.6	8.5	9.2	9.8	8	8.2	-	14.6	11.1	-	-	100																															
Antimony	µg/L	0.3	0.7	0.6	0.3	0.5	0.4	0.5	0.5	0.6	0.5	< 0.5	0.6	0.4	< 0.5	0.5	< 0.5	0.5	< 0.5	0.7	0.7	< 0.5	0.5	0.5	< 0.5	0.25	<0.03	<0.03	0.04	0.83	<0.03	-	0.05	<0.03	-	-																															
Arsenic	µg/L	-	-	-	-	-	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.11	<0.03	<0.03	0.1	<0.03	<0.03	-	0.12	<0.03	25	5																																
Barium	µg/L	3	2.2	2.2	3.9	2.1	2.8	2.1	2.6	2.4	3.2																																																								

Table IX.6-1
Baseline Water Quality in Snap Lake from 1998-2001 (Continued)

Parameter	Units	Snap Lake																												Water Quality Guidelines ^(c)							
		1998												1999														2001									
		WQ1		WQ2		WQ3		WQ7	WQ1		WQ2		WQ3		WQ4		WQ6		WQ7		WQ1		WQ2		WQ3		WQ4	WQ6	WQ7								
		2-Feb	20-Jul	2-Feb	20-Jul	2-Feb	20-Jul	20-Jul	24-Mar	12-Aug	24-Mar	12-Aug	24-Mar	12-Aug	24-Mar	12-Aug	24-Mar	6m	12-Aug	24-Mar	7m	12-Aug	16-Mar	22-Jul	22-Jul	16-Mar	22-Jul	22-Jul	16-Mar	22-Jul							
							2m ^(a)	16m	12m ^(b)		6.5m												3m		3m		3m		3m			Drinking Water	Aquatic Life				
Dissolved Metals																																					
Aluminum	µg/L	3.1	2.2	3.2	8.7	3.1	2.6	1.9	5	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	-	-			
Antimony	µg/L	0.4	0.3	0.3	0.5	0.3	0.5	0.3	0.3	0.6	0.6	1.5	0.6	0.5	1.6	0.6	1.6	0.5	1.6	0.4	0.4	1.9	0.6	0.8	0.9	0.14	<0.03	<0.03	<0.03	0.18	<0.03	<0.03	0.11	0.06	-	-	
Arsenic	µg/L	-	-	-	-	-	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	-			
Barium	µg/L	2.9	2	2	3.5	1.8	2.8	2	2.2	2.4	3	2	3.1	3.6	1.9	2.2	2.1	2.5	1.9	2.6	2.4	2.2	2.7	3.1	2.2	4.5	2.55	2.32	3.5	2.4	2.3	2.4	4.38	2.66	-	-	
Beryllium	µg/L	0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 0.2	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.1	< 0.1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	-		
Bismuth	µg/L	0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-		
Boron	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Cadmium	µg/L	0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	
Cesium	µg/L	0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	
Chromium	µg/L	0.2	< 0.2	0.2	0.3	< 0.2	0.2	0.7	0.4	0.3	0.3	< 0.3	0.6	0.8	< 0.3	0.3	< 0.3	0.8	< 0.3	0.5	0.4	< 0.3	0.3	0.3	< 0.3	0.13	<0.06	<0.06	0.13	<0.06	<0.06	<0.06	<0.06	0.2	<0.06	-	-
Cobalt	µg/L	0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	0.2	0.2	< 0.1	0.1	0.1	< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	0.1	< 0.1	0.2	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	
Copper	µg/L	2.1	0.5	0.5	1.4	0.4	0.9	0.4	0.4	0.7	0.6	0.5	0.7	0.5	0.5	1.3	0.6	0.7	0.5	0.7	0.6	0.7	0.8	0.6	0.9	3.2	<0.6	1.1	4.4	<0.6	<0.6	0.7	1.5	1	-	-	
Iron	mg/L	< 0.012	< 0.02	< 0.02	< 0.012	< 0.02	< 0.012	< 0.02	< 0.02	< 0.02	< 0.02	0.033	< 0.02	< 0.02	0.037	< 0.02	0.041	< 0.02	< 0.03	< 0.02	< 0.02	< 0.03	< 0.02	< 0.02	< 0.03	< 0.005	0.016	0.005	<0.005	0.013	0.019	<0.005	<0.005	0.007	-	-	
Lead	µg/L	0.2	< 0.2	0.2	0.2	< 0.2	0.2	< 0.2	0.9	0.2	< 0.2	0.1	0.2	0.2	1.4	0.3	0.4	0.3	0.2	0.6	0.7	0.1	< 0.2	< 0.2	1.2	0.11	0.18	0.09	0.11	0.07	<0.05	<0.05	0.19	0.08	-	-	
Lithium	µg/L	1.2	0.8	0.8	1.5	0.8	1.1	0.8	0.7	1.1	0.9	0.9	1	0.8	0.9	1.1	0.9	0.9	1	0.9	0.9	0.9	1	0.8	1	1.4	0.7	0.6	1.3	0.7	0.6	0.5	1.4	0.6	-	-	
Manganese	µg/L	0.4	< 0.1	< 0.1	0.4	< 0.1	0.3	< 0.1	0.1	0.5	7.1	0.2	0.5	10	0.4	0.5	0.3	0.6	0.4	0.3	0.5	0.2	0.3	1	0.6	0.8	3.1	0.6	0.6	3	4.2	0.4	0.9	1	-	-	
Mercury	µg/L	-	-	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	-	
Molybdenum	µg/L	0.1	< 0.1	0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.1	0.1	< 1	< 0.1	< 1	< 0.1	< 0.1	< 1	0.1	< 0.1	< 1	0.08	<0.06	<0.06	0.08	<0.06	<0.06	<0.06	0.1	<0.06	-	-	
Nickel	µg/L	0.9	< 0.1	0.1	0.5	< 0.1	0.3	0.1	0.1	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.3	0.2	3.72	0.13	0.5	0.94	0.09	0.09	0.61	2.6	0.4	-	-	
Rubidium	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	<1	<1	1	<1	<1	<1	2	<1	-	-	
Selenium	µg/L	1	1	< 1	1	< 1	1	< 1	< 1	< 10	< 10	< 1	< 10	< 10	< 1	< 10	< 1	< 10	< 1	< 10	< 10	< 1	< 10	< 10	< 1	< 0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Silver	µg/L	0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	
Strontium	µg/L	9.3	5.7	5.8	11.2	5.9	8.8	5.6	6	7.4	7	5.6	9.1	9.5	5.6	6.8	5.9	7.4	5.8	7.4	6.7	6	7.6	7.1	6.1	11.3	9	7.9	10.5	8.3	8	6.8	12.1	7.6	-	-	
Thallium	µg/L	0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	<0.03	<0.03	-	<0.03	<0.03	<0.03	-	<0.03	-	-	
Titanium	µg/L	0.2	< 0.2	< 0.2	0.1	< 0.2	0.1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.3	< 0.2	< 0.2	< 0.3	< 0.2	< 0.3	< 0.2	< 0.3	< 0.2	< 0.2	< 0.3	< 0.2	< 0.2	< 0.3	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	-	
Uranium	µg/L	0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
Vanadium	µg/L	0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
Zinc	µg/L	6.9	< 0.5	1.6	3	< 0.5	1	< 0.5	0.6	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10.6	0.9	1.7	11.8	<0.8	<0.8	1.6	24.2	4.8	-	-	
Biological Parameters																																					
Fecal Coliform	CFU/100mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	<1				<1		-	-	
Total Coliform	CFU/100mL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	<1				<1		-	-	
Organics																																					
Oil and Grease	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	

Table IX.6-2
Baseline Water Quality in Snap Lake at Fresh Water Intake Site (AS1) in 2000 and 2001

Parameter	Units	2000											2001											Water Quality Guidelines ^(a)	
		26-Jun	17-Jul	24-Jul	21-Aug	28-Aug	4-Sep	18-Sep	25-Sep	16-Oct	20-Nov	18-Dec	15-Jan	12-Feb	12-Mar	18-Mar	22-Mar	15-Apr	15-Apr	14-May	11-Jun	11-Jun	Drinking Water	Aquatic Life	
Conventional Parameters		Pre-Discharge																During Discharge ^(h)			Post-Discharge ^(h)				
pH	pH	7.1	6.87	6.72	6.93	6.93	6.78	6.84	6.84	6.53	6.62	6.55	6.44	6.1	6.59	6.79	-	-	6.64	6.5	6.28	6.41	6.52	6.5-8.5	6.5-9.0
Alkalinity	mg/L	-	5.1	5.2	4.4	4.2	4.2	5.2	4.7	8.7	-	-	5.7	7	5.9	6.2	-	-	6.3	8	6.3	5.6	5.5	-	-
Total Dissolved Solids	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	<10	26.0	-	-	<10	50	-	-	-	=500 ^(b)	-
Total Suspended Solids	mg/L	<3	9	<3	4	<3	<3	3	21	<3	<3	<3	<3	<3	<3	<3	5	-	<3	<3	4	3	<3	-	-
Total Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	7	7.38	6.98	-	-	7.77	8	-	-	-	-	-
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	20.9	20.9	20.8	-	-	22	23.7	-	-	-	-	-
Colour	TCU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	=15 ^(b)	-
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6	-	-	-	-	1	short-term increase <8 long-term increase <2
Nutrients																									
Ammonia	mg/L	<0.005	<0.005	<0.005	<0.005	-	-	0.012	0.028	0.059	0.087	-	-	0.063	0.022	0.006	-	-	0.01	0.048	-	-	-	-	11.1
Nitrate + Nitrite	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.052	0.017	0.015	-	-	0.013	0.031	-	-	-	-	-
Total Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	0.008	0.009	-	-	0.007	<0.001	-	-	-	-	-
Dissolved Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	0.008	<0.004	-	-	0.007	<0.001	-	-	-	-	-
Orthophosphate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	0.006	-	-	-	-	-
Total Kjeldahl Nitrogen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.25	0.18	0.27	-	-	0.25	0.37	-	0.15	0.11	-	-
Dissolved Organic Carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	5.1	3.9	-	-	4	4	-	-	-	-	-
Total Organic Carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	3.9	-	-	4.2	4	-	-	-	-	-
Major Ions																									
Bicarbonate	mgCO ₃ /L	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-
Carbonate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	-	-	-	-	-	-	-	-	-	-
Calcium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	1.61	1.67	1.51	-	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	<1	1	0.4	-	-	9.9	<1	-	-	-	=250 ^(b)	230
Fluoride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.07	0.04	0.04	-	-	0.04	0.06	-	-	-	1.5	-
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.72	0.78	0.78	-	-	0.82	0.8	-	-	-	-	-
Potassium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.51	0.51	0.50	-	-	0.52	0.54	-	-	-	-	-
Silica	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	0.68	-	-	0.7	0.5	-	-	-	-	-
Sodium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.6	0.62	0.58	-	-	0.65	0.7	-	-	-	=200 ^(b)	-
Sulphate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	1.94	9	<3	-	-	<3	2.08	-	-	-	-	=500 ^(b)
Total Metals		UL ^(c)																UL							
Aluminum	µg/L	38	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	<30	5.3	<30	32	-	-	<30	5.9	<30	<30	<30	-	100
Antimony	µg/L	<0.5	<0.5	0.7	1	0.8	<0.5	0.9	0.8	0.7	0.7	0.9	<0.5	0.23	1.5	1.1	-	-	1.6	0.12	<0.5	0.9	1	-	-
Arsenic	µg/L	-	-	<1	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	<1	0.08	-	<1	<1	25	5
Barium	µg/L	4	3	3	3	3	3	3	2	2	3	3	3	3.03	3	4	-	-	4	3.95	4	4	3	1000	-
Beryllium	µg/L	<2	3	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.2	<2	<2	-	-	<2	<0.2	<2	<2	<2	-	-
Bismuth	µg/L	<10	<10	<5	<5	<5	<10	0.4	<5.0	<10	<5	<5.0	<5	<0.1	<10	<5.0	-	-	<0.4	-	<5	0.5	<0.4	-	-
Boron	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-
Cadmium	µg/L	<0.3	0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.05	<0.3	<0.3	-	-	<0.3	<0.05	<0.3	<0.3	<0.3	5	0.003
Cesium	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	-	-	<0.4	-	<0.4	<0.4	<0.4	-	-
Chromium	µg/L	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<0.06	<3	<3	-	-	<3	<0.06	<3	<3	<3	50	1
Cobalt	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<1	<1	-	-	<1	<0.1	<1	<1	<1	-	-
Copper	µg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.6	<2	<2	-	-	<2	0.7	<2	<2	<2	=1000 ^(b)	2
Iron	mg/L	0.14	0.12	0.07	0.17	0.13	0.14	0.21	0.15	0.17	0.39	0.28	0.09	0.077	0.12	0.21	-	-	0.29	0.039	0.21	-	-	=0.3 ^(b)	0.3
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.05	<1	<1	-	-	<1	0.17	<1	<1	<1	10	1
Lithium	µg/L	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	0.7	<3	<3	-	-	<3	1	<3	<3	<3	-	-
Manganese	µg/L	9	7	7	11	10	9	11	9	7	22	13	7	6	10	12	-	-	7	6.7	13	5	5	=50 ^(b)	-
Mercury	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	-	<0.01	-	-	-	<0.02	-	-	-	1	0.1
Molybdenum	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.07	<1	<1	-	-	<1	<0.06	<1	<1	<1	-	73
Nickel	µg/L	1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.35	<1	<1	-	-	<1	0.37	<1 ^(d)	<1	<1	-	25
Rubidium	µg/L	1	1.1	1	1	1	0.9	1.1	1	0.9	1	1.1	1.1	<1	1.1	1.1	-	-	1.2	1	1	1	1.1	-	-
Selenium	µg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.1	<10	<10	-	-	<10	<0.1	<10	<10	<10	10	1
Silver	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.4	0.3	<0.1	<0.3	<0.3	-	-	<0.3	<0.1	<0.3 ^(e)	<0.3	<0.3	-	0.1
Strontium	µg/L	8	6	7	7	7	7	8	6	7	9	8	8	6.7	8	9	-	-	9	9	9	8	8	-	-
Thallium	µg/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	-	-	<0.4	-	<0.4	<0.4	<0.4	-	0.8
Titanium	µg/L	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	-	<3	-	<3	<3	<3	-	-
Uranium	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.05	<0.3	<0.3	-	-	<0.3						

Table IX.6-2
Baseline Water Quality in Snap Lake at Fresh Water Intake Site (AS1) in 2000 and 2001 (Continued)

