

E4380-597

N. LADICZAK

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**ASSESSMENT STUDY OF WATER AND WASTEWATER SYSTEMS
AND ASSOCIATED WATER MANAGEMENT PRACTICES
AT PENTICTON FIRST NATION PENTICTON IR NO. 1**

Gray

For

**Indian and Northern Affairs Canada
British Columbia Region**

Original In File
113782

By

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October 2001

**Assessment Study of Water and Wastewater Systems
Penticton First Nation Penticton IR No. 1**

Appendix D

WATER TESTING RESULTS

(CHEMICAL/PHYSICAL/BACTERIOLOGICAL)
WITH COMPARISONS TO THE
GUIDELINES FOR CANADIAN DRINKING WATER QUALITY (GCDWQ)



Yenticton Band
Health Canada files.
Dec 12/00 Sample date

ILIP ANALYTICAL

13-Jan-01
Page 2 of 8

ANALYTICAL REPORT
Form 08051327

Client : HEALTH CANADA
Sampling site :
Submitted by : DALE THOMAS

Lower Village (Upper) Westhills subdivision unknown

Philip ID : 10087859 10087860 10087861
Client ID : [REDACTED]

Sparcode	Parameter	Unit	MDL	CDWG	s.19(1)		
PHYSICAL							
00041220	pH	pH units	0.1	6.5-8.5	7.9	7.9	10.6
00021300	Color True	Col.Unit	5	15	< 5	< 5	< 5
00111160	Specific Conductance	uS/cm	1	—	353	351	3400
SCCACALC	Computed Conductance	uS/cm	—	—	402	402	2050
CCPDALC	Conductance % Diff.	%	—	—	13.1	13.5	-49.5
007H1035	Residue Filterable 1.0u (TDS)	mg/L	10	500	222	220	2190
CTDSCALC	Computed TDS	mg/L	—	—	211	211	1350
TDSRCALC	TDS % Diff.	%	—	—	-5.2	-4.3	-47.6
011140	Turbidity	NTU	0.10	1.0	0.27	0.40	146
011140	Hardness Total -T	mg/L	—	500	172	172	173
GENERAL INORGANICS							
01011211	Alkalinity Phen. 8.3 as CaCO3	mg/L	1	—	< 1	< 1	912
01021210	Alkalinity Total as CaCO3	mg/L	1	—	187	187	2080
CO3-CALC	Carbonate as CO3=	mg/L	—	—	< 0.5	< 0.5	1090
HCO3CALC	Bicarbonate as HCO3-	mg/L	—	—	228	228	312
OH-CALC	Hydroxide as OH-	mg/L	—	—	< 0.5	< 0.5	< 0.5
ANIONS							
11041334	Chloride Dissolved	mg/L	1.0	< 250	2.1	1.9	2.0
11061341	Fluoride Dissolved	mg/L	0.10	1.5	0.20	0.20	0.20
IonBCALC	Ion Balance	%	—	—	-0.7	-0.9	-82.1
AnnsCALC	Total Anions	meq/L	—	—	4.16	4.17	41.93
CtnsCALC	Total Cations	meq/L	—	—	4.11	4.10	4.13
LangCALC	Langelier Index	pH units	—	—	0.4	0.4	4.1
PHSACALC	Saturation pH	pH units	—	—	7.5	7.5	6.5
NITROGEN							
1110CALC	Nitrate Nitrogen Dissolved (N)	mg/L	—	10.0	0.03	0.04	0.04
11091350	Nitrate+Nitrite (N)	mg/L	0.02	10.0	0.03	0.04	0.09
11111354	Nitrite Nitrogen (N)	mg/L	0.005	1.0	< 0.005	< 0.005	0.046

Matrix : Water Water Water
Sampled on: 00/12/20 16:00 00/12/20 16:00 00/12/20 16:00

CONTINUED on page 3

RESULTS OF ANALYSIS - Water

Vernon Band

Lower Village

File No. K3265

SLO1
Lower

OK

99 02 03

Physical Tests

Colour	(CU)	<5
Conductivity	(umhos/cm)	423
Total Dissolved Solids		222
Hardness	CaCO3	169
pH		7.42
Turbidity	(NTU)	0.5

Dissolved Anions

Alkalinity-Total	CaCO3	177
Chloride	Cl	14.7
Fluoride	F	0.18
Sulphate	SO4	19

Nutrients

Nitrate Nitrogen	N	0.9
Nitrite Nitrogen	N	<0.1

Total Metals

Aluminum	T-Al	<0.005
Arsenic	T-As	0.0003
Barium	T-Ba	0.059
Boron	T-B	<0.05
Cadmium	T-Cd	<0.0002
Calcium	T-Ca	47.1
Chromium	T-Cr	<0.001
Copper	T-Cu	0.006
Iron	T-Fe	<0.03
Lead	T-Pb	<0.001
Magnesium	T-Mg	12.4
Manganese	T-Mn	<0.001
Mercury	T-Hg	<0.00005
Potassium	T-K	2.44
Selenium	T-Se	<0.001
Sodium	T-Na	17.8
Uranium	T-U	0.0100
Zinc	T-Zn	0.009

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.

Penticton Band
Health Canada

RESULTS OF ANALYSIS - Water

Upper West Hills subd.

File No. K3266

SL02

s.19(1)

99 02 03

Physical Tests

Colour	(CU)	<5
Conductivity	(umhos/cm)	373
Total Dissolved Solids		199
Hardness	CaCO3	159
pH		7.78
Turbidity	(NTU)	0.8

Dissolved Anions

Alkalinity-Total	CaCO3	183
Chloride	Cl	2.1
Fluoride	F	0.17
Sulphate	SO4	14

Nutrients

Nitrate Nitrogen	N	<0.1
Nitrite Nitrogen	N	<0.1

Total Metals

Aluminum	T-Al	<0.005
Arsenic	T-As	0.0008
Barium	T-Ba	0.113
Boron	T-B	<0.05
Cadmium	T-Cd	<0.0002
Calcium	T-Ca	47.7
Chromium	T-Cr	<0.001
Copper	T-Cu	0.005
Iron	T-Fe	0.03
Lead	T-Pb	<0.001
Magnesium	T-Mg	9.67
Manganese	T-Mn	0.026
Mercury	T-Hg	<0.00005
Potassium	T-K	2.45
Selenium	T-Se	<0.001
Sodium	T-Na	14.0
Uranium	T-U	0.00489
Zinc	T-Zn	0.009

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.

005812



Appendix 1 - REGULATORY CRITERIA

File No. K3503

Part 1 - Canada

Guidelines for Canadian Drinking Water Quality, Sixth Ed., 1996.
All limits are Maximum Acceