

Appendix X

Process Effluent Discharge into Long Lake Projected to Meet
MMER Water Quality at End of Pipe

Table 17.L.1 MMER Authorized Limits of Deleterious Substances (Schedule 4)

Parameter	Units	Maximum Monthly Mean Concentration	Maximum Concentration in a Composite Sample	Maximum Concentration in a Grab Sample
Arsenic	mg/L	0.50	0.75	1.00
Copper	mg/L	0.30	0.45	0.60
Cyanide	mg/L	1.00	1.50	2.00
Lead	mg/L	0.20	0.30	0.40
Nickel	mg/L	0.50	0.75	1.00
Zinc	mg/L	0.50	0.75	1.00
Total Suspended Solids	mg/L	15.0	22.5	30.0
Radium 226	Bq/L	0.37	0.74	1.11

Table 17.L.2 Newfoundland Environmental Control Water and Sewage Regulations Schedule A

Constituents	Maximum Content (in mg/L unless noted)
B.O.D.	20
Coliform – fecal	1000/100 ml
Coliform – total	5000/100 ml
Solids (dissolved)	1000 ^a
Solids (suspended)	30 ^a
Oils (Ether extract)	15
Floating debris, oils and grease	None to be visible
Arsenic	0.5
Barium	5.0
Boron	5.0
Cadmium	0.05
Chlorine	1.0
Chromium (hexavalent)	0.05
Chromium (trivalent)	1.0
Copper	0.3
Cyanide	0.025
Iron (total)	10
Lead	0.2
Mercury	0.005
Nickel	0.5
Nitrates	10
Nitrogen (ammoniacal)	2.0
Phenol	0.1
Phosphates (total as P ₂ O ₅)	1.0

Constituents	Maximum Content (in mg/L unless noted)
Phosphorus (elemental)	0.0005
Selenium	0.01
Sulfides	0.5
Silver	0.05
Zinc	0.5
^a If water is being abstracted from a water course, used, treated and subsequently returned to the same water course, these solids data mean that the effluent should not contain more than 1000 or 30 mg/L more than was in the water quality original abstracted	

Table 17.L.3 Background Water Quality of Streams and Lakes in the Project Area

Constituents	Content (mg/L unless noted)		
	Max	Mean	Min
Solids (dissolved)	110	55	27
Solids (suspended)	5.2	1.3	0.5
Arsenic	0.0005	0.0005	0.0005
Barium	0.031	0.015	0.009
Boron	0.025	0.025	0.025
Cadmium	0.000056	0.000016	0.0000085
Chlorine			
Chromium (hexavalent)			
Chromium (trivalent)			
Copper	0.0024	0.001056	0.001
Cyanide	0.001	0.001	0.001
Iron (total)	0.493	0.112	0.025
Lead	0.00084	0.00029	0.00025
Mercury	0.00007	0.00001	0.00001
Nickel	0.001	0.001	0.001
Nitrates	0.27	0.062	0.025
Nitrogen (ammoniacal)	0.16	0.038	0.025
Phenol			
Phosphates (total as P ₂ O ₅)			
Phosphorus (elemental)	0.018	0.010	0.003
Radium 226	0.2 Bq/L	0.00629 Bq/L	0.0025 Bq/L
Selenium	0.0005	0.0005	0.0005
Sulfides			
Silver	0.00005	0.00005	0.00005
Zinc	0.031	0.006	0.0025

Table 17.L.4 Canadian Water Quality Guidelines

Constituents	CWQG Guideline (mg/L unless noted)
Solids (dissolved)	-
Solids (suspended)	6.2 ^b
Arsenic	0.005
Barium	-
Boron	1.5
Cadmium	0.000014
Chlorine	0.0005
Chromium (hexavalent)	0.001
Chromium (trivalent)	0.0089
Copper	0.002
Cyanide	0.005
Iron (total)	0.3
Lead	0.001
Mercury	0.000026
Nickel	0.044
Nitrates	13
Nitrogen (ammoniacal)	
Phenol	0.004
Phosphates (total as P ₂ O ₅)	
Phosphorus (elemental)	0.01
Radium 226	0.0025 Bq/L
Selenium	0.001
Sulfides	-
Silver	0.0001
Zinc	0.03
^b Clear flow: Maximum increase of 25 mg/L from background levels for any short-term exposure (e.g., 24 h period). Maximum average increase of 5 mg/L from background levels for longer term exposures (e.g., inputs lasting between 24 h and 30 d). High flow: Maximum increase of 25 mg/L from background levels at any time when background levels are between 25 and 250 mg/L. Should not increase more than 10% of background levels when background is > 250 mg/L	