

**Assessment Study of
Water and Wastewater Systems
and Associated Water Management Practices
at the McLeod Lake First Nation Community**

**for the
Indian and Northern Affairs Canada
BC Region**



December, 2001

Appendix C

Water Quality Test Results

Community :: McLEOD LAKE

Sampling Year :: 1999

DATE	LOCATION	GB	TC	FC
04/30/99	Band Hall	0	0	0
06/23/99	Band Hall	0	0	0
06/23/99	Mile 3 Pumphouse	14	0	0
06/23/99	Mile 19 (Private Well)	2	0	0
06/23/99	Mile 19 (Private Well) with Filter	0	0	0
07/16/99	Mile 3 Pumphouse	4	0	0
07/16/99	Band Hall	0	0	0
08/20/99	Mile 3 Pumphouse	2	0	0
08/20/99	Band Hall	2	0	0
09/23/99	Mile 3 Pumphouse	0	0	0
09/23/99	Band Hall	2	0	0
10/29/99	Mile 3 Pumphouse	0	0	0
10/29/99	Band Hall	0	0	0
12/14/99	Mile 3 Residence	0	0	0
12/14/99	Community Hall	0	0	0

Community :: McLEOD LAKE

Sampling Year :: 2000

s.19(1)

s.19(1)

DATE	LOCATION	GB	TC	FC
02/25/00	Mile 3 Cluster Well	0	0	0
02/25/00	Community Hall	0	0	0
06/20/00	Community Hall	0	0	0
06/20/00		0	0	0
06/20/00		0	0	0
06/20/00		0	0	0
06/20/00	Mile 3 Pumphouse	0	0	0
07/27/00	Mile 3 Cluster Well	0	0	0
07/27/00	MLIB Kitchen	0	0	0
07/27/00		0	0	0
07/27/00		0	0	0
07/27/00		0	0	0
08/31/00	Mile 3 Cluster Well	0	0	0
08/31/00	Band Office	0	0	0
08/31/00		0	0	0
08/31/00		0	0	0
09/27/00	Mile 3 Cluster Well	0	0	0
09/27/00	Band Office	0	0	0
09/27/00		0	0	0
09/27/00		0	0	0
11/23/00	Mile 3 Cluster Well	0	0	0
11/23/00	Band Office	0	0	0
11/23/00		0	0	0

Community :: McLEOD LAKE

Sampling Year :: 2001

s.19(1)

s.19(1)

s.19(1)

DATE	LOCATION	GB	TC	FC
03/05/01	Mile 3 Cluster Well	0	0	0
03/05/01		0	0	0
03/05/01		0	0	0
03/05/01	Band Hall	0	0	0
04/26/01	Band Office	0	0	0
04/26/01	Mile 3 Cluster Well	0	0	0
04/26/01		0	8	12
04/26/01		0	0	0
07/27/01		0	0	0
07/27/01		0	2	0
07/27/01		0	0	0
07/27/01		0	0	0
08/28/01		0	0	0
08/28/01	Health Clinic	0	0	0
08/28/01		0	0	0
08/28/01		0	0	0
10/31/01		0	0	0
10/31/01	Mile 19 Private Well	122	0	0
10/31/01	Mile 3 Cluster Well	0	0	0
10/31/01		0	0	0



ANALYTICAL SERVICES

ANALYTICAL REPORT
Form 08087977

01-Nov-01
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Client : HEALTH CANADA
Project : MCLEOD LAKE IN
Sampling site :
Submitted by : BRIGIT MURPHY

Philip ID : 11070433
Client ID : MCLEOD LAK
E MAIN W.
11070434
MCLEOD LA
KE MILE 3

Sparecode	Parameter	Unit	MDL	CDWG		
PHYSICAL						
0004:220	pH	pH units	0.1	6.5-8.5	8.2	8.2
00021300	Color True	Col. Unit	5	15	< 5	< 5
00111160	Specific Conductance	uS/cm	1	---	363	725
SCCACALC	Computed Conductance	uS/cm	---	---	395	825
CCPDCALC	Conductance % Diff.	%	---	---	7.9	12.9
007H1035	Residue Filterable 1.0u (TDS)	mg/L	10	500	212	422
CTDSCALC	Computed TDS	mg/L	---	---	202	412
TDSRCALC	TDS % Diff.	%	---	---	2.7	2.4
00151140	Turbidity	NTU	0.10	1.0	< 0.10	< 0.10
0107CALC	Hardness Total -T	mg/L	---	500	194	385
GENERAL INORGANICS						
01011211	Alkalinity Phen. 8.3 as CaCO3	mg/L	1	---	< 1	< 1
01021210	Alkalinity Total as CaCO3	mg/L	1	---	174	358
CO3-CALC	Carbonate as CO3=	mg/L	---	---	< 0.5	< 0.5
HCO3CALC	Bicarbonate as HCO3-	mg/L	---	---	212	412
OH-CALC	Hydroxide as OH-	mg/L	---	---	< 0.5	< 0.5
ANIONS						
1104:334	Chloride Dissolved	mg/L	1.0	< 250	7.9	47.4
1106:341	Fluoride Dissolved	mg/L	0.10	1.5	< 0.10	< 0.10
IonBCALC	Ion Balance	%	---	---	0.0	0.4
AnnsCALC	Total Anions	meq/L	---	---	3.99	8.20
CmsCALC	Total Cations	meq/L	---	---	3.99	8.27
LmgCALC	Langelier Index	pH units	---	---	0.8	1.3
pHSACALC	Saturation pH	pH units	---	---	7.4	6.9
NITROGEN						
1110CALC	Nitrate Nitrogen Dissolved (N)	mg/L	---	10.0	0.98	0.09
11091350	Nitrate + Nitrite (N)	mg/L	0.02	10.0	0.98	0.09
1111354	Nitrite Nitrogen (N)	mg/L	0.005	1.0	0.005	0.005

Matrix : Water
Sampled on: 01/10/19 13:15
Water
01/10/19 13:15

CONTINUED on page 3



ANALYTICAL SERVICES

01-Nov-01
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ANALYTICAL REPORT
Form 08087977

Client : HEALTH CANADA
Project : MCLEOD LAKE IN
Sampling site :
Submitted by : BRIGIT MURPHY

Philip ID : 11070433
Client ID : MCLEOD LAK
E MAIN W.

11070434
MCLEOD LA
KE MILE 3

Sparcode	Parameter	Unit	MDL	CDWG		
SULFATE						
11211405	Sulfate	mg/L	1.0	< 500	9.7	4.9
METALS TOTAL						
Al-T0031	Aluminum	mg/L	0.02	—	< 0.02	< 0.02
As-TMS31	Arsenic	mg/L	0.001	0.025	< 0.001	< 0.001
Ba-T0031	Barium	mg/L	0.001	1.0	0.119	0.112
B--T0031	Boron	mg/L	0.008	5.0	< 0.008	< 0.008
Cd-TMS31	Cadmium	mg/L	0.0001	0.005	< 0.0001	< 0.0001
Ca-T0031	Calcium	mg/L	0.05	—	66.2	127
Cr-T0031	Chromium	mg/L	0.002	0.05	< 0.002	0.003
Cu-TO031	Copper	mg/L	0.001	1.0	0.002	0.047
Fe-T0031	Iron	mg/L	0.005	0.3	0.055	0.032
Pb-TMS31	Lead	mg/L	0.001	0.01	< 0.001	0.002
Mg-T0031	Magnesium	mg/L	0.05	—	7.02	16.5
Mn-T0031	Manganese	mg/L	0.001	0.05	< 0.001	0.003
Hg-TU310	Mercury	mg/L	0.00005	0.001	< 0.00005	< 0.00005
K_T0031	Potassium	mg/L	0.4	—	0.8	0.6
Se-TMS31	Selenium	mg/L	0.001	0.01	0.001	< 0.001
Na-T0031	Sodium	mg/L	0.010	200	1.92	12.4
U--TLLMS	Uranium	mg/L	0.00001	0.1	0.00079	0.00045
Zn-T0031	Zinc	mg/L	0.002	5.0	0.007	0.215

IR # 5

Matrix : Water
Sampled on: 01/10/19 13:15

Water
01/10/19 13:15


RESULTS OF ANALYSIS - Water

File No. F9969

		McLeod Lake Mile 12 96 05 09	McLeod Lake Mile 3 96 05 09	IR# 5
Physical Tests				
Colour	CU	<5	-	
Conductivity (umhos/cm)		-	644	
Total Dissolved Solids		-	391	
pH		7.86	7.47	
Turbidity (NTU)		2.8	-	
Dissolved Anions				
Alkalinity - Total	CaCO ₃	-	348	
Chloride	Cl	-	12.5	
Fluoride	F	-	0.04	
Sulphate	SO ₄	-	3.9	
Nutrients				
Nitrate Nitrogen	N	-	0.079	
Nitrite Nitrogen	N	-	<0.001	
Total Metals				
Aluminum	T-Al	-	<0.2	
Arsenic	T-As	-	<0.0001	
Barium	T-Ba	-	0.10	
Boron	T-B	-	<0.1	
Cadmium	T-Cd	-	<0.0002	
Calcium	T-Ca	-	106	
Chromium	T-Cr	-	<0.02	
Copper	T-Cu	-	0.04	
Iron	T-Fe	0.27	0.03	
Lead	T-Pb	-	0.001	
Manganese	T-Mn	0.027	0.028	
Mercury	T-Hg	-	<0.00005	
Molybdenum	T-Mo	-	<0.01	
Selenium	T-Se	-	<0.0005	
Sodium	T-Na	-	8	
Zinc	T-Zn	-	0.443	

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except for pH,
 Conductivity (umhos/cm), Turbidity (NTU), and Colour (CU).
 < = Less than the detection limit indicated.

005260



RESULTS OF ANALYSIS - Water

File No. J2849

McLeod
L. Com.
Well
98 02 27

IR #1

Physical Tests

Colour	(CU)	
Conductivity	(umhos/cm)	<5
Total Dissolved Solids		334
Hardness	CaCO3	184
pH		182
		7.72
Turbidity	(NTU)	0.1

Dissolved Anions

Alkalinity-Total		CaCO3	
Chloride	Cl		173
Fluoride	F		4.4
Sulphate	SO4		<0.02
			8

Nutrients

Nitrate Nitrogen		N	0.384
Nitrite Nitrogen		N	0.002

Total Metals

Aluminum	T-Al		<0.2
Arsenic	T-As		0.0005
Barium	T-Ba		0.12
Boron	T-B		<0.1
Cadmium	T-Cd		<0.0002
Calcium	T-Ca		61.6
Chromium	T-Cr		<0.01
Copper	T-Cu		<0.01
Iron	T-Fe		<0.03
Lead	T-Pb		<0.001
Magnesium	T-Mg		6.97
Manganese	T-Mn		<0.005
Mercury	T-Hg		<0.00005
Potassium	T-K		<2
Selenium	T-Se		0.0010
Sodium	T-Na		<2
Zinc	T-Zn		0.060

Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except for pH, Colour (CU),
 Conductivity (umhos/cm), and Turbidity (NTU).
 < = Less than the detection limit indicated.

Appendix D

Wastewater Quality Test Results

Appendix D
Wastewater Quality Tests

(None available)