Parameter	Units	2000											2001											Water Quality Guidelines ^(a)		
		26-Jun	17-Jul	24-Jul	21-Aug	28-Aug	4-Sep	18-Sep	25-Sep	16-Oct	20-Nov	18-Dec	15-Jan		12-Feb	12-Mar	18-Mar	22-Mar	15-Apr	15-Apr	14-May	11-Jun	11-Jun	Drinking Water	Aquatic Life	
Dissolved Metals																										
UL													UL													
Aluminum	µg/L	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	2.7	<30	<30	-	-	<30	6.5	<30	-	-	-	-	
Antimony	µg/L	0.8	<0.1	<0.1	<0.1 ^(b)	0.8	0.8	<0.1	<0.1	<0.1	0.5	0.1	1.1	0.27	0.9	1.0	-	-	0.9	0.14	0.7	-	-	-	-	
Arsenic	µg/L	-	-	<1	-	-	-	-	-	-	-	-	-	0.12	-	-	-	-	0.09	-	-	-	-	-	-	
Barium	µg/L	3.2	2.9	3.5	2.8	2.7	2.9	2.5	2.1	2.3	2.9	3.2	3.1	2.94	3.4	4.6	-	-	3.7	4.04	3.9	-	-	-	-	
Beryllium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	0.1	-	-	-	-	
Bismuth	µg/L	<10	<5	<5	<5	<5	<5	<0.1	<5.0	<5	<5.0	<5	<5	-	<5	<5.0	-	-	0.2	-	<5	-	-	-	-	
Boron	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	
Cadmium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	-	-	<0.1	<0.05	<0.1	-	-	-	-	
Cesium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	<0.1	-	<0.1	-	-	-	-	
Chromium	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.67	<0.3	0.4	-	-	<0.3	<0.06	<0.3	-	-	-	-	
Cobalt	µg/L	<0.1	0.1	<0.1	<0.1	0.2	0.3	0.1	0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	0.2	-	-	0.1	<0.1	0.1	-	-	-	-	
Copper	µg/L	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.6	1.1	0.6	0.7	1.8	1.4	1.2	2.3	-	-	0.7	0.7	0.7	-	-	-	-	
Iron	mg/L	<0.03	<0.03	<0.03	0.06	0.12	0.1	0.07	0.06	0.08	0.08	<0.03	<0.03	0.015	0.05	0.04	-	-	0.03	0.008	<0.03	-	-	-	-	
Lead	µg/L	0.1	<0.1 ^(b)	<0.1	0.2	0.1	0.2	<0.1	0.2	0.4	0.2	<0.1	0.1	<0.05	<0.1	0.2	-	-	0.3	0.19	0.1	-	-	-	-	
Lithium	µg/L	0.9	1	0.9	0.9	1	0.9	1.0	0.8	0.8	0.9	1.1	0.9	0.7	1	1.1	-	-	1	1	1.1	-	-	-	-	
Manganese	µg/L	3.2	2.8	2.7	5.1	10	8	6.5	4.7	4.6	21.6	10.3	4.9	3.6	9.1	9.9	-	-	3.5	3.7	6.6	-	-	-	-	
Mercury	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	
Molybdenum	µg/L	0.1	0.1	<0.1	0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	<0.1	0.08	<0.1	<0.1	-	-	0.1	<0.06	0.1	-	-	-	-	
Nickel	µg/L	0.6	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.5	0.5	0.4	0.31	0.7	46.1	-	-	0.5	0.47	0.5	-	-	-	-	
Selenium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<1	<1	-	-	<1	<0.1	<1	-	-	-	-	
Silver	µg/L	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	0.1	-	-	-	-	
Strontium	µg/L	6.8	7	6.6	6.5	6.7	6.7	7.5	5.9	7.8	8.6	8.7	8.1	6.5	9	10.4	-	-	9.8	10	9.2	-	-	-	-	
Rubidium	µg/L	1	1	1	1	1	1	1	1	1	1	1.2	1	<1	1	1.1	-	-	1.1	1	1.2	-	-	-	-	
Thallium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	<0.1	-	<0.1	-	-	-	-	
Titanium	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	0.3	-	-	<0.3	-	<0.3	-	-	-	-	
Uranium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	-	-	<0.1	<0.05	<0.1	-	-	-	-	
Vanadium	µg/L	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.21	<0.1	0.1	-	-	<0.1	<0.05	0.2	-	-	-	-	
Zinc	µg/L	12	13	14	14	<10	<10	18	<10	14	33	31	28	18.3	27	40	-	-	54	39.7	45	-	-	-	-	
Biological Parameters																										
Fecal Coliform	CFU/100mL	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Coliform	CFU/100mL	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	
E.Coli	CFU/100mL	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	
BOD	mg/L	-	-	-	-	-	-	-	-	-	-	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	
Organics																										
Oil and Grease	mg/L	1.6	1.2	0.2	<0.2	<0.2	1	1	1.1	2	<0.2	0.8	1.1	<1	<0.2	<0.2	-	<0.2	3.3	1	0.9	0.2	0.2	-	-	

^(a)All guidelines are from Canadian Council of Ministers of the Environment (CCME 1999), with the exception of the aquatic life guideline for chloride, which is from United States Environmental Protection Agency (U.S. EPA 1999). Hardness dependent guidelines are determined for a median baseline hardness of 6 mg/L, and the ammonia guideline was determined using a median baseline pH of 6.7 and temperature of 15°C

^(b) Aesthetic objective

^(c)UL indicates Ultra-Low metal analysis. One of the intake sample collected on January 15 and April 15 2001 were analyzed using Ultra-Low Level methods. Their duplicates and the other intake samples were analyzed using Low-Level methods.

^(d)Total nickel was reported as <30 µg/L on May 14 2001, this value was assumed to be a lab DL error so was adjusted to the correct DL of <1 µg/L for statistical summaries

^(e)Total silver was reported as < 1 µg/L on May 14 2001, this value was assumed to be a lab DL error so was adjusted to the correct DL of <0.3 µg/L for statistical summaries

^(f)Dissolved antimony was reported as <10 ug/L on August 21 2000, this value was assumed to be a lab DL error so was adjusted to the correct DL of <0.1 for statistical summaries

^(g)Dissolved lead was reported as <0.2 µg/L on July 17 2000, this value was assumed to be a lab DL error so was adjusted to the correct DL of <0.1µg/L for statistical summaries
< = less than detection limit (refer to glossary for definition)

^(h)An approved discharge from the water management pond (formerly the Processed Kimberlite Containment area) to Snap Lake occurred in late winter 2001.

Notes: mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; TCU = total color units; NTU = nephelometric units; mgCO₃/L = milligrams of bicarbonate per centimetre; µg/L = micrograms per litre; CFU/100mL = colony forming units per 100 millilitres;

Table IX.6-3
Baseline Water Quality in the Original Reference Lake

Parameter	Units	North Lake (Original Reference Lake)						Water Quality Guidelines ^(a)	
		WQR10		WQR11		WQR12		Drinking Water	Aquatic Life
		24-Mar-99		24-Mar-99		24-Mar-99			
Conventional Parameters									
pH		6.70	6.45	6.72	6.53	6.69	6.57	6.5-8.5	6.5-9.0
Alkalinity	mg/L	9	9	8	8	9	8	-	-
Total Dissolved Solids	mg/L	15	13	19	17	15	22	=500 ^(b)	-
Total Suspended Solids	mg/L	<3	<3	<3	<3	<3	<3	-	-
Total Hardness	mg/L	11	11	9	9	10	9	-	-
Conductivity	uS/cm	32	30	27	26	29	26	-	-
Turbidity	NTU	-	-	-	-	-	-	1	short-term increase <8 long-term increase <2
Nutrients									
Ammonia	mg/L	0.025	0.029	0.025	0.026	0.021	0.024	-	11.1
Nitrate + Nitrite	mg/L	<0.008	0.012	<0.008	<0.008	<0.008	0.008	-	-
Total Phosphorus	mg/L	0.023	0.015	0.010	0.009	0.013	0.014	-	-
Dissolved Phosphorus	mg/L	-	-	-	-	-	-	-	-
Orthophosphate	mg/L	0.004	0.004	0.004	0.004	0.004	0.004	-	-
Total Kjeldahl Nitrogen	mg/L	5	-	-	-	-	-	-	-
Total Organic Carbon	mg/L	-	4.4	4.0	3.4	4.2	3.5	-	-
Major Ions									
Bicarbonate	mgCO ₃ /L	9.3	9.2	8.0	7.5	8.5	7.5	-	-
Calcium	mg/L	2.54	2.54	2.12	2	2.26	1.96	-	-
Chloride	mg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	=250 ^(b)	230
Fluoride	mg/L	-	-	-	-	-	-	1.5	-
Magnesium	mg/L	1.15	1.05	0.97	0.88	1.03	0.9	-	-
Potassium	mg/L	0.95	0.8	0.82	0.71	0.87	0.72	-	-
Sodium	mg/L	0.83	0.7	0.72	0.63	0.77	0.64	=200 ^(b)	-
Sulphate	mg/L	4	13	3	<3	4	3	=500 ^(b)	-
Total Metals									
Aluminum	µg/L	<30	<30	<30	<30	<30	<30	-	100
Antimony	µg/L	0.6	0.3	0.6	0.6	0.5	0.5	-	-
Arsenic	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	25	5
Barium	µg/L	4.4	7.5	3.5	3.9	4.2	3.9	1000	-
Beryllium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Bismuth	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Cadmium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	0.003
Cesium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Chromium	µg/L	<2	<2	<2	<2	<2	<2	50	1
Cobalt	µg/L	0.1	0.1	0.1	0.1	0.1	0.1	-	-
Copper	µg/L	1.1	1.2	0.8	0.7	0.9	0.7	=1000 ^(b)	2
Iron	mg/L	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	=0.3 ^(b)	0.3
Lead	µg/L	0.3	<0.2	0.5	<0.2	0.9	<0.2	10	1
Lithium	µg/L	1.5	1.9	1.3	1.2	1.3	1.1	-	-
Manganese	µg/L	2.1	1	2.0	3.2	2.0	2.9	=50 ^(b)	
Mercury	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1	0.1
Molybdenum	µg/L	0.1	<0.1	0.1	<0.1	0.1	<0.1	-	73
Nickel	µg/L	0.8	1.3	0.7	0.6	0.7	0.6	-	25
Selenium	µg/L	<10	<10	<10	<10	<10	<10	10	1
Silver	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0.1
Strontium	µg/L	11.6	11.3	10.1	9.3	11.3	10	-	-
Thallium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0.8
Titanium	µg/L	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	-	-
Uranium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20	-
Vanadium	µg/L	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	-	-
Zinc	µg/L	<10	<10	<10	<10	<10	<10	=5000 ^(b)	30
Dissolved Metals									
Aluminum	µg/L	<30	<30	<30	<30	<30	<30	-	-
Antimony	µg/L	0.6	0.5	0.5	0.3	0.9	0.7	-	-
Arsenic	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-
Barium	µg/L	4.4	4.9	3.6	33.6	4.1	3.9	-	-
Beryllium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Bismuth	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Cadmium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Cesium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Chromium	µg/L	1.1	0.8	<0.2	<0.2	0.2	0.2	-	-
Cobalt	µg/L	0.1	0.1	0.1	<0.1	0.2	0.1	-	-
Copper	µg/L	1.0	1	0.8	2.8	0.8	0.7	-	-
Iron	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	-
Lead	µg/L	0.2	0.3	<0.2	0.2	0.2	0.2	-	-
Lithium	µg/L	1.5	1.2	1.2	1.2	1.3	1.1	-	-
Manganese	µg/L	0.3	3.5	0.1	0.7	0.2	0.4	-	-
Mercury	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Molybdenum	µg/L	0.1	<0.1	0.1	0.1	0.1	<0.1	-	-
Nickel	µg/L	0.8	0.9	0.6	0.7	0.7	0.7	-	-
Selenium	µg/L	<10	<10	<10	<10	<10	<10	-	-
Silver	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Strontium	µg/L	11.4	11.3	10.3	9.6	10.9	9.8	-	-
Thallium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Titanium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-
Uranium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Vanadium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
Zinc	µg/L	<10	<10	<10	<10	<10	<10	-	-

^(a)All guidelines are from Canadian Council of Ministers of the Environment (CCME 1999), with the exception of the aquatic life guideline for chloride, which is from United States Environmental Protection Agency (U.S. EPA 1999). Hardness dependent guidelines are determined for a median baseline hardness of 6 mg/L, and the ammonia guideline was determined using a median baseline pH of 6.7 and temperature of 15°C.

^(b) Aesthetic objective

< = less than detection limit (refer to glossary for definition)

Notes: mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; NTU = nephelometric units; mgCO₃/L = milligrams of bicarbonate per centimetre; µg/L = micrograms per litre; WQR = water quality reference.

Table IX.6-4
Baseline Water Quality in the New Reference Lake

Parameter	Units	Reference Lake			Water Quality Guidelines ^(a)	
		WQR1	WQR3	WQR7	Drinking Water	Aquatic Life
		12-Aug-99	12-Aug-99	12-Aug-99		
Conventional Parameters						
pH		6.5	6.46	6.6	6.5-8.5	6.5-9.0
Alkalinity	mg/L	4	4	4	-	-
Total Dissolved Solids	mg/L	22	<10	19	=500 ^(b)	-
Total Suspended Solids	mg/L	4	3	4	-	-
Total Hardness	mg/L	5	4	5	-	-
Conductivity	µS/cm	17	13	18	-	-
Turbidity	NTU	0.5	0.7	0.4	1	short-term increase <8 long-term increase <2
Nutrients						
Ammonia	mg/L	0.045	0.044	0.075	-	11.1
Nitrate + Nitrite	mg/L	<0.008	<0.008	<0.008	-	-
Total Phosphorus	mg/L	0.012	0.014	0.014	-	-
Dissolved Phosphorus	mg/L	0.012	0.009	0.011	-	-
Orthophosphate	mg/L	<0.002	<0.002	<0.002	-	-
Total Kjeldahl Nitrogen	mg/L	0.2	0.2	0.2	-	-
Dissolved Organic Carbon	mg/L	4	3	4	-	-
Total Organic Carbon	mg/L	3.6	3.3	3.7	-	-
Major Ions						
Calcium	mg/L	1.2	1.1	1.4	-	-
Chloride	mg/L	0.5	0.3	0.7	=250 ^(b)	230
Fluoride	mg/L	0.1	0.1	0.1	1.5	-
Magnesium	mg/L	0.4	0.4	0.4	-	-
Potassium	mg/L	0.2	0.2	0.2	-	-
Sodium	mg/L	0.5	0.5	0.6	=200 ^(b)	-
Sulphate	mg/L	<3	<3	<3	=500 ^(b)	-
Total Metals						
Aluminum	µg/L	<30	<30	<30	-	100
Antimony	µg/L	<0.5	<0.5	<0.5	-	-
Arsenic	µg/L	<0.2	<0.2	<0.2	25	5
Barium	µg/L	2.0	2.0	2.0	1000	-
Beryllium	µg/L	<2	<2	<2	-	-
Bismuth	µg/L	<0.4	<0.4	<0.4	-	-
Cadmium	µg/L	<0.3	<0.3	<0.3	5	0.003
Cesium	µg/L	<0.4	<0.4	<0.4	-	-
Chromium	µg/L	<3	<3	<3	50	1
Cobalt	µg/L	<1	<1	<1	-	-
Copper	µg/L	<2	<2	<2	=1000 ^(b)	2
Iron	mg/L	0.04	0.04	0.05	=0.3 ^(b)	0.3
Lead	µg/L	<1	1	<1	10	1
Lithium	µg/L	<3	<3	<3	-	-
Manganese	µg/L	4.0	3.0	5.0	=50 ^(b)	-
Mercury	µg/L	<0.01	<0.01	<0.01	1	0.1
Molybdenum	µg/L	<1	<1	<1	-	73
Nickel	µg/L	<1	<1	<1	-	25
Selenium	µg/L	<10	<10	<10	10	1
Silver	µg/L	<0.3	<0.3	<0.3	-	0.1
Strontium	µg/L	7.0	7.0	9.0	-	-
Thallium	µg/L	<0.4	<0.4	<0.4	-	0.8
Titanium	µg/L	<3	<3	<3	-	-
Uranium	µg/L	<0.3	<0.3	<0.3	20	-
Vanadium	µg/L	<1	<1	<1	-	-
Zinc	µg/L	<10	<10	<10	=5000 ^(b)	30
Dissolved Metals						
Aluminum	µg/L	<30	<30	<30	-	-
Antimony	µg/L	2.3	2.1	1.6	-	-
Arsenic	µg/L	<0.2	<0.2	<0.2	-	-
Barium	µg/L	2.0	1.8	2.2	-	-
Beryllium	µg/L	<0.2	<0.2	<0.2	-	-
Bismuth	µg/L	<0.1	<0.1	<0.1	-	-
Cadmium	µg/L	<0.1	<0.1	<0.1	-	-
Cesium	µg/L	<0.1	<0.1	<0.1	-	-
Chromium	µg/L	<0.3	<0.3	<0.3	-	-
Cobalt	µg/L	<0.1	<0.1	<0.1	-	-
Copper	µg/L	0.5	0.6	0.5	-	-
Iron	mg/L	<0.03	0.030	<0.03	-	-
Lead	µg/L	1.0	0.2	0.2	-	-
Lithium	µg/L	0.8	0.7	0.8	-	-
Manganese	µg/L	1.0	0.8	1.3	-	-
Mercury	µg/L	<0.01	<0.01	<0.01	-	-
Molybdenum	µg/L	<1	<1	<1	-	-
Nickel	µg/L	<0.1	<0.1	<0.1	-	-
Selenium	µg/L	<1	<1	<1	-	-
Silver	µg/L	<0.1	<0.1	<0.1	-	-
Strontium	µg/L	7.6	7.0	9.4	-	-
Thallium	µg/L	<0.1	<0.1	<0.1	-	-
Titanium	µg/L	<0.3	<0.3	<0.3	-	-
Uranium	µg/L	<0.1	<0.1	<0.1	-	-
Vanadium	µg/L	<0.1	<0.1	<0.1	-	-
Zinc	µg/L	<10	<10	<10	-	-

^(a) All guidelines are from Canadian Council of Ministers of the Environment (CCME 1999), with the exception of the aquatic life guideline for chloride, which is from United States Environmental Protection Agency (U.S. EPA 1999). Hardness dependent guidelines are determined for a median baseline hardness of 6 mg/L, and the ammonia guideline was determined using a median baseline pH of 6.7 and temperature of 15°C

^(b) Aesthetic objective

< = less than detection limit (refer to glossary for definition)

Notes: mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; NTU = nephelometric units; µg/L = micrograms per litre; WQR = water quality reference

