

Appendix 7-1

Water Quality at Five Proposed Stream Crossings

Appendix 7-1: Table A: Laboratory Water Quality Results for Nitrogen in Streams Crossed by the Proposed P4-All-Season Road

Site ID	Watercourse	Sample Date	Nitrogen							
			Ammonia	Nitrate/ Nitrite	Nitrate-N	Nitrite-N	Total Kjeldahl Nitrogen	Dissolved Inorganic N ¹	Organic N ²	Total N ³
			(mg N/L)	(mg N/L)	(mg N/L)	(mg N/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Detection Limit			0.010	0.0051	0.0050	0.0010	0.20	-	-	-
MWQSOG⁴			3.43-49.01	2.93	2.93					
P4-X01	Berens River	22-Jul-14	<0.010	0.0129	0.0129	<0.0010	0.52	0.0629	0.47	0.53
P4-X04	Etomami River	22-Jul-14	0.032	0.0116	0.0116	<0.0010	0.89	0.0436	0.86	0.90
P4-X07	North Etomami River	22-Jul-14	<0.010	0.0091	0.0091	<0.0010	0.97	0.0591	0.92	0.98
P4-X22	Leaf River	22-Jul-14	<0.010	<0.0051	<0.0050	<0.0010	1.02	0.0526	0.97	1.02
P4-X30	Okeyakkoteinewin Creek	22-Jul-14	<0.010	<0.0051	<0.0050	<0.0010	0.85	0.0526	0.80	0.85
QAQC										
Field Blank		22-Jul-14	<0.010	<0.0051	<0.0050	<0.0010	<0.20	0.0526	0.05	0.10
Trip Blank		22-Jul-14	<0.010	<0.0051	<0.0050	<0.0010	<0.20	0.0526	0.05	0.10

1 – Calculated as the sum of ammonia-N and nitrate/nitrite-N.

2 – Calculated as the difference between total Kjeldahl N and ammonia

3 – Calculated as the sum of total Kjeldahl N and nitrate/nitrite-N.

4 – Manitoba water quality standards, objectives and guidelines

Source: North/South Consultants Inc. (2015)

Appendix 7-1: Table B: Laboratory Water Quality Results for Other Parameters in Streams Crossed by the Proposed P4-All-Season Road

Site ID	Watercourse	Sample Date	Total Dissolved Phosphorus (mg/L)	Total Phosphorus (mg/L)	Total Organic Carbon (mg/L)	Water Clarity		Algal Pigments		
						Total Suspended Solids (mg/L)	Turbidity (NTU)	pH (pH units)	Chlorophyll a (µg/L)	Phaeophytin a (µg/L)
Detection Limit			0.0010	0.0010/0.010	1.0/10	2.0	0.10	0.1	0.10	0.10
MWQSOG¹				0.05 ²				6.5-9.0 ³		
P4-X01	Berens River	22-Jul-14	0.0109	0.0214	20.0	5.2	3.90	7.28	3.30	2.49
P4-X04	Etomami River	22-Jul-14	0.0202	0.032	36.5	8.8	8.60	6.49	2.14	2.16
P4-X07	North Etomami River	22-Jul-14	0.0222	0.042	36.5	17.6	21.0	6.58	3.17	3.29
P4-X22	Leaf River	22-Jul-14	0.0230	0.050	<10	19.6	19.7	6.76	2.79	2.94
P4-X30	Okeyakkoteinewin Creek	22-Jul-14	0.0150	0.030	31.8	11.2	16.6	6.82	1.13	1.98
QAQC										
Field Blank		22-Jul-14	0.0015	<0.0010	<1.0	<2.0	<0.10	6.53	<0.10	<0.10
Trip Blank		22-Jul-14	0.0011	<0.0010	<1.0	<2.0	<0.10	6.19	<0.10	<0.10

1 – Manitoba water quality standards, objectives and guidelines

2 – Narrative guideline for streams

3 – Lower and upper limits of the guidelines for protection of aquatic life

Note: Results in **bold** indicate values that do not fall within the Manitoba water quality guidelines for the protection of aquatic life.

Source: North/South Consultants Inc. (2015)