Table IX.6-5
Baseline Water Quality in Small Lakes in the Snap Lake Watershed

Parameter	Units	Downstream Lake				Lakes Near Active Mine Area												North Shore Lakes								Water Quality Guidelines ^(d)			
		WQ5				IL1				IL3				IL4				IL5				NL1		NL2				NL3	
		1999		2001		2001		2001		2001		2001		2001		2001		2001		2001		2001		2001		2001		2001	
		24-Mar 2.3m ^(b)	24-Mar 2.3m	12-Aug Int ^(c)	11-Jul	24-Mar	24-Jul Int	12-Aug Int	26-Jun Int	12-Aug Int	26-Jun Int	12-Aug ^(b) Int	26-Jun Int	12-Aug ^(b) Int	26-Jun Int	12-Aug Int	24-Mar 2.5m	12-Aug Int	24-Mar 2.2m	12-Aug Int	24-Mar 4m	12-Aug Int	24-Mar Int	12-Aug Int					
Conventional Parameters																													
pH (laboratory measured)	pH	6.7	6.6	6.6	6.8	6.4	6.6	6.5	6.2	6.1	6.1	-	6.4	6.3	6.5	6.5	6.3	6.5	6.5	6.5	6.6	6.5	6.5-8.5	6.5-9.0					
pH (in-situ)	pH	6.5	-	6.7	-	6.1	-	6.7	-	6.6	-	-	6.5	-	7.2	-	7.2	-	7.2	-	7.3	7.5	-	-					
Alkalinity	mg/L	6	6.2	4	6	22	4	5	3	3	3	-	3	3	11	5	11	5	7	5	4	-	-						
Total Dissolved Solids	mg/L	15	15	12	20	52	12	27	41	45	47	-	33	19	41	19	26	10	12	27	27	=500 ^(c)	-						
Total Suspended Solids	mg/L	<3	4	4	<3	22	18	6	<3	5	4	-	4	9	<3	<3	<3	<3	<3	<3	<3	-	-						
Total Hardness	mg/L	7	7	5	6	23	6	6	4	5	5	-	4	4	18	6	15	5	7	10	7	-	-						
Conductivity	µS/cm	21	21	19	21.7	59	16	18	12	13	13	-	12	11	50	7	40	7	19	27	19	-	-						
Turbidity	NTU	-	-	0.6	0.2	-	1.5	1.4	1.7	3.5	2.1	-	1.2	1.3	-	0.7	-	0.8	-	0.9	0.7	1	short-term increase <8 long-term increase <2						
Nutrients																													
Ammonia	mg/L	0.019	0.015	0.041	<0.005	0.225	0.005	0.047	0.013	0.053	0.016	-	0.008	0.072	0.053	0.024	0.036	0.091	0.040	0.033	0.072	-	-	11.1					
Nitrate + Nitrite	mg/L	0.035	0.015	<0.008	0.065	0.038	0.008	<0.008	0.008	<0.008	0.008	-	<0.008	<0.008	0.014	<0.008	0.026	<0.008	0.020	<0.008	<0.008	-	-						
Total Phosphorus	mg/L	0.011	0.009	0.008	0.001	0.025	0.010	0.017	0.015	0.037	0.016	-	0.009	0.020	0.012	0.017	0.008	0.016	0.014	0.016	<0.004	-	-						
Dissolved Phosphorus	mg/L	-	-	0.010	<0.001	-	-	0.013	-	0.021	-	-	-	-	0.013	-	0.010	-	0.012	-	0.014	0.002	-	-					
Orthophosphate	mg/L	0.004	0.004	<0.002	<0.001	0.004	0.002	<0.002	0.002	0.002	0.002	-	<0.002	<0.002	0.004	<0.002	0.004	0.003	0.004	<0.002	<0.002	-	-						
Total Kjeldahl Nitrogen	mg/L	-	-	0.3	0.06	-	0.5	0.3	0.5	0.5	0.6	-	0.3	0.4	-	0.3	-	0.2	-	0.2	0.2	-	-						
Dissolved Organic Carbon	mg/L	-	-	3	3	-	7	7	12	13	14	-	9	7	-	6	-	4	-	4	5	-	-						
Total Organic Carbon	mg/L	3.6	3.8	2.7	3	11.0	6.9	6.7	12.0	13.0	14.0	-	9.2	7.0	6.4	6.1	7.1	4.4	5.2	4.3	5.3	-	-						
Major Ions																													
Bicarbonate	mgCO ₃ /L	6.3	6.2	-	7	21.6	4.2	-	-	-	-	-	-	-	-	11.3	-	10.7	-	6.8	-	-	-	-					
Calcium	mg/L	1.6	1.6	1.3	1.42	4.2	1.0	1.1	0.8	0.9	1.2	-	0.9	0.9	3.6	1.1	3.0	1.1	1.5	1.9	1.2	-	-						
Chloride	mg/L	0.2	0.2	0.8	<1	0.2	0.4	<0.2	0.2	0.5	11.7	-	<0.2	0.2	<0.2	0.2	0.2	<0.2	<0.2	<0.2	<0.2	=250 ^(c)	230						
Fluoride	mg/L	-	-	0.05	0.06	-	0.1	0.1	0.1	0.1	0.1	-	<0.05	0.04	-	0.1	-	0.1	-	0.04	0.1	1.5	-						
Magnesium	mg/L	0.73	0.71	0.50	0.5	3	0.8	0.8	0.6	0.6	0.5	-	0.5	0.5	2.3	0.7	1.7	0.5	0.7	1.2	0.8	-	-						
Potassium	mg/L	0.54	0.53	0.30	0.37	0.99	0.4	0.3	0.3	0.2	0.3	-	0.2	0.2	1.3	0.4	1.0	0.3	0.4	0.8	0.5	-	-						
Silica	mg/L	-	-	-	-	-	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Sodium	mg/L	0.67	0.67	0.56	0.9	1.84	0.6	0.6	0.5	0.5	0.5	-	0.5	0.5	1.0	0.5	1.0	0.5	0.7	0.5	0.5	=200 ^(c)	-						
Sulphate	mg/L	<3	<3	<3	1.36	7	3	<3	6	6	8	-	<3	3	8	3	5	3	3	3	3	=500 ^(c)	-						
Total Metals																													
Aluminum	µg/L	<30	<30	<30	7	340.5	32	42	110	149	132	-	61.2	69	<30	<30	30	<30	30	<30	32	-	-	100					
Antimony	µg/L	0.5	0.6	<0.5	0.04	0.9	0.6	<0.5	<0.5	<0.5	0.5	-	0.5	<0.5	0.6	<0.5	0.5	<0.5	0.6	<0.5	<0.5	-	-						
Arsenic	µg/L	<0.2	<0.2	<0.2	0.08	<0.2	<0.2	<0.2	0.6	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	25	5						
Barium	µg/L	2.9	3	2.0	2.42	15.0	2.3	2.0	2.9	3.0	3.3	-	2.2	2.0	7.1	2.0	6.8	3.0	4.0	2.0	1000	-	-						
Beryllium	µg/L	<0.1	<0.1	<2	<0.2	0.4	<2	<2	<2	<2	<2	-	<2	<2	<0.1	<2	<0.1	<2	<0.1	<2	<2	-	-						
Bismuth	µg/L	<0.1	<0.1	<0.4	<0.03	<0.1	<0.4	<0.4	<0.4	<0.4	<0.4	-	<0.4	<0.4	<0.1	<0.4	<0.1	<0.4	<0.1	<0.4	<0.4	-	-						
Cadmium	µg/L	<0.1	<0.1	<0.3	<0.05	<0.1	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.1	<0.3	<0.1	<0.3	<0.1	<0.3	<0.3	5	0.003						
Cesium	µg/L	<0.1	<0.1	<0.4	<0.1	0.1	<0.4	<0.4	<0.4	<0.5	<0.4	-	<0.4	<0.4	<0.1	<0.4	<0.1	<0.4	<0.1	<0.4	<0.4	-	-						
Chromium	µg/L	<2	<2	<3	<0.06	5	<3	<3	<3	<3	<3	-	<3	<3	<2	<3	<2	<3	<2	<3	<3	50	1						
Cobalt	µg/L	0.1	0.1	<1	<0.1	2.7	<1	<1	<1	<1	<1	-	<1	<1	0.3	<1	0.4	<1	0.2	<1	<1	-	-						
Copper	µg/L	0.8	0.8	<2	<0.6	5.9	<2	2.0	<2	<2	<2	-	<2	<2	1.4	<2	2.3	<2	0.8	<2	<2	=1000 ^(c)	2						
Iron	µg/L	<0.02	<0.02	0.03	0.032	1.4	0.2	0.2	0.5	0.6	0.6	-	1.1	0.4	0.1	0.2	0.1	0.1	0.1	0.1	0.1	=0.3 ^(c)	0.3						
Lead	µg/L	2.6	2.1	<1	<0.05	0.7	<1	<1	1.0	<1	1.1	-	<1	<1	0.2	<1	0.3	<1	0.4	<1	<1	10	1						
Lithium	µg/L	1.0	1	<3	0.8	3	<3	<3	<3	<3	<3	-	<3	<3	1.6	<3	1.9	<3	1.3	<3	<3	-	-						
Manganese	µg/L	2.2	2.2	3.0	3.1	61.6	3.1	4.0	5.3	6.0	5.9	-	5.2	3.0	20.2	4.0	29.6	11.0	4.3	3.0	6.0	=50 ^(c)	-						
Mercury	µg/L	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1	0.1						
Molybdenum	µg/L	<0.1	<0.1	<1	0.06	0.8	<1	<1	<1	<1	<1	-	<1	<1	0.1	<1	0.3	<1	0.2	<1	<1	-	73						
Nickel	µg/L	0.2	0.2	<1	0.14	2.3	<1	<1	<1	<1	<1	-	<1	<1	1.9	<1	1.5	<1	0.2	<1	<1	-	25						
Selenium	µg/L	<10	<10	<10	0.1	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	1						
Silver	µg/L	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.1	<0.3	<0.1	<0.3	<0.1	<0.3	<0.3	-	0.1						
Strontium	µg/L	9.0	9.1	8.0	10.3	22.6	6.2	6.0	5.8	5.0	6.7	-	5.3	4.0	13.7	6.0	13.6	8.0	9.8	8.0	6.0	-	-						
Thallium	µg/L	<0.1	<0.1	<0.4	<0.03	<0.1	1.7	<0.4	1.0	<0.4	0.9	-	<0.4	<0.4	<0.1	<0.4	<0.1	<0.4	<0.1	<0.4	<0.4	-	0.8						
Titanium	µg/L	0.2	<0.2	<3	<0.1	11.8	<3	<3	<3	<3	<3	-	<3	<3	0.3	<3	0.3	<3	0.7	<3	<3	-	-						
Uranium	µg/L	<0.1	<0.1	<0.3	<0.05	0.2	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.1	<0.3	<0.1	<0.3	<0.1	<0.3	<0.3	20	-						
Vanadium	µg/L	<0.1	<0.1	<1	0.09	0.8	<1	<1	<1	<1	<1	-	<1	<1	<0.1	<1	<0.1	<1	0.1	<1	<1	-	-						
Zinc	µg/L	<10	<10	<10	<0.8	13	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	=5000 ^(c)	-						

Table IX.6-5
Baseline Water Quality in Small Lakes in the Snap Lake Watershed (Continued)

Parameter	Units	Downstream Lake				Lakes Near Active Mine Area												North Shore Lakes								Water Quality Guidelines ^(a)	
		WQ5				IL1			IL3		IL4			IL5			NL1		NL2		NL3		NL4				
		1999		12-Aug Int ^(c)	2001		24-Mar 2m	24-Jul Int	12-Aug Int	26-Jun Int	12-Aug Int	26-Jun Int	12-Aug ^(b) Int	1999		24-Mar 2.5m	12-Aug Int	24-Mar 2.2m	12-Aug Int	24-Mar 4m	12-Aug Int	24-Mar Int					
		24-Mar	24-Mar		11-Jul	26-Jun								12-Aug	26-Jun								12-Aug				
		2.3m ^(b)	2.3m		Int ^(c)	26-Jun								12-Aug	26-Jun								12-Aug				
Dissolved Metals																											
Aluminum	µg/L	<30	<30	<30	5.8	56	74	<30	-	138	-	-	-	46.0	<30	<30	<30	<30	<30	<30	<30	-	-				
Antimony	µg/L	0.5	0.4	1.6	0.08	0.6	0.7	1.9	-	0.9	-	-	-	1.4	0.7	1.7	1.0	1.6	0.7	1.9	1.8	-	-				
Arsenic	µg/L	<0.2	<0.2	<0.2	0.08	<0.2	<0.2	<0.2	-	<0.2	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-				
Barium	µg/L	2.8	2.7	2.0	2.38	10.1	2.2	2.0	-	3.0	-	-	-	1.7	6.8	2.3	6.5	2.5	3.6	2.2	2.3	-	-				
Beryllium	µg/L	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2	<0.2	-	<0.2	-	-	-	<0.2	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2	<0.2	-	-				
Bismuth	µg/L	<0.1	<0.1	<0.1	<0.03	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	0.3	<0.1	0.6	<0.1	<0.1	<0.1	-	-				
Boron	µg/L	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Cadmium	µg/L	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-				
Cesium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-				
Chromium	µg/L	1.0	0.6	<0.3	<0.06	0.9	<0.3	76.4	-	<0.3	-	-	-	<0.3	<2	<0.3	1.0	<0.3	18.7	<0.3	0.5	-	-				
Cobalt	µg/L	0.1	<0.1	<0.1	<0.1	1.5	0.1	0.2	-	0.2	-	-	-	<0.1	0.2	<0.1	0.4	<0.1	0.2	<0.1	<0.1	-	-				
Copper	µg/L	0.7	0.7	0.6	0.7	3.1	1.4	2.5	-	1.0	-	-	-	1.1	1.5	1.0	2.4	0.7	1.3	1.1	1.7	-	-				
Iron	mg/L	<0.02	<0.02	<0.03	0.014	0.76	0.072	0.127	-	0.467	-	-	-	0.259	0.02	0.085	0.09	0.068	<0.02	0.072	0.063	-	-				
Lead	µg/L	1.4	3	0.5	0.06	0.2	0.3	0.2	-	0.2	-	-	-	<0.1	0.4	0.1	0.9	0.2	0.7	0.8	1.3	-	-				
Lithium	µg/L	1.0	0.9	1.0	0.8	1.8	0.8	0.9	-	1.3	-	-	-	0.9	1.7	1.2	1.9	1.2	1.2	1.3	1.4	-	-				
Manganese	µg/L	0.6	0.6	0.4	1.5	53.0	1.2	0.8	-	4.8	-	-	-	1.9	13.9	0.7	28.0	0.8	0.8	1.0	0.9	-	-				
Mercury	µg/L	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	-	<0.01	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-				
Molybdenum	µg/L	<0.1	0.1	<1	<0.06	0.4	0.2	0.5	-	0.2	-	-	-	0.2	0.1	0.2	0.3	0.2	0.2	0.1	0.3	-	-				
Nickel	µg/L	0.3	0.2	0.1	0.86	1.4	0.4	0.7	-	0.5	-	-	-	0.2	1.8	<0.1	1.7	0.1	0.3	0.7	0.7	-	-				
Selenium	µg/L	<10	<10	<1	<0.1	<10	<1	<1	-	<1	-	-	-	<1	<10	<1	<10	<1	<10	<1	<1	-	-				
Silver	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-				
Strontium	µg/L	9.0	8.6	8.1	10.2	20.4	5.8	5.0	-	6.5	-	-	-	4.7	13.6	5.7	13.5	7.6	9.4	8.0	6.4	-	-				
Thallium	µg/L	<0.1	<0.1	<0.1	<0.03	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-				
Titanium	µg/L	<0.2	<0.2	<0.3	<0.1	0.4	<0.3	39.3	-	1.6	-	-	-	0.4	<0.2	<0.3	0.2	<0.3	0.2	<0.3	<0.3	-	-				
Uranium	µg/L	<0.1	<0.1	<0.1	<0.05	0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-				
Vanadium	µg/L	<0.1	<0.1	<0.1	0.05	<0.1	<0.1	<0.1	-	0.3	-	-	-	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-				
Zinc	µg/L	<10	<10	<10	1.2	<10	<10	11	-	<10	-	-	-	<10	<10	<10	<10	<10	<10	<10	<10	-	-				

^(a)All guidelines are from Canadian Council of Ministers of the Environment (CCME 1999), with the exception of the aquatic life guideline for chloride, which is from United States Environmental Protection Agency (U.S. EPA 1999). Hardness dependent guidelines are determined for a median baseline hardness of 6 mg/L, and the ammonia guideline was determined using a median baseline pH of 6.7 and temperature of 15°C

^(b)Sample taken from specified water depth

^(c)Integrated depth sample

^(d)Too shallow to sample

^(e)Aesthetic objective

^(f)UL indicates Ultra-Low metal analysis. WQS (July 11 2001) was analyzed using Ultra-Low methods. The remainder of samples were analyzed using Low-Level methods.

< = less than detection limit (refer to glossary for definition)

Notes: mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; NTU = nephelometric units; mgCO₃/L = milligrams of bicarbonate per centimetre; µg/L = micrograms per litre; m = metre; WQ = water quality; IL = inland lake; NL = northern lake

Table IX.6-6
Snap Lake Temperature (°C) (Depth Profiles)

(a) Snap Lake *In-situ* Lake Depth Profiles of Temperature (°C)

Depth (m)	Temperature (°C)													
	WQ1			WQ2		WQ3			WQ4			WQ7		
	29-Mar-99	9-Jul-99	12-Aug-99	29-Mar-99	12-Aug-99	29-Mar-99	9-Jul-99	12-Aug-99	29-Mar-99	12-Aug-99	12-Aug-99	29-Mar-99	8-Jul-99	12-Aug-99
0	-	13.2	-	-	-	-	12.9	-	-	-	-	-	14.7	-
1	-0.02	13.1	13.7	-0.07	14.1	0.59	12.9	13.9	-0.06	13.8	10.7	-0.1	14.7	13.8
2	-	12.9	13.7	0.42	13.9	0.63	12.8	13.8	0.77	13.7	10.7	0.26	14.6	13.8
3	0.62	11.9	13.7	1.07	13.9	0.79	12.5	13.8	1.97	13.7	10.7	0.82	14	13.8
4	-	11.6	13.7	2.44	13.9	-	12.1	-	3.03	13.7	10.7	1.28	13.2	13.8
5	1.06	11.5	13.6	3.13	13.9	-	11.8	13.8	-	-	10.6	1.74	12.3	13.8
6	-	11.5	13.6	3.14	-	-	11.5	13.8	-	-	10.6	2.04	11.8	13.8
6.5	-	-	-	3.33	-	-	-	-	-	-	-	-	-	-
7	1.41	-	13.6	-	-	-	-	13.8	-	-	10.5	-	-	13.7
7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	13.5	-	-	-	-	13.8	-	-	10.5	-	-	13.5
9	1.93	-	13.4	-	-	-	-	13.7	-	-	-	-	-	-
10	-	-	13.4	-	-	-	-	13.7	-	-	-	-	-	-
11	2.24	-	13.4	-	-	-	-	13.6	-	-	-	-	-	-
12	-	-	13.4	-	-	-	-	-	-	-	-	-	-	-
13	2.26	-	13.3	-	-	-	-	-	-	-	-	-	-	-
14	-	-	13.3	-	-	-	-	-	-	-	-	-	-	-
15	2.32	-	13.3	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	2.36	-	-	-	-	-	-	-	-	-	-	-	-	-
18	2.38	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes: °C = degrees Celcius; m = metre; WQ = water quality

(b) Reference Lake *In-situ* Depth Profile of Temperature (°C)

Depth (m)	Temperature (°C)			
	WQR1		WQR3	WQR7
	16-Jul-99	11-Aug-99	11-Aug-99	11-Aug-99
0	-	-	-	-
1	14.5	14.1	14.1	14.3
2	14.3	14	13.8	14.2
3	14.2	13.9	13.7	14.1
4	14.2	13.9	13.7	14.1
5	14.2	13.8	13.6	13.9
5.5	-	-	-	13.7
6	14.1	13.6	13.6	-
7	14.1	13.6	-	-
8	-	13.5	-	-
8.5	-	13.5	-	-

Notes: °C = degrees Celcius; m = metre; WQR = water quality reference

(c) Inland and Northern Lakes *In-situ* Depth Profiles of Temperature (°C)

Depth (m)	Temperature (°C)								
	Downstream Lake		Inland Lakes			Northern Lakes			
	WQ5		IL1	IL3	IL5	NL1	NL2	NL3	NL4
	29-Mar-99	12-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99
0	-	-	13.2	-	-	-	-	-	-
0.5	-	-	-	12.7	-	-	-	-	-
1	-0.13	14.2	-	-	13.4	13.3	13.6	13.8	13.6
1.5	-	-	13.2	12.7	-	-	-	-	-
2	0.43	14.2	-	-	13.4	13.3	13.6	13.7	13.6
3	-	14.1	-	-	13.4	13.2	13.4	13.7	13.6
3.5	-	-	-	-	-	13.2	-	-	-
4	-	14.1	-	-	13.4	13.7	-	-	-
4.5	-	-	-	-	-	13.8	-	-	-
5	-	13.9	-	-	13.4	-	-	-	-
5.5	-	-	-	-	-	13.4	-	-	-
6	-	13.9	-	-	-	-	-	-	-

Notes: °C = degrees Celcius; m = metre; WQ = water quality; IL = inland lake; NL = northern lake

Table IX.6-7
Snap Lake Dissolved Oxygen (mg/L) (Depth Profiles)

(a) Snap Lake In-situ Depth Profiles of Dissolved Oxygen (mg/L)

Depth (m)	Dissolved Oxygen (mg/L)														
	WQ1			WQ2		WQ3			WQ4		WQ6	WQ7			
	29-Mar-99	9-Jul-99	12-Aug-99	29-Mar-99	12-Aug-99	29-Mar-99	9-Jul-99	12-Aug-99	29-Mar-99	12-Aug-99	12-Aug-99	29-Mar-99	8-Jul-99	12-Aug-99	
0	-	10.14	-	-	-	-	14.52	-	-	-	-	-	12.75	-	
1	16.16	9.94	10.8	17.49	10.7	17.77	14.18	10.7	16.89	10.8	13.9	10.66	13.2	10.7	
2	-	10.06	10.8	16.95	10.6	16.23	14.15	10.7	15.18	10.7	13.9	15.22	13.6	10.7	
3	13.86	10.31	10.7	16.11	10.6	14.74	14.11	10.7	11.73	10.7	13.9	13.79	13.8	10.6	
4	-	10.09	10.6	12.37	10.6	-	14.56	10.7	6.56	10.7	13.8	12.49	14.2	10.6	
5	13.52	10.15	10.7	9.22	10.6	-	14.93	10.7	-	-	13.8	11.19	14.11	10.6	
6	-	10.15	10.6	6.63	-	-	14.8	10.6	-	-	13.8	10.33	14.56	10.5	
6.5	-	-	-	4.82	-	-	-	-	-	-	-	-	-	-	
7	12.98	-	10.6	-	-	-	-	10.7	-	-	13.6	-	-	10.5	
7.5	-	-	-	-	-	-	-	-	-	-	13.6	-	-	-	
8	-	-	10.6	-	-	-	-	10.7	-	-	-	-	-	10.4	
9	10.5	-	10.6	-	-	-	-	10.6	-	-	-	-	-	-	
10	-	-	10.5	-	-	-	-	10.6	-	-	-	-	-	-	
11	8.6	-	10.6	-	-	-	-	10.5	-	-	-	-	-	-	
12	-	-	10.6	-	-	-	-	-	-	-	-	-	-	-	
13	8.27	-	10.5	-	-	-	-	-	-	-	-	-	-	-	
14	-	-	10.5	-	-	-	-	-	-	-	-	-	-	-	
15	7.87	-	10.6	-	-	-	-	-	-	-	-	-	-	-	
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	7.55	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	7.37	-	-	-	-	-	-	-	-	-	-	-	-	-	

Notes: mg/L = milligrams per litre; m = metre; WQ = water quality

(b) Reference Lake In-situ Depth Profile of Dissolved Oxygen (mg/L)

Depth (m)	Dissolved Oxygen (mg/L)			
	WQR1		WQR3	WQR7
	16-Jul-99	11-Aug-99	11-Aug-99	11-Aug-99
0	10.26	-	-	-
1	12.2	11	10.9	10.5
2	11.53	11	10.9	10.5
3	11.38	10.8	10.7	10.5
4	11.98	10.8	10.5	10.4
5	12.08	10.8	10.5	10.4
5.5	-	-	10.4	-
6	12.23	10.5	-	10.5
7	-	10.5	-	-
8	-	10.6	-	-
8.5	-	10.5	-	-

Notes: mg/L = milligrams per litre; m = metre; WQR = water quality reference

(c) Inland and Northern Lakes In-situ Depth Profiles of Dissolved Oxygen (mg/L)

Depth (m)	Dissolved Oxygen (mg/L)								
	WQ5		IL1	IL3	IL5	NL1	NL2	NL3	NL4
	29-Mar-99	12-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99
0	16.11	10.8	10.8	-	-	-	-	-	-
0.5	-	-	-	10.3	-	-	-	-	-
1	14.6	10.7	-	-	10.7	10.5	10.4	10.6	10.6
1.5	-	-	10.4	9.9	-	10.7	-	-	-
2	-	10.7	-	-	10.8	10.5	10.5	10.7	10.4
3	-	10.7	-	-	10.7	-	10.4	10.5	10.6
3.5	-	-	-	-	-	10.4	-	-	-
4	-	10.8	-	-	-	-	10.6	10.5	-
4.5	-	-	-	-	-	-	-	10.4	-
5	-	10.8	-	-	-	-	10.5	-	-
5.5	-	-	-	-	-	-	10.2	-	-

Notes: mg/L = milligrams per litre; m = metre; WQ = water quality; IL = inland lake; NL = northern lake

Table IX.6-8
Snap Lake pH (Depth Profiles)

(a) Snap Lake In-situ pH Depth Profiles

Depth (m)	pH											
	WQ1		WQ2		WQ3	WQ4	WQ6		WQ7		SH3	
	29-Mar-99	12-Aug-99	29-Mar-99	12-Aug-99	29-Mar-99	12-Aug-99	29-Mar-99	12-Aug-99	12-Aug-99	29-Mar-99	12-Aug-99	10-Sep-99
0	-	-	-	-	-	-	-	-	-	-	-	7.6
1	7.6	6.8	6.7	6.7	6.8	6.8	6.6	6.7	6.8	6.6	6.8	-
2	-	6.8	6.5	6.7	6.7	6.8	6.5	6.7	6.7	6.8	6.7	-
3	7.1	6.8	6.4	6.7	6.6	6.7	6.3	6.7	6.7	6.6	6.7	-
4	-	6.7	6.3	6.7	-	6.7	6.0	6.7	6.7	6.5	6.7	-
5	7.7	6.7	6.1	6.7	-	6.7	-	-	6.7	6.3	6.7	-
6	-	6.7	6.0	-	-	6.7	-	-	6.7	6.2	6.7	-
6.5	-	-	5.9	-	-	-	-	-	-	-	6.7	-
7	6.8	6.7	-	-	-	6.7	-	-	6.6	-	6.7	-
7.5	-	-	-	-	-	-	-	-	6.7	-	-	-
8	-	6.7	-	-	-	6.7	-	-	-	-	-	-
9	6.7	6.7	-	-	-	6.6	-	-	-	-	-	-
10	-	6.6	-	-	-	6.6	-	-	-	-	-	-
11	6.4	6.6	-	-	-	6.6	-	-	-	-	-	-
12	-	6.6	-	-	-	-	-	-	-	-	-	-
13	6.3	6.6	-	-	-	-	-	-	-	-	-	-
14	-	6.6	-	-	-	-	-	-	-	-	-	-
15	6.2	6.6	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-
17	6.2	-	-	-	-	-	-	-	-	-	-	-
18	6.2	-	-	-	-	-	-	-	-	-	-	-

Notes: m = metre; WQ = water quality

(b) Reference Lake In-situ pH Depth Profiles

Depth (m)	Reference Lake		
	WQR1	WQR3	WQR7
	11-Aug-99	11-Aug-99	11-Aug-99
0	-	-	-
1	6.6	7	6.7
2	6.6	7	6.6
3	6.6	7	6.6
4	6.5	7	6.6
5	6.6	7	6.6
5.5	-	7	-
6	6.6	-	6.6
7	6.6	-	-
8	6.6	-	-
8.5	6.5	-	-

Notes: m = metre; WQR = water quality reference

(c) Inland and Northern Lakes In-situ pH Depth Profiles

Depth (m)	pH									
	Downstream Lake		Inland Lakes			Northern Lakes				
	WQ5		IL1	IL3	IL5	NL1	NL2	NL3	NL4	
	29-Mar-99	12-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	10-Aug-99	
0	-	-	6.8	-	-	-	-	-	-	
0.5	-	-	-	6.6	-	-	-	-	-	
1	6.5	6.7	-	-	6.6	7.3	7.5	7.5	7.6	
1.5	-	-	6.7	6.5	-	-	-	-	-	
2	6.4	6.6	-	-	6.5	7.2	7.3	7.4	7.3	
3	-	6.6	-	-	6.4	7.1	7.2	7.3	7.6	
3.5	-	-	-	-	-	7.1	-	-	-	
4	-	6.6	-	-	-	-	7.1	7.3	-	
4.5	-	-	-	-	-	-	-	7.2	-	
5	-	6.6	-	-	-	-	7.1	-	-	
5.5	-	-	-	-	-	-	7.1	-	-	
6	-	6.6	-	-	-	-	-	-	-	

Notes: m = metre; WQ = water quality; IL = inland lake; NL = northern lake

Table IX.6-9
Baseline Water Quality in Inlet and Outlet Streams, 1998-2001

Parameter	Units	Inlet Streams														Outlet Streams								Water Quality Guidelines ^(a)	
		S1(WQ)		S2(WQ)		S7(WQ)		S10(WQ)		S20(WQ)		S25(WQ)		S27(WQ)		S30 (WQ)	H1			H2		Drinking Water	Aquatic Life		
		1999	2001	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001						
		28-May	28-May	28-May	29-May	11-Jul	28-May	28-May	29-May	28-May	20-Jul	28-May	28-May	28-May	28-May	28-May	29-May	11-Jul	28-May	28-May	29-May			11-Jul	
Conventional Parameters																									
pH	pH	6.4	6.2	6.6	6.2	6.7	6.5	6.3	6.1	6.7	8.39	6.6	6.5	6.5	6.6	6.6	6.8	6.7	6.6	6.7	6.8	6.5-8.5	6.5-9.0		
Alkalinity	mg/L	3	3	6	7	7	4	3	7	5	8.4	6	4	5	4	8	5	5	5	8	6	-	-		
Total Dissolved Solids	mg/L	30	27	26	50	40	22	23	40	23	26	40	40	31	20	50	<10	22	19	60	30	=500 ^(b)	-		
Total Suspended Solids	mg/L	3	3	3	<3	<3	3	3	<3	3	3	3	3	3	3	<3	<3	3	3	<3	<3	-	-		
Total Hardness	mg/L	5	4	8	5	6	5	4	4	6	9.54	12	5	6	5	7	5	6	5	7	5	-	-		
Conductivity	µS/cm	15	11	20	13.3	18	15	12	12.1	16	28.7	33	14	16	15	19.7	18.2	17	15	19.2	18.4	-	-		
Colour	TCU	-	-	-	60	30	-	-	60	-	-	-	-	-	-	15	5	-	-	15	5	=15 ^(b)	-		
Turbidity	NTU	1.2	1.7	1.5	0.4	0.4	0.9	1.9	0.4	1.1	0.9	0.7	1	2.3	1.2	0.2	0.15	1	0.9	0.2	0.15	1	short-term increase <8 long-term increase <2		
Nutrients																									
Ammonia	mg/L	<0.005	<0.005	0.060	0.05	<0.005	<0.005	<0.005	0.039	<0.005	0.029	<0.005	<0.005	<0.005	0.007	0.04	<0.005	<0.005	0.013	0.047	<0.005	-	11.1		
Nitrate + Nitrite	mg/L	0.01	0.01	0.03	0.019	0.039	0.01	<0.008	0.009	0.01	<0.008	0.01	0.01	0.01	0.01	0.024	0.026	<0.008	0.01	0.016	0.021	-	-		
Total Phosphorus	mg/L	0.01	0.01	0.01	0.01	0.006	0.02	0.02	0.009	0.02	0.008	0.01	0.01	0.02	0.02	0.004	0.003	0.01	0.01	0.003	<0.001	-	-		
Dissolved Phosphorus	mg/L	0.01	0.01	0.01	0.006	0.005	0.01	0.01	0.007	0.01	-	0.01	0.01	0.01	0.01	0.003	0.003	0.003	0.01	0.004	<0.001	-	-		
Orthophosphate	mg/L	<0.002	0.002	<0.002	0.002	<0.001	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.001	<0.001	<0.002	0.002	<0.001	<0.001	-	-		
Total Kjeldahl Nitrogen	mg/L	0.2	0.3	0.3	0.51	0.15	0.3	0.3	0.38	0.3	-	0.3	0.4	0.6	0.7	0.24	<0.05	0.2	1.8	0.84	<0.05	-	-		
Dissolved Organic Carbon	mg/L	8	7	7	6	5	6	7	6	5	-	6	7	8	3	3	3	4	3	3	3	-	-		
Total Organic Carbon	mg/L	8.2	7.4	6.8	9	6	6.3	7.3	8	5.0	6.4	6.6	7.6	8.9	3.3	4	4	3.8	4.2	3	3	-	-		
Major Ions																									
Bicarbonate	mgCO ₃ /L	-	2.9	-	8	9	-	-	8	-	-	-	-	-	-	4.4	10	6	-	4.5	10	7	-		
Carbonate	mg/L	-	-	-	<5	<5	-	-	<5	-	-	-	-	-	-	<5	<5	-	-	<5	<5	-	-		
Calcium	mg/L	1.05	0.95	1.85	1.05	1.49	1.20	0.98	0.91	1.22	2.27	2.99	1.04	1.18	1.12	1.57	1.17	1.31	1.12	1.46	1.15	-	-		
Chloride	mg/L	0.2	0.7	0.2	<1	<1	0.2	0.3	<1	0.2	0.4	0.2	0.2	0.2	0.4	<1	<1	0.2	0.4	<1	<1	=250 ^(b)	230		
Fluoride	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.06	<0.05	0.06	-	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	1.5	-		
Hydroxide	mg/L	-	-	-	<5	<5	-	-	<5	-	-	-	-	-	-	<5	<5	-	-	<5	<5	-	-		
Magnesium	mg/L	0.47	0.39	0.71	0.47	0.55	0.55	0.43	0.38	0.63	0.94	1.14	0.57	0.81	0.52	0.7	0.52	0.60	0.51	0.7	0.52	-	-		
Potassium	mg/L	0.46	0.28	0.43	0.45	0.27	0.43	0.30	0.3	0.46	0.75	0.85	0.40	0.44	0.36	0.48	0.41	0.49	0.36	0.47	0.38	-	-		
Silica	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Sodium	mg/L	0.45	0.44	0.27	0.5	0.7	0.50	0.44	0.4	0.60	0.56	0.52	0.47	0.42	0.46	0.9	0.7	0.49	0.46	0.7	0.6	=200 ^(b)	-		
Sulphate	mg/L	3	3	3	0.83	0.7	3	3	0.69	3	3	4	3	3	3	1.64	1.28	3	3	1.49	1.28	=500 ^(b)	-		
Total Metals																									
Aluminum	µg/L	<30	67.7	<30	78.6	51.2	42	55	101	35	51.7	51	77	82	<30	18.2	8	<30	<30	15.7	7.6	-	100		
Antimony	µg/L	0.6	0.6	0.5	0.05	0.03	1.4	0.8	0.05	0.5	0.4	0.6	0.6	1.6	1.6	0.06	0.05	0.5	0.4	0.06	0.04	-	-		
Arsenic	µg/L	<0.2	<0.2	<0.2	0.09	0.1	<0.2	<0.2	0.07	<0.2	-	<0.2	<0.2	<0.2	<0.2	0.08	0.07	<0.2	<0.2	0.09	0.09	25	5		
Barium	µg/L	2.2	2.2	4.1	2.49	3.27	4.2	2.2	2.7	4.0	6.3	6.0	3.5	4.2	2.7	3.03	-	3.1	6.4	3.1	2.41	1000	-		
Beryllium	µg/L	0.3	<0.1	0.1	<0.2	<0.2	0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	-	<0.1	<0.1	<0.2	<0.2	-	-		
Bismuth	µg/L	<0.1	<0.1	<0.1	<0.03	<0.03	<0.1	<0.1	<0.03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.03	<0.03	<0.1	<0.1	<0.03	<0.03	-	-		
Boron	µg/L	-	-	-	2	2	-	-	1	-	-	-	-	-	-	3	2	-	-	3	2	-	-		
Cadmium	µg/L	<0.1	<0.1	<0.1	<0.05	<0.05	<0.1	<0.1	<0.05	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	5	0.003		
Cesium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-		
Chromium	µg/L	<2	<2	<2	0.15	0.46	<2	<2	0.15	<2	1.1	<2	<2	<2	<2	0.09	<0.06	<2	2	0.1	0.42	50	1		
Cobalt	µg/L	0.5	0.1	0.7	0.3	0.1	0.5	0.3	0.2	<0.1	1.4	0.4	0.7	1.2	0.5	<0.1	<0.1	<0.1	0.2	0.1	<0.1	-	-		
Copper	µg/L	1.4	1.1	1.1	1.1	1.2	1.7	1.2	1.1	0.5	3.3	4.2	1.0	4	0.6	0.7	0.6	0.7	1.1	0.7	<0.6	=1000 ^(b)	2		
Iron	mg/L	0.34	0.23	0.40	0.355	0.22	0.19	0.20	0.207	0.08	0.4	0.09	0.27	0.52	0.12	0.051	0.023	0.09	0.03	0.058	0.022	=0.3 ^(b)	0.3		
Lead	µg/L	<2	<0.2	<2	<0.05	<0.05	<2	<2	<0.05	<0.2	2.2	<0.2	<0.2	<2	0.6	<0.05	<0.05	<0.2	<0.2	<0.05	<0.05	10	1		
Lithium	µg/L	0.7	0.7	0.4	0.8	0.9	1.3	0.8	0.9	1.1	0.9	1.0	0.8	0.5	0.9	1.1	0.9	1.1	2.0	1	0.8	-	-		
Manganese	µg/L	17.9	1.6	23.2	10.3	3.6	26.6	6.6	6.6	18.8	61.5	17.4	54.7	36.3	5.8	12.4	4.1	10.3	5.7	14	3.8	=50 ^(b)	-		
Mercury	µg/L	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.02	<0.02	1	0.1		
Molybdenum	µg/L	0.1	0.1	0.2	0.11	0.15	0.2	<0.1	0.07	<0.1	0.1	0.1	<0.1	0.1	0.1	<0.06	<0.06	<0.1	<0.1	<0.06	<0.06	-	73		
Nickel	µg/L	0.4	0.5	0.6	0.47	0.57	0.6	0.5	0.39	0.1	3.9	3.1	0.3	0.7	0.4	0.33	0.22	0.4	0.5	0.36	0.19	-	25		
Rubidium	µg/L	-	-	-	1	<1	-	-	<1	-	-	-	-	-	-	1	<1	-	-	1	<1	-	-		
Selenium	µg/L	<10	<10	<10	<0.1	<0.1	<10	<0.1	<10	<0.1	1	<10	<10	<10	<10	<0.1	<0.1	<10	<10	<0.1	<0.1	10	1		
Silver	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0.1		
Strontium	µg/L	5.0	4.0	5.5	5.5	7.7	6.8	5.4	6.1	7.7	8.6	8.3	6.4	6.3	6.6	8.4	7.4	7.1	5.6	8.4	7.4	-	-		
Thallium	µg/L	<0.1	<0.1	<0.1	<0.03	<0.03	<0.1	<0.1	<0.03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.03	<0.03	<0.1	<0.1	<0.03	<0.03	-	0.8	
Tin	µg/L	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	<0.1	<0.1	-	-		
Titanium	µg/L	0.7	0.5	1.0	1	0.1	1.3	0.3	1.3	0.4	1	0.4	1.0	1.8	0.8	0.2	<0.1	<0.2	0.3	0.2	<0.1	-	-		
Uranium	µg/L	<0.1	<0.1	<0.1	<0.05	<0.05	0.1	0.1	0.13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	20	-		
Vanadium	µg/L	<0.1	0.2	<0.1	0.15	0.2	<0.1	<0.1	0.1	<0.1	0.3	0.2	0.3	<0.1	<0.1	<0.05	0.08	0.1	0.4	<0.05	0.14	-	-		
Zinc	µg/L	<10	<10	<10	1.2	0.8	<10	<10	1.3	<10	9.9	<10	<10	44	<10	0.9	1.1	<10	<10	<0.8	<0.8	=5000 ^(b)	30		

Table IX.6-9
Baseline Water Quality in Inlet and Outlet Streams, 1998-2001 (Continued)

Parameter	Units	Inlet Streams												Outlet Streams								Water Quality Guidelines ^(a)			
		S1(WQ)		S2(WQ)		S7(WQ)		S10(WQ)		S20(WQ)		S25(WQ)		S27(WQ)		S30 (WQ)		H1		H2		Drinking Water	Aquatic Life		
		1999	1999	2001	2001	1999	1999	2001	1999	1998	1999	1999	1999	1999	1999	1999	1999	2001	1999	2001					
		28-May	28-May	28-May	29-May	11-Jul	28-May	28-May	29-May	28-May	20-Jul	28-May	28-May	28-May	28-May	28-May	28-May	29-May	11-Jul	28-May	28-May			29-May	11-Jul
Dissolved Metals																									
Aluminum	µg/L	58.0	64.2	46.0	55.6	39.1	60.0	73.0	86.4	<30	44.3	46.0	73.0	94.0	<30	16.1	5.2	<30	<30	11.3	4.9	-	-		
Antimony	µg/L	0.6	0.9	0.6	0.04	0.03	0.5	0.5	0.05	0.5	0.4	0.6	0.7	0.7	1.2	0.1	0.05	0.6	1.6	0.06	0.07	-	-		
Arsenic	µg/L	<0.2	<0.2	<0.2	0.07	0.09	<0.2	<0.2	0.06	<0.2	-	<0.2	<0.2	<0.2	<0.2	0.08	0.08	<0.2	<0.2	0.07	0.07	-	-		
Barium	µg/L	2.2	2.2	3.6	2.34	3.34	4.0	2.3	2.33	3.7	5.8	6.0	2.9	5.0	2.6	3.11	2.26	3.0	3.2	3.26	2.26	-	-		
Beryllium	µg/L	<0.1	<0.1	<0.1	< 0.2	<0.2	<0.1	<0.1	< 0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.2	<0.2	<0.1	<0.1	< 0.2	<0.2	-	-		
Bismuth	µg/L	<0.1	<0.1	<0.1	<0.03	<0.03	<0.1	<0.1	<0.03	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.03	<0.03	<0.1	<0.1	<0.03	<0.03	-	-		
Boron	µg/L	-	-	-	2	2	-	-	1	-	-	-	-	-	-	3	2	-	-	3	2	-	-		
Cadmium	µg/L	<0.1	<0.1	<0.1	< 0.05	<0.05	<0.1	<0.1	< 0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.05	<0.05	<0.1	<0.1	< 0.05	<0.05	-	-		
Cesium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-		
Chromium	µg/L	<2	0.4	<2	0.15	<0.06	<2	<2	0.15	<2	0.2	<2	<2	5.0	<0.2	0.13	<0.06	<2	14.2	0.13	<0.06	-	-		
Cobalt	µg/L	0.4	0.2	0.4	0.2	<0.1	0.1	0.2	0.2	<0.1	1.4	0.4	0.6	1.0	0.2	< 0.1	<0.1	0.1	0.4	< 0.1	<0.1	-	-		
Copper	µg/L	1.8	1.2	1.1	1.1	3.1	0.9	1.1	1.1	0.8	2.3	4.2	1.1	2.1	0.8	2	0.9	1.4	0.9	1.5	0.7	-	-		
Iron	mg/L	0.257	0.194	0.225	0.261	0.082	0.114	0.172	0.152	0.039	0.4	0.038	0.176	0.249	0.022	0.026	0.009	0.052	<0.02	0.029	0.009	-	-		
Lead	µg/L	0.3	4.4	0.4	< 0.05	<0.05	<0.2	0.5	< 0.05	1.3	<0.2	<0.2	<0.2	<0.2	21.4	0.64	0.27	<0.2	7.4	< 0.05	0.25	-	-		
Lithium	µg/L	0.8	0.6	0.6	0.8	0.9	1.2	0.9	0.9	1.0	0.8	1.0	0.7	0.9	0.8	1.1	0.8	0.9	0.8	1	0.9	-	-		
Manganese	µg/L	18.1	1.5	23.8	9.4	2.8	24.9	6.7	5.5	17.9	64.9	15.7	48.1	44.6	2.6	11.3	0.8	8.9	3.5	11.4	1.1	-	-		
Mercury	µg/L	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.02	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.02	<0.02	-	-	
Molybdenum	µg/L	0.1	0.2	0.1	0.1	0.14	<0.1	<0.1	< 0.06	<0.1	<0.1	0.1	<0.1	0.1	<0.1	< 0.06	<0.06	<0.1	0.2	0.06	<0.06	-	-		
Nickel	µg/L	0.4	0.5	0.5	1.11	0.84	0.4	0.3	0.53	0.1	3.2	2.9	0.3	0.9	0.3	0.39	0.49	0.3	0.3	1.28	0.39	-	-		
Rubidium	µg/L	-	-	-	1	<1	-	-	<1	-	-	-	-	-	-	1	<1	-	-	1	<1	-	-		
Selenium	µg/L	<10	<1	<10	< 0.1	<0.1	<10	<10	< 0.1	<10	<1	<10	<10	<10	<1	< 0.1	<0.1	<10	<1	< 0.1	<0.1	-	-		
Silver	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-		
Strontium	µg/L	4.9	4.0	5.7	5.3	7.7	6.8	5.3	5.6	7.7	7.8	8.5	5.9	8.1	5.5	8.6	7.5	7.2	6.1	8.4	7.2	-	-		
Thallium	µg/L	<0.1	<0.1	<0.1	< 0.03	<0.03	<0.1	<0.1	< 0.03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.03	<0.03	<0.1	<0.1	< 0.03	<0.03	-	-		
Tin	µg/L	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-		
Titanium	µg/L	0.3	0.7	0.3	0.5	<0.1	0.5	0.5	0.7	<0.2	0.5	0.3	0.6	0.8	<0.2	0.2	<0.1	<0.2	<0.2	<0.1	<0.1	-	-		
Uranium	µg/L	<0.1	<0.1	<0.1	< 0.05	<0.05	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.05	<0.05	<0.1	<0.1	< 0.05	<0.05	-	-		
Vanadium	µg/L	0.1	0.2	0.2	0.1	0.1	<0.1	0.1	0.06	<0.1	0.2	0.1	0.1	0.2	<0.1	< 0.05	<0.05	<0.1	<0.1	< 0.05	<0.05	-	-		
Zinc	µg/L	<10	<10	<10	1.4	2.2	<10	<10	1.5	<10	5.1	<10	<10	22.0	<10	1.7	4.1	<10	25	1.1	1.2	-	-		
Organics																									
Oil and Grease	mg/L	-	-	-	<1	<1			<1	-	-	-	-	-	-	<1	<1	-	-	<1	<1	-	-		

^(a)All guidelines are from Canadian Council of Ministers of the Environment (CCME 1999), with the exception of the aquatic life guideline for chloride, which is from United States Environmental Protection Agency (U.S. EPA 1999). Hardness dependent guidelines are determined for a median base of 6 mg/L, and the ammonia guideline was determined using a median baseline pH of 6.7 and temperature of 15°C

^(b) Aesthetic objective

^(c)UL indicates Ultra-Low metal analysis. Samples collected in 2001 were analyzed using Ultra-Low methods. 1998 and 1999 samples were analyzed using Low-Level methods.

< = less than detection limit (refer to glossary for definition)

Notes: mg/L = milligrams per litre; µS/cm = microsiemens per centimetre; TCU = total color units; NTU = nephelometric units; mgCO₃/L = milligrams of bicarbonate per centimetre; µg/L = micrograms per litre; S = stream; WQ = water quality; H = habitat

Table IX.6-10
Baseline Sediment Chemistry in Snap Lake, 1999

Parameter	Units	Snap Lake				CCME Guidelines	
		SH1	SH2	SH3	WQ3	Aquatic Life	
		14-Sep-99	14-Sep-99	14-Sep-99	14-Sep-99	ISQG ^(a)	PEL ^(b)
Clay	%	1	1	2	1	-	-
Silt	%	22	21	22	19	-	-
Sand	%	77	78	76	80	-	-
Moisture Content	%	91	86	88	78	-	-
Total Inorganic Carbon	%	0.2	0.2	0.2	0.4	-	-
Total Organic Carbon	%	11	13	20	12	-	-
Total Metals							
Aluminum	Wt%	1.1	1.3	1.3	1.2	-	-
Antimony	µg/g	<0.2	<0.2	<0.2	<0.2	-	-
Arsenic	µg/g	0.9	1.5	1.3	1.6	-	-
Barium	µg/g	81.7	79.0	79.4	97.5	-	-
Beryllium	µg/g	0.7	0.8	1.1	0.7	-	-
Bismuth	µg/g	0.3	0.3	0.4	<0.2	-	-
Cadmium	µg/g	0.6	0.6	0.7	0.7	0.6	3.5
Cesium	µg/g	1.7	1.6	1.3	1.7	-	-
Chromium	µg/g	29.5	42.1	29.8	29.5	37.3	90
Cobalt	µg/g	20.7	10.6	13.1	10.4	-	-
Copper	µg/g	71.4	67.7	88.6	66.5	35.7	197
Iron	%	2.1	2.2	3.3	1.6	-	-
Lead	µg/g	4.2	5.1	6.4	3.8	35	91.3
Lithium	µg/g	24.9	20.8	14.7	25.1	-	-
Manganese	µg/g	258	247	395	271	-	-
Mercury	µg/g	0.05	0.05	0.10	0.04	0.17	0.486
Molybdenum	µg/g	7.1	6.9	9.2	5.5	-	-
Nickel	µg/g	36.8	44.2	39.8	35.8	-	-
Rubidium	µg/g	12.7	14.7	9.4	16.4	-	-
Selenium	µg/g	<2	<2	<2	<2	-	-
Silver	µg/g	<0.2	<0.2	<0.2	<0.2	-	-
Strontium	µg/g	25.7	26.9	27.6	25.9	-	-
Thallium	µg/g	<0.2	<0.2	<0.2	0.3	-	-
Titanium	µg/g	611	459	222	430	-	-
Uranium	µg/g	6.2	5.9	5.4	6.0	-	-
Vanadium	µg/g	32.4	28.8	31.6	27.5	-	-
Zinc	µg/g	168	160	184	233	123	315

^(a) ISQG = Interim freshwater sediment quality guideline

^(b) PEL = Probable effect levels

< = less than detection limit (refer to glossary for definition)

Notes: % = percent; Wt % = percent weight; µg/g = microgram per gram; SH = shallow habitat

Table IX.6-11
Baseline Sediment Chemistry in the Reference Lake, 1999

Parameter	Units	Reference Lake				CCME Guidelines	
		WQR1	WQR3	WQR7	SHR2	Aquatic Life	
		14-Sep-99	14-Sep-99	14-Sep-99	14-Sep-99	ISQG ^(a)	PEL ^(b)
Clay	%	1	1	1	1	-	-
Silt	%	22	21	26	23	-	-
Sand	%	77	78	73	76	-	-
Moisture Content	%	92	94	86	90	-	-
Total Inorganic Carbon	%	0.2	0.2	0.4	0.2	-	-
Total Organic Carbon	%	14	18	9	18	-	-
Total Metals							
Aluminum	Wt %	0.8	1.2	1.2	1.3	-	-
Antimony	µg/g	<0.2	<0.2	<0.2	<0.2	-	-
Arsenic	µg/g	0.4	0.8	0.7	1.5	-	-
Barium	µg/g	44.6	60.3	53.4	50.4	-	-
Beryllium	µg/g	0.4	0.6	0.6	0.5	-	-
Bismuth	µg/g	<0.2	<0.2	<0.2	<0.2	-	-
Cadmium	µg/g	0.2	0.4	0.3	0.3	0.6	3.5
Cesium	µg/g	1.1	1.4	1.2	1.4	-	-
Chromium	µg/g	19.5	28.0	25.1	25.4	37.3	90
Cobalt	µg/g	4.6	7.9	6.6	9.5	-	-
Copper	µg/g	28.4	42.7	28.1	45.7	35.7	197.0
Iron	%	1.7	2.1	2	7.5	-	-
Lead	µg/g	3.6	4.7	5.8	4.7	35	91.3
Lithium	µg/g	16.0	17.1	16.0	14.9	-	-
Manganese	µg/g	115	186	299	209	-	-
Mercury	µg/g	0.04	0.07	0.04	0.07	0.17	0.486
Molybdenum	µg/g	2.1	3.4	2.1	4.9	-	-
Nickel	µg/g	15.3	23.0	17.6	22.1	-	-
Rubidium	µg/g	8.7	10.6	8.8	10.0	-	-
Selenium	µg/g	<2	<2	<2	<2	-	-
Silver	µg/g	<0.2	<0.2	<0.2	<0.2	-	-
Strontium	µg/g	19.7	23.5	22.0	17.5	-	-
Thallium	µg/g	<0.2	<0.2	<0.2	0.3	-	-
Titanium	µg/g	304	257	317	309	-	-
Uranium	µg/g	4.9	7.5	3.7	8.8	-	-
Vanadium	µg/g	24.1	28.6	24.3	27.8	-	-
Zinc	µg/g	66	99	104	99	123	315

^(a) ISQG = Interim freshwater sediment quality guideline

^(b) PEL = Probable effect levels

< = less than detection limit (refer to glossary for definition)

Notes: % = percent; Wt % = percent weight; µg/g = microgram per gram; WQR = water quality reference; SHR = shallow habitat reference.

Table IX.6-12
Water Quality in the Lockhart River Watershed, 1993/1994

Date Sampled	Units	1993																												1994						Water Quality Guidelines ¹⁰	
		20-Jul 49	26-Jul 25	29-Jul 40	20-Jul 100	21-Jul 37	21-Jul 29	21-Jul 101	22-Jul 46	22-Jul 42	22-Jul 43	22-Jul 44	22-Jul 45	23-Jul 50	23-Jul 38	23-Jul 36	23-Jul 8	23-Jul 31	23-Jul 41	24-Jul 21	24-Jul 24	24-Jul 47	24-Jul 14	24-Jul 35	24-Jul 13	25-Jul 7	25-Jul 39	25-Jul 2	25-Jul 11	25-Jul 5	25-Jul 6	12-Jul 18	12-Jul 20	18-Jul 16	Drinking Water	Aquatic Life	
Conventional Parameters																																					
pH	pH	6.61	6.49	6.69	6.75	6.59	6.67	6.74	6.57	6.52	7.72	6.61	6.59	6.43	6.17	6.63	6.64	6.53	6.43	6.97	6.59	6.42	6.66	6.46	6.56	6.52	6.4	6.49	6.58	6.5	6.34	6.72	6.77	6.62	6.5-8.5	6.5-9.0	
Alkalinity	mg/L	3.4	2.9	2	3	2.2	2.2	3.4	1.3	1.5	30.5	1.5	1.5	1	<0.3	1.9	2.5	1.4	0.9	8	2.4	1.2	2.4	1.4	2.3	1.8	1.4	1.4	2.5	2	0.4	3.5	4.1	3.7	-	-	
Total Dissolved Solids	mg/L	17	16	25	31	17	13	20	11	13	53	12	11	23	16	29	22	24	21	28	14	26	19	22	21	11	13	<10	12	10	<10	19	19	34	=500 ¹⁰	-	
Total Suspended Solids	mg/L	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	-	
Total Hardness	mg/L	6	5	3	5	5	4	6	3	4	34	4	3	6	2	4	6	4	4	15	4.6	5	4.9	4	14	3.6	2.5	3.1	4.4	3.6	3.9	3.9	4.8	4	-	-	
Conductivity	µS/cm	15.6	14.8	11.9	21.8	14.8	14.4	17.5	12.3	12.3	71.4	12.6	12.7	14.2	10.4	11.8	16.6	11.9	10.9	45.1	15.1	13	14.8	11.8	14.8	14	10.4	12.5	15.3	14.3	10.5	13.5	17.6	13.1	-	-	
Colour	TCU	<5	<5	<5	8	<5	<5	<5	<5	<5	<5	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	=15 ¹⁰	-	
Turbidity	NTU	0.5	0.5	0.5	1.1	0.5	0.6	0.5	0.6	0.6	0.6	0.5	0.7	0.6	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.9	0.4	1.6	short-term increase <8 long-term increase <2	-	
Nutrients																																					
Ammonia	mg/L	0.008	0.009	0.005	0.006	0.003	0.022	0.006	0.008	0.004	0.002	0.002	0.005	<0.002	<0.002	0.002	0.003	0.006	<0.002	<0.002	0.014	<0.002	0.01	0.007	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.016	0.004	0.008	0.002	0.014	-	11.1
Nitrate + Nitrite	mg/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.051	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.048	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.044	<0.008	<0.008	<0.008	<0.008	-	-
Total Phosphorus	mg/L	0.004	0.004	0.013	0.013	0.003	0.003	0.005	0.024	0.005	0.003	0.003	0.006	0.003	0.006	0.003	0.005	0.003	0.014	0.003	0.006	0.004	0.023	0.007	0.004	0.006	0.002	0.002	0.002	0.003	0.003	0.003	<0.002	0.005	-	-	
Major Ions																																					
Calcium	mg/L	1.3	1.1	0.7	1.2	1.2	1	1.5	0.5	1	7.3	0.7	0.4	1	0.3	1	1.3	1	1	4.9	1.2	1.2	1.3	1.1	1.2	0.8	0.5	0.6	1.1	0.8	0.5	0.89	0.93	0.96	-	-	
Chloride	mg/L	0.72	0.75	0.64	0.68	0.99	0.72	0.81	0.62	0.48	0.77	0.62	0.63	0.45	0.29	0.28	0.5	0.42	0.26	3.65	0.39	0.46	0.38	0.39	0.31	0.38	0.27	0.3	0.37	0.37	0.37	0.62	0.64	0.57	=250 ¹⁰	230	
Magnesium	mg/L	0.6	0.5	0.4	0.5	0.4	0.5	0.5	0.4	0.5	3.8	0.5	0.4	0.6	0.3	0.4	0.7	0.4	0.4	0.7	0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.6	0.4	-	-	
Potassium	mg/L	0.6	0.4	0.6	0.7	0.5	0.3	0.5	0.1	0.4	1.5	0.6	0.2	0.3	0.3	0.1	0.5	0.2	0.2	0.7	0.5	0.1	0.4	0.2	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.4	-	-	
Reactive Silica	mg/L	0.102	0.08	0.097	0.102	0.265	0.09	0.229	0.078	0.2	1.22	0.081	0.076	0.101	0.135	0.038	0.065	0.08	0.094	0.11	0.138	0.185	0.13	0.188	0.153	0.074	0.059	0.051	0.07	0.07	0.087	0.221	0.072	0.154	-	-	
Sodium	mg/L	0.3	0.3	0.3	0.2	0.5	0.5	0.7	0.4	0.4	1.3	0.6	0.5	0.4	0.5	0.4	0.5	0.4	0.3	1	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.3	0.35	0.39	0.27	=200 ¹⁰	-
Sulphate	mg/L	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	=500 ¹⁰	-	
Total Metals																																					
Aluminum	µg/L	<0.5	0.78	1.33	10.81	4.57	2.55	9.23	5.07	11.19	<0.5	4.87	4.28	5.09	0.89	1.08	6.09	6.19	3.68	<0.54	2.56	16.54	10.71	16.56	6.74	9.37	6.87	5.69	6.54	7.38	9.47	16.08	4.13	8.91	-	100	
Antimony	µg/L	0.13	0.16	0.13	-	0.03	0.01	-	0.04	0.02	-	0.01	0.03	0.03	0.03	0.02	0.003	0.02	0.005	0.17	0.19	0.16	0.23	0.13	0.39	0.19	0.20	0.20	0.18	0.17	0.18	0.37	0.44	0.39	-	-	
Arsenic	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.6	<0.3	<0.3	<0.3	26	5	
Barium	µg/L	1.24	1.99	0.90	1.76	1.64	1.55	1.84	1.05	2.03	5.13	1.18	1.17	1.12	0.54	1.06	1.30	1.76	1.31	3.03	1.65	1.58	1.47	1.71	1.68	1.54	1.12	1.20	1.58	1.68	1.36	1.96	1.60	1.72	1000	-	
Beryllium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	
Bismuth	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	
Cesium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	
Chromium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.47	<0.2	<0.2	<0.2	<0.2	<0.2	0.22	<0.2	<0.2	0.33	0.25	0.27	0.28	0.23	0.28	0.22	0.24	0.22	0.25	0.28	<0.2	<0.2	0.23	50	1		
Cobalt	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	
Copper	µg/L	0.21	0.25	0.34	0.54	0.18	0.25	0.42	0.22	0.42	0.21	0.23	0.31	0.45	0.18	0.18	0.53	0.35	0.26	0.41	0.43	0.83	0.69	0.55	0.62	0.66	0.57	0.59	0.49	0.60	0.54	0.55	0.75	0.63	=1000 ¹⁰	2	
Cyanide	mg/L	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Iron	mg/L	<0.02	<0.02	<0.02	0.076	<0.02	<0.02	0.021	0.028	0.028	<0.02	0.028	0.024	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.005	<0.02	0.025	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.02	0.02	=0.3 ¹⁰	0.3	
Lead	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.26	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.35	0.46	0.42	10	1	
Lithium	mg/L	0.98	0.92	0.84	0.78	0.70	0.74	1.14	0.51	0.62	0.52	0.53	0.53	1.34	0.7	0.56	1.06	0.81	0.67	1.20	0.93	1.02	0.86	0.84	0.89	1.09	1.36	1.21	0.96	1.10	0.92	0.79	0.92	0.84	-	-	
Manganese	µg/L	1.62	0.88	2.83	6.75	2.50	2.33	3.28	5.30	4.22	0.71	6.52	5.67	3.03	1.51	2.50	1.21	2.65	3.53	1.26	2.66	4.47	3.96	6.66	4.12	2.28	2.27	5.09	1.36	1.34	3.32	6.60	1.02	4.37	=50 ¹⁰	-	
Mercury	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1	
Molybdenum	µg/L	-	-	-	-	-	0.02	-	-	0.04	0.09	-	-	-	-	-	-	-	0.002	-	0.03	0.01	0.02	0.03	0.03	0.01	0.02	0.01	0.03	0.03	0.02	-	0.04	0.04	0.03	-	7.3
Nickel	µg/L	0.16	0.32	0.17	0.34	<0.1	<0.1	0.14	<0.1	0.58	0.12	<0.1	0.11	1.14	0.21	<0.1	0.49	0.24	0.31	0.43	0.73	1.20	0.38	0.33	0.47	0.73	0.41	0.50	0.32	0.60	0.46	0.41	0.36	-	25	-	
Selenium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1								

Table IX.6-13
Water Quality in the Lockhart River Watershed, 1999 (Continued)

																										Water Quality Guidelines ^(d)				
Date Sampled	Units	11-Mar	11-Mar	11-Mar	11-Mar	17-Mar	17-Mar	17-Mar	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	6-Aug	Drinking Water	Aquatic Life	
Site Number		22	22	35	35	19	19	19	1	4	4	4	12	13	23	26	26	26	26	26	26	26	30	32	33	34				
Depth	m	2	9	2	5	0	0	2	2	2	2	2	3	3	2	9	9	2	5	9	5	2	2	2	3	0	3			
Conventional Parameters																														
pH		6.86	6.72	6.54	6.39	6.75	6.75	6.75	6.54	6.61	6.74	6.55	6.78	6.5	6.57	6.46	6.58	6.59	6.5	6.59	6.73	6.75	6.6	6.46	6.5	6.5	6.47	6.5-8.5	6.5-9.0	
Alkalinity	mg/L	4.9	4.6	3.6	4.1	5.6	5.3	3	3.7	10.2	3.7	6.4	4	4.1	4	4.2	4	4	4.1	6.3	17.8	3.7	3	3.2	3	3	-	-	-	
Total Dissolved Solids	mg/L	24	16	29	19	12	15	13	18	26	14	15	19	10	19	26	26	-	13	11	21	16	14	12	20	16	13	=500 ^(a)	-	
Total Suspended Solids	mg/L	<3	<3	<3	<3	5	<3	3	<3	<3	11	<3	<3	<3	7	6	-	<3	<3	7	5	11	16	8	3	4	-	-	-	
Total Hardness	mg/L	-	-	-	-	-	-	-	4.08	4.3	4.44	4.31	6.2	5.1	4.63	4.64	5	4.83	4.7	4.39	4.8	4.73	3.98	4.09	4.23	3.82	3.95	-	-	
Total Organic Carbon	mg/L	-	-	-	-	-	-	-	3.3	3.4	3.5	3.4	5	4.2	2.8	4.1	3.4	3.3	3.4	3.3	3.3	3.2	3.7	4.4	3	3.2	3.2	-	-	
Dissolved Organic Carbon	mg/L	-	-	-	-	-	-	-	2.9	3	3	3	3	4.1	2.6	3.2	3.2	3	2.4	3.1	2.9	3	3.3	4	2.6	3	2.9	-	-	
Conductivity	µS/cm	16.1	15.4	13.6	15.1	20.5	19.9	13	14.3	73.2	34.2	18.7	15.4	15.1	15.7	15.7	15.3	15.2	15.4	36.8	146	16.5	12.7	13.4	13	12.5	-	-	-	
Colour	TCU	<5	<5	10	5	<5	<5	5	5	5	5	5	<5	<5	5	5	5	5	<5	5	5	5	10	5	5	5	=15 ^(a)	short-term increase <8 long-term increase <2		
Turbidity	NTU	0.3	0.3	0.4	0.4	2	2.1	0.7	0.5	0.7	0.6	0.7	1.1	0.7	0.5	0.7	0.6	0.6	0.6	0.5	0.7	0.5	0.9	0.8	0.4	1	1	-	-	
Nutrients																														
Ammonia-N	mg/L	0.006	0.006	0.018	0.018	0.015	0.014	0.027	0.026	0.03	0.033	0.058	-	0.029	0.019	0.02	0.024	0.03	<0.005	0.024	0.022	0.021	0.02	0.039	<0.005	0.032	-	-	11.1	
Nitrate + Nitrite	mg/L	0.009	0.01	0.011	0.027	0.014	0.029	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.009	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	-	-	
Nitrate-N	mg/L	-	-	-	-	-	-	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.009	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	-	-	
Nitrite-N	mg/L	-	-	-	-	-	-	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	-	0.06	
Total Phosphorous	mg/L	<0.002	0.002	0.002	0.003	0.013	0.011	<0.004	0.004	0.004	0.004	<0.002	0.005	0.004	0.023	0.009	0.008	<0.004	0.007	0.004	0.008	<0.004	0.005	0.004	0.004	0.005	-	-	-	
Phosphate	mg/L	-	-	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	-	
Major Ions																														
Calcium	mg/L	1.23	1.16	0.96	1.09	1.32	1.38	0.71	0.88	0.92	0.87	1.61	1.23	1.03	1.05	1.13	1.06	1.06	1.05	1.05	1.04	0.87	0.88	0.77	0.64	0.74	-	-	-	
Chloride	mg/L	0.5	<0.2	<0.2	<0.2	0.3	1.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	=250 ^(a)	230		
Magnesium	mg/L	0.54	0.5	0.49	0.54	0.7	0.69	0.56	0.51	0.52	0.52	0.53	0.49	0.5	0.49	0.53	0.53	0.5	0.43	0.53	0.52	0.44	0.46	0.56	0.54	0.51	-	-	-	
Potassium	mg/L	0.45	0.43	0.41	0.44	0.53	0.5	0.46	0.44	0.44	0.45	0.49	0.42	0.44	0.42	0.42	0.43	0.42	0.43	0.44	0.43	0.42	0.38	0.51	0.52	0.46	-	-	-	
Silica	mg/L	0.20	0.17	0.79	0.97	0.17	0.16	0.14	0.19	0.19	0.18	0.22	0.42	0.18	0.28	0.29	0.27	0.26	0.27	0.26	0.14	0.72	0.18	0.25	0.19	-	-	-	-	
Sodium	mg/L	0.57	0.54	0.51	0.55	0.75	0.6	0.4	0.47	0.47	0.46	0.53	0.44	0.49	0.49	0.48	0.48	0.49	0.5	0.49	0.48	0.39	0.43	0.4	0.39	0.4	=200 ^(a)	-	-	
Sulphate	mg/L	5	4	<3	4	4	3	<3	<3	<3	<3	<2	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	=500 ^(a)	-	
Total Cyanide	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Metals																														
Aluminum	µg/L	<10	<10	21	29	<10	10	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	-	100	
Arsimony	µg/L	0.5	0.5	0.5	0.5	0.4	0.5	0.5	<0.5	<0.5	<0.5	0.6	0.6	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	
Arsenic	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	25	-	5	
Barium	µg/L	1.8	1.8	1.6	1.8	2.6	2.7	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	1000	-	-
Beryllium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	-	
Bismuth	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	-	
Cadmium	µg/L	0.05	0.01	<0.01	<0.01	0.01	0.05	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	5	0.003	
Cesium	µg/L	0.01	0.01	0.01	0.01	<0.01	<0.01	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	-	
Chromium	µg/L	0.2	<0.1	<0.1	<0.1	0.2	0.2	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	50	1	
Cobalt	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	
Copper	µg/L	0.5	0.3	0.7	0.7	0.7	0.9	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	=1000 ^(a)	2	
Iron	µg/L	<0.02	<0.02	0.04	0.05	0.06	0.05	<0.03	<0.03	0.04	<0.03	<0.03	<0.03	<0.03	0.04	0.03	<0.03	0.04	<0.03	<0.03	0.03	0.03	0.05	<0.03	<0.03	<0.03	<0.03	=0.3 ^(a)	0.3	
Lead	µg/L	0.6	0.14	0.16	0.21	0.16	0.12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	10	1	
Lithium	µg/L	1	0.9	1	0.9	0.9	0.9	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	-	
Manganese	µg/L	0.7	0.8	2.4	8.5	0.9	1	2	2	3	3	2	5	1	5	5	4	4	4	4	5	4	7	3	3	3	=50 ^(a)	1	0.1	
Mercury	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Molybdenum	µg/L	<0.05	<0.05	<0.05	<0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	73	
Nickel	µg/L	0.4	0.3	0.4	0.4	0.6	0.6	<1	<1	<1	<1	<1	<1	<1	1	1	1	1	1	1	1	<1	<1	<1	<1	<1	<1	-	25	
Selenium	µg/L	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1	1	
Silver	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.1	
Strontium	µg/L	7	6.3	5.6	5.5	6.3	6.3	4	5	5	6	8	5	6	6	6	6	6	6	6	6	5	5	5	5	5	5	-	-	
Titanium	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.4	<0.4	<0.4	<0																			

Table IX.6-14
Sediment Quality in the Lockhart River Watershed, 1993/1994

		1993																												1994		CCME Guidelines	
Sample Date		20-Jul	21-Jul	21-Jul	21-Jul	22-Jul	22-Jul	23-Jul	23-Jul	23-Jul	23-Jul	23-Jul	24-Jul	24-Jul	24-Jul	24-Jul	24-Jul	24-Jul	24-Jul	24-Jul	24-Jul	25-Jul	25-Jul	25-Jul	25-Jul	25-Jul	25-Jul	25-Jul	12-Jul	13-Jul	Aquatic Life		
Site Number	Units	100	101	29	37	43	46	8	31	36	38	50	13	14	21	24	35	47	47	47	47	2	5	6	7	11	39	18	16	ISQG ^(a)	PEL ^(b)		
Total Metals																																	
Aluminum	µg/g	12400	12133	16142	29545	10118	7344	32806	15979	10993	14849	23411	16379	10177	11879	10629	6678	15565	9981	10325	12039	12968	16327	7119	12342	8780	12071	12925	19012	-	-		
Antimony	µg/g	0.03	-	-	-	-	-	-	0.174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.028	-	0.010	-	-	-	-	
Arsenic	µg/g	6.09	3.7	1.0	2.0	1.3	4.3	1.6	0.6	1.1	4.3	20.8	28.4	9.1	21.8	41.1	11.1	28.1	11.1	11.4	14.9	7.7	6.4	4.2	10.9	3.7	12.6	26.1	49.0	-	-		
Barium	µg/g	59.94	54.3	91.1	135.0	71.9	49.3	123.3	90.7	72.4	42.3	97.3	64.7	58.5	59.5	45.7	36.2	75.3	53.1	62.2	68.4	61.7	83.3	35.6	93.6	52.5	79.1	322.4	81.7	-	-		
Beryllium	µg/g	0.28	0.33	0.63	1.18	0.44	0.15	0.74	0.31	0.35	1.35	0.76	0.46	0.35	0.41	0.65	0.24	0.48	0.31	0.37	0.40	0.43	0.38	0.31	0.77	0.39	0.78	0.38	0.49	-	-		
Bismuth	µg/g	0.14	-	0.01	0.21	-	-	0.15	-	-	1.02	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-	0.37	-	0.40	-	-	-	-	
Cadmium	µg/g	0.42	0.09	0.26	0.37	0.12	-	0.61	0.22	-	0.07	0.05	0.29	-	0.38	0.61	-	0.12	-	-	0.03	0.06	-	-	0.56	0.10	0.76	-	0.05	0.6	3.5		
Calcium	µg/g	3514	2023	2293	1317	2196	711	1484	1309	1485	295	834	1482	1291	2233	1061	533	953	840	1101	682	962	770	334	1322	2788	907	1219	1563	-	-		
Cesium	µg/g	0.7	1.2	2.0	4.2	0.7	1.1	2.9	1.7	1.3	3.4	3.3	2.3	2.0	1.4	1.5	1.0	2.8	1.9	2.3	2.3	2.0	3.1	1.3	2.5	1.4	2.3	2.4	1.8	-	-		
Chromium	µg/g	23.5	23.9	29.8	47.6	20.9	19.5	45.9	29.8	25.4	24.7	43.0	38.1	32.8	28.9	28.3	18.7	39.6	28.2	36.6	35.8	30.9	39.3	16.7	41.2	24.8	36.7	40.2	37.4	37.3	90		
Cobalt	µg/g	14.6	7.3	9.6	11.6	4.4	5.3	10.0	5.4	8.6	4.1	15.9	22.4	8.1	9.8	27.2	12.4	18.9	12.5	10.0	17.8	8.4	9.4	10.2	20.8	5.0	17.2	78.7	25.4	-	-		
Copper	µg/g	60.4	52.6	92.9	58.8	26.6	20.5	70.5	41.9	22.6	85.0	62.5	56.7	39.7	61.3	55.0	17.1	36.3	25.1	33.3	31.9	42.0	25.4	13.2	69.3	28.8	83.9	42.8	57.1	35.7	197		
Iron	%	0.0152	0.0203	0.0337	0.0328	0.0114	0.0164	0.0221	0.0116	0.0162	0.0284	0.0629	0.0244	0.0134	0.0172	0.0187	0.0130	0.0360	0.0189	0.0157	0.0204	0.0198	0.0256	0.0286	0.0159	0.0098	0.0167	0.1762	0.0533	-	-		
Lead	µg/g	8.3	171.7	4.7	6.8	3.4	2.3	4.2	5.5	4.1	6.8	4.5	5.8	501.5	42.4	3.0	2.2	3.8	3.6	3.5	3.5	2.9	3.7	1.9	4.4	2.7	5.0	4.2	4.7	35	91.3		
Lithium	µg/g	7.4	12.9	17.7	32.4	9.9	15.7	27.1	18.4	17.0	16.3	26.9	19.4	18.1	14.0	15.0	12.3	21.8	17.1	21.0	22.2	20.0	33.7	14.1	23.5	14.8	25.8	23.5	17.3	-	-		
Magnesium	µg/g	1747	2105	3190	6357	3124	2603	6275	3372	3903	3245	5773	4021	3882	2729	2765	2046	5174	3369	4039	4348	3731	6634	2553	3683	3790	3810	4721	4028	-	-		
Manganese	µg/g	201.1	245.0	194.6	459.7	193.8	266.3	160.2	122.4	363.1	87.8	1158.5	308.9	147.9	231.3	178.0	144.9	270.7	164.0	127.8	261.1	136.3	479.2	847.0	223.8	80.1	182.0	17610.0	3613.0	-	-		
Mercury	µg/g	0.250	0.261	0.553	0.216	0.046	0.029	0.024	0.096	0.088	0.090	0.222	0.099	0.245	0.078	0.082	0.029	0.057	0.053	0.091	0.034	0.108	0.095	0.071	0.108	0.739	0.068	0.047	0.043	0.17	0.486		
Molybdenum	µg/g	3.9	5.7	11.0	3.6	-	1.0	0.8	0.8	0.5	4.4	1.9	4.8	1.4	2.3	3.6	0.9	2.5	1.1	1.8	2.7	1.2	1.0	0.3	3.1	0.9	3.8	4.2	3.6	-	-		
Nickel	µg/g	38.3	20.8	30.9	44.2	15.6	13.9	59.5	27.2	30.0	34.7	54.3	45.3	28.2	37.7	68.0	12.2	42.5	26.9	32.4	45.4	33.1	31.6	11.4	71.9	24.3	78.5	43.9	32.5	-	-		
Potassium	µg/g	1165	1048	1793	3379	1098	858	4223	1740	1926	1753	3489	1510	1451	1112	1133	947	2271	1661	1810	1799	3366	3235	1360	1766	2758	2322	2205	1783	-	-		
Rubidium	µg/g	5.0	11.2	15.3	28.4	12.0	9.2	25.5	13.3	14.4	13.5	21.3	14.3	13.1	8.8	9.9	7.7	17.5	12.1	15.5	15.6	14.3	26.1	9.9	16.3	10.3	17.8	18.8	12.1	-	-		
Selenium	µg/g	1.9	-	-	1.16	0.72	-	-	-	-	0.33	-	-	0.08	0.15	0.79	-	-	-	-	0.06	-	-	-	-	-	-	-	0.86	0.53	-	-	
Silver	µg/g	0.13	0.11	0.18	0.13	0.05	-	0.10	0.05	0.04	0.05	0.17	0.20	0.08	0.18	0.08	0.05	0.06	0.004	0.10	0.07	0.05	-	-	0.14	-	0.10	0.15	0.26	-	-		
Sodium	µg/g	50.0	90.0	75.5	76.4	111.0	55.4	129.5	107.6	212.1	59.0	75.9	74.1	80.1	60.8	72.5	109.9	115.8	94.4	81.9	88.9	80.1	137.5	83.4	66.1	89.3	63.5	58.5	70.1	-	-		
Strontium	µg/g	22.2	17.2	20.6	17.6	16.8	7.4	12.3	13.8	11.3	9.2	7.0	10.2	8.5	10.6	9.1	6.8	8.0	6.7	8.5	7.3	8.6	8.4	4.0	12.7	8.5	9.1	13.3	9.7	-	-		
Thallium	µg/g	0.10	0.12	0.13	0.21	0.11	0.06	0.19	0.11	0.12	0.07	0.14	0.41	0.17	0.21	0.31	0.11	0.25	0.15	0.19	0.26	0.16	0.20	0.07	0.38	0.09	0.38	0.28	0.25	-	-		
Uranium	µg/g	4.2	13.6	9.9	23.6	19.5	2.6	4.3	4.0	1.1	27.7	5.5	6.5	2.6	2.1	4.6	1.3	2.0	1.6	1.8	1.9	2.5	2.9	2.1	4.2	4.2	5.4	3.8	4.5	-	-		
Vanadium	µg/g	28.2	28.6	27.0	39.3	24.8	20.4	39.3	27.3	26.6	21.3	37.4	34.1	26.6	28.3	27.5	20.1	39.5	28.3	31.6	36.5	28.4	31.9	16.9	41.7	20.4	35.6	37.7	36.1	-	-		
Zinc	µg/g	75.0	92.7	-	115.5	65.3	43.4	71.5	75.5	80.6	32.3	80.3	58.0	92.5	45.9	54.2	133.0	50.3	70.4	70.0	138.5	145.3	76.6	79.2	27.4	111.5	114.6	44.1	29.8	123	315		

(a) ISQG = Interim freshwater sediment quality guideline

(b) PEL = Probable effect levels

< = less than detection limit (refer to glossary for definition)

Source: Puznicki (1996)

Notes: % = percent; µg/g = microgram per gram

Table IX.6-15
Sediment Quality in the Lockhart River Watershed, 1999

		1999																								CCME Guidelines			
Sample Date		8-Mar	8-Mar	8-Mar	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar	11-Mar	11-Mar	4-Aug	4-Aug	4-Aug	4-Aug	4-Aug	4-Aug	4-Aug	4-Aug	4-Aug	4-Aug	4-Aug	4-Aug	9-Aug	Aquatic Life		
Site Number	Units	17	24	27	1	3	4	14	26	51	52	19	35	1	12	13	23	26	26	28	30	32	34	4	ISQG ^(a)	PEL ^(b)			
Organic Matter	%	30.06	11.51	14.87	15.13	17.35	10.79	9.1	13.9	12.98	9.18	0.98	12.98	1.4	39.3	18.2	27.5	15.9	11.7	14.3	1.4	4	1.5	2.5	-	-	-	-	
Moisture Content	%	91.7	80.7	83.2	84	87.3	82.2	81.5	86.6	86.2	82.9	33.5	77.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Clay	%	-	-	-	-	-	-	-	-	-	-	-	-	2.68	0.33	3.33	0.64	2.03	3.03	6.62	1.86	18.6	15.9	5.52	-	-	-	-	
Silt	%	-	-	-	-	-	-	-	-	-	-	-	-	36.5	5.52	34.4	16.1	27.2	34.7	47.9	45.8	67.1	50.1	44.7	-	-	-	-	
Sand	%	-	-	-	-	-	-	-	-	-	-	-	-	60.8	94.2	62.3	83.2	70.8	62.2	45.5	52.3	14.4	33.9	49.8	-	-	-	-	
pH - Soil	pH	4.73	4.67	5.4	4.77	5.21	5.13	4.81	5.02	4.94	4.73	5.95	4.69	5.4	5.4	5.3	5.2	5.4	5.1	5.5	6	6	6.3	5.7	-	-	-	-	
Avail Nitrogen (Soil)	µg/g	7.79	6.35	8.17	6.03	7.94	5.39	8.12	10.2	2.94	17.2	5.6	6.7	10.9	<4	<4	<4	<4	<4	<4	<4	12.8	<4	<4	-	-	-	-	
Avail Phosphorous (Soil)	µg/g	31.1	58	17.4	43.5	31.4	337	140	61.8	60.7	74.2	34.8	60.4	310	330	321	209	510	478	1.8	32.6	507	464	1330	-	-	-	-	
Calcium (Soil External)	µg/g	1350	650	884	820	1570	637	710	1000	770	562	697	557	300	2300	1100	1600	800	700	600	200	<100	<100	600	-	-	-	-	
Potassium - Soil	µg/g	365	320	513	224	673	363	232	312	285	449	365	200	120	290	90	80	130	70	90	180	60	60	80	-	-	-	-	
Sodium (Soil External)	µg/g	177	148	115	148	179	157	177	196	149	132	197	138	50	50	<40	<40	<40	<40	<40	<40	80	<40	<40	<40	-	-	-	-
Total Metals																													
Aluminum	µg/g	29000	16000	31000	13000	18000	18000	15000	17000	15000	18000	9000	15000	8700	10800	15200	18500	14200	15100	14100	8400	20000	15200	17200	-	-	-	-	
Antimony	µg/g	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	
Arsenic	µg/g	2.1	17.2	3.9	3.5	14.1	3.4	15.1	5.9	1.4	11.7	0.6	22.1	2.9	2.6	22.6	12.1	11	11.6	9.7	55.3	23.4	8.1	9.6	-	-	-	-	
Barium	µg/g	148	86.8	205	83.6	115	108	90.8	101	101	139	62.2	90.1	50.1	86.6	73	91.8	84.9	82.7	176	97.9	89.1	71.9	70.3	-	-	-	-	
Beryllium	µg/g	1.4	0.5	0.8	0.5	0.7	0.8	0.4	0.5	0.2	0.5	0.2	0.4	0.4	<0.4	0.5	0.9	<0.4	0.6	0.5	<0.4	0.6	<0.4	0.8	-	-	-	-	
Bismuth	µg/g	0.3	0.2	0.4	0.2	0.3	0.3	0.2	0.3	<0.2	<0.2	<0.2	0.3	<0.2	1.5	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-
Cadmium	µg/g	0.8	0.8	0.4	0.4	0.7	<0.2	0.3	0.5	<0.2	0.5	<0.2	0.3	<0.2	0.2	0.4	0.6	0.4	0.4	0.4	0.7	0.2	<0.2	1	0.6	-	-	3.5	
Calcium	µg/g	2400	1600	2300	2100	4200	2600	2200	2500	3700	2500	3400	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cesium	µg/g	2	1.6	4	1.6	2	2.3	1.7	2	2.2	1.7	0.4	1.7	1.3	1.9	2.3	2.3	1.9	1.9	1.4	1	2.7	2.1	2	-	-	-	-	
Chromium	µg/g	34	31.8	60	30.7	35.4	39.9	33.4	34.8	36.4	36	12.1	33.4	22.9	29.9	38.1	41.7	33.1	30.2	28.3	17.1	40.2	33.2	40.6	37.3	-	-	90	
Cobalt	µg/g	11.1	45.1	24.2	7.5	22.4	8.8	14.6	14.9	8.5	12.2	3.9	13.8	4	7	13.4	14.7	15.9	18.4	124	51.1	24.4	22.6	12.8	-	-	-	-	
Copper	µg/g	81	46.4	77.2	50.4	55.5	51.9	36.1	55.8	29.3	44.9	6.8	35.7	19.7	32.9	60.4	86.9	47.4	47.2	61.5	15.1	41.6	26.4	55.7	35.7	-	-	197	
Iron	%	0.0549	0.0216	0.0357	0.014	0.0256	0.0195	0.0322	0.0161	0.0154	0.0353	0.0113	0.0316	0.0096	0.0202	0.0221	0.0324	0.0199	0.0211	0.164	0.0213	0.0306	0.0222	0.0316	-	-	-	-	
Lead	µg/g	31.1	11.6	29.7	84.2	47.2	15.9	56	27	18.3	86	3.2	5.7	82.7	3.9	5.6	5	153	4.4	4	3.5	4.7	42.1	5.2	35	-	-	91.3	
Lithium	µg/g	17.4	16.2	42.6	18.7	18.5	22.5	15.2	20.1	20.8	17.2	6.5	15.5	18.8	19	19.1	20	21.8	21.8	12.9	18.8	32.9	29.7	22.3	-	-	-	-	
Magnesium	µg/g	4600	3800	10400	4300	5000	5500	4500	6900	6300	4100	5200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Manganese	µg/g	1310	666	2270	163	362	246	562	251	171	905	134	531	112	388	337	256	451	592	21200	8010	3600	580	260	-	-	-	-	
Mercury	µg/g	0.029	0.022	0.013	0.019	0.038	0.024	0.036	0.023	0.044	0.009	0.008	0.05	-	-	-	-	-	-	-	-	-	-	-	0.17	-	-	0.486	
Molybdenum	µg/g	10.2	2.7	3.6	1.2	2.6	1.4	2.5	2.1	1	2	<0.2	2.5	0.2	1.4	2.6	4.9	1.9	2	6.5	2.9	6.5	1.2	2.7	-	-	-	-	
Nickel	µg/g	33.2	69.9	78.6	35.6	66.8	35.8	25	48	29.5	54.3	8.7	24	22.3	26.4	37.8	51.4	48.3	47.9	92.5	65.7	45.5	39.1	42.9	-	-	-	-	
Potassium	µg/g	3000	2100	7400	2400	3200	3300	2200	3000	3700	3100	2200	2700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rubidium	µg/g	19.1	12.8	42.7	14.3	18.2	19.4	14.2	17.4	23.3	21.2	9.3	14.1	10	15	14.4	14.3	15.3	14.9	9.1	8.9	23.3	19.2	13.9	-	-	-	-	
Selenium	µg/g	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	
Silver	µg/g	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	
Sodium	µg/g	300	500	400	500	600	600	500	600	700	500	1000	500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Strontium	µg/g	24.2	13.7	19.1	17.8	21.4	19.3	14.8	19.6	22	33.9	22.7	15.3	11.7	21.1	15.4	17.8	15.9	15.6	11.3	9.3	14.1	12.5	14.4	-	-	-	-	
Thallium	µg/g	0.3	0.3	0.4	<0.2	0.2	<0.2	<0.2	0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	0.5	0.7	0.3	<0.2	0.2	-	-	-	-	
Titanium	µg/g	244	349	1280	379	520	577	440	437	754	674	570	423	426	478	318	308	469	488	263	321	901	962	467	-	-	-	-	
Uranium	µg/g	44.8	2.8	10.9	2.6	3.7	3.4	2.2	3.4	2	3	0.6	2.2	1.5	2.5	5	8.6	3.1	3	2.5	2.1	4	2	4.2	-	-	-	-	
Vanadium	µg/g	34.9	33.4	51.4	26.3	38.6	37.9	35.6	31.9	34.4	39.4	20.9	34.9	17.2	24.9	32.5	36.8	29.4	29	31.4	16.9	37.2	28.8	40.1	-	-	-	-	
Zinc	µg/g	167	111	112	69	142	64	69	107	73	115	23	71	24.4	50.2	83.3	129	71.8	72	112	83.8	62.7	52.9	134	123	-	-	315	

^(a) ISQG = Interim freshwater sediment quality guideline

^(b) PEL = Probable effect levels

Source: Unpublished Indian and Northern Affairs Canada (INAC) Data supplied by Bart Blais (July 26 2001)

< = less than detection limit (refer to glossary for definition)

Notes: % = percent; µg/g = microgram per gram

Table IX.6-16

[illegible]

Table IX.6-16
Water Quality in the Lockhart River at the Outlet at Artillery Lake, 1969 to 2000 (Continued)

	Units	1994										1995							1996					1997	1998			1999		2000							Water Quality Guidelines ^a	
		21-Jan	21-Jan	21-Jan	17-May	6-Jun	26-Aug	26-Aug	26-Aug	15-Nov	31-Jan	5-May	9-Jun	19-Sep	19-Sep	19-Sep	27-Nov	3-Feb	18-Jun	16-Sep	16-Sep	16-Sep	28-Aug	10-Feb	29-Aug	4-Feb	13-Jun	17-Jan	10-Apr	23-Aug	23-Aug	23-Aug	17-Jun	Drinking Water	Aquatic Life			
Conventional Parameters																																						
pH (Lab)	pH	6.44	6.53	6.47	6.74	6.61	6.52	6.87	6.52	6.68	6.59	6.35	6.32	6.71	6.87	6.88	6.66	6.77	6.95	7.01	7.02	6.99	7.03	6.97	6.76	-	6.85	6.87	6.58	6.96	6.94	6.94	6.9	6.5-8.5	6.5-9.0			
pH (Field)	pH	-	-	-	5.52	5.73	7.12	7.12	7.12	6.95	7.24	6.86	7.07	7.2	7.2	7.2	6.6	-	6.76	6.79	6.79	6.79	7.08	7.4	7.5	-	-	8.1	6.98	7.4	7.4	7.4	6.92	6.5-8.5	6.5-9.0			
Alkalinity	mg/L	4.2	5.3	6	5.2	4.6	7.1	5	5.6	5	5	5.6	4.9	6.5	6.3	5.5	5.6	5.7	4.6	-	-	-	4.6	3.63	4.1	4.2	5.8	4.6	4.2	4.2	4.2	4.2	6.2	-	-			
Total Dissolved Solids	mg/L	20	21	10	20	30	10	13	13	19	11	<10	-	<10	17	24	15	17	-	11	<10	30	<10	<10	10	-	13	26	16	29	32	29	18	=500 ^(b)	-			
Total Suspended Solids	mg/L	<3	<3	<3	3	<3	<3	<3	<3	<3	<3	4	<3	6	4	9	<3	<3	3	<3	<3	<3	3	<3	<3	-	3	<3	<3	<3	<3	<3	<3	-	-			
Hardness	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Conductivity (Lab)	µS/cm	16.8	16.5	16.3	17.5	18.7	18.9	17.7	18.9	16.1	18.2	18.9	19.7	15.5	17.7	15.8	15.6	16.6	16.1	15.1	15.6	15.2	16.5	20.3	16.4	-	19.9	20.4	16.1	15.4	15.3	15.2	19.3	-	-			
Conductivity (Field)	µS/cm	-	-	-	10	-	-	-	10	10	10	12.2	11.9	14.7	14.7	14.7	10.6	-	16.1	15.7	15.7	15.7	14.3	10	15.8	10	24.5	14.1	14.4	10	10	10	11.1	-	-			
Colour (True)	TCU	5	<5	<5	<5	<5	6	5	5	5	5	<5	5	<5	<5	<5	5	<5	<5	<5	<5	<5	<5	<5	<5	-	5	<5	5	<5	5	5	<5	=15 ^(b)	-			
Turbidity	NTU	0.6	0.2	0.2	0.5	0.2	0.2	0.6	0.2	1.7	1.1	0.1	0.2	1	0.5	0.5	1.5	0.4	0.4	0.5	1.1	0.3	0.2	0.1	0.2	-	5.2	1.5	0.5	0.1	0.1	0.1	0.7	1	short-term increase <8 long-term increase <2			
Nutrients																																						
Ammonia	mg/L	0.02	0.02	0.022	0.01	0.001	0.03	0.018	0.02	0.092	0.011	0.02	0.022	<0.005	0.006	0.006	0.024	0.048	0.012	0.015	<0.002	<0.002	0.008	0.079	0.008	-	0.005	0.09	0.011	<0.005	<0.005	<0.005	0.034	-	11.1			
Nitrate + Nitrite	mg/L	-	-	-	0.022	0.04	0.01	<0.01	0.01	0.069	0.029	0.027	0.04	0.036	0.023	0.023	0.056	0.031	0.037	0.014	0.014	0.023	0.037	0.036	<0.008	-	0.045	0.022	0.019	-	<0.008	<0.008	0.025	-	-			
Total Kjeldahl Nitrogen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Total Phosphorus	mg/L	<0.002	0.004	0.005	0.004	0.004	<0.002	0.006	<0.002	0.003	0.005	0.01	-	0.003	0.004	0.005	0.004	0.003	0.002	0.006	0.007	0.008	0.02	0.002	0.002	-	0.011	0.012	0.009	<0.004	<0.004	0.004	0.006	-	-			
Dissolved Phosphorus	mg/L	<0.002	<0.002	0.003	0.004	0.003	<0.002	0.005	0.003	0.002	0.004	0.008	-	0.003	0.004	0.003	0.003	0.003	<0.002	0.004	0.003	0.004	0.019	<0.002	0.002	-	0.01	0.004	0.009	<0.004	<0.004	0.004	<0.002	-	-			
Orthophosphate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Dissolved Organic Carbon	mg/L	1.7	1.4	1.3	2.5	2.4	3.4	3	3.3	1.8	2.1	2.4	2	2.2	2	2.2	2	2.5	1.8	-	-	-	-	-	2.4	2.2	2.4	2.5	2.4	2.8	2.8	2.7	2.5	2.6	-	-		
Total Organic Carbon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Major Ions																																						
Calcium	mg/L	1.2	1.1	1	1.15	1.25	1.27	1.29	1.29	1.3	1.1	1.1	1.4	-	1.23	1.22	1.2	1.23	1.31	-	-	-	-	1.08	1.06	1.18	1.4	1.25	1.24	1.25	1.25	1.26	1.49	-	-			
Chloride	mg/L	0.44	0.44	0.43	0.49	0.47	0.38	0.35	0.38	0.4	0.49	0.43	0.42	0.42	0.43	0.43	0.4	0.48	0.62	-	-	-	0.82	0.46	0.52	0.43	0.66	0.66	0.74	0.39	0.39	0.39	0.44	=250 ^(b)	230			
Fluoride	mg/L	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.05	0.01	0.03	0.03	0.03	0.03	0.02	0.04	0.04	-	-	-	-	0.03	0.03	0.03	0.03	0.04	0.03	0.04	0.03	0.03	0.03	-	-			
Magnesium	mg/L	0.63	0.59	0.58	0.57	0.59	0.64	0.65	0.65	0.57	0.58	0.58	0.67	0.61	0.61	0.62	0.59	0.62	0.65	-	-	-	-	0.55	0.536	0.58	0.715	0.63	0.63	0.68	0.61	0.6	0.78	-	-			
Potassium	mg/L	0.41	0.41	0.41	0.44	0.41	0.41	0.4	0.41	0.41	0.46	0.48	0.43	0.44	0.44	0.45	0.43	0.49	0.41	-	-	-	-	0.57	0.43	0.58	0.58	0.57	-	0.42	0.42	0.43	0.47	-	-			
Silica	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Sodium	mg/L	0.46	0.46	0.46	0.49	0.47	0.46	0.49	0.46	0.43	0.53	0.53	0.45	0.44	0.52	0.53	0.45	0.55	0.45	-	-	-	-	0.43	0.49	0.56	0.47	0.72	0.56	0.47	0.47	0.48	0.5	=200 ^(b)	-			
Sulphate	mg/L	1.6	1.6	1.8	1.7	1.5	1.3	1.3	1.3	1.6	0.7	2.2	1.7	1.2	1.2	1.2	1.5	1.6	1.7	-	-	-	6.8	1.2	1.9	1.6	1.9	1.7	1.4	1.1	1	1.2	-	=500 ^(b)	-			
Total Metals																																						
Aluminum	µg/L	23	18	8	8	6	5	10	6	6	4	6	8	2	<2	<2	9	6	7	0.2	10	6	7	5	4	4	11	5	4	3	3	14	4	-	100			
Barium	µg/L	2.5	2.4	2.3	2.4	2.2	2.2	2.3	2.3	2.4	2.2	3.3	2.1	2.4	2.4	2.3	2.4	2.6	2.7	2.4	2.2	2.4	-	2.3	2.2	2.2	2.9	2.5	2.5	2.2	2.5	2.7	-	1000	-			
Beryllium	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-			
Cadmium	µg/L	-	-	-	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	0.1	0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	0.003			
Chromium	µg/L	0.3	0.3	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	3	<0.2	<0.2	<0.2	6	0.7	-	<0.2	<0.2	<0.2	0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	50	1			
Cobalt	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0.1	<0.1	<0.1	0.1	0.1	<0.1	1.2	1.2	1.4	<0.1	-	-			
Copper	µg/L	-	-	-	1.2	0.5	0.5	0.6	0.5	0.9	0.4	0.4	0.7	0.5	0.5	0.5	0.6	0.8	0.8	0.9	6	0.7	-	0.7	0.6	0.5	1.4	1.5	0.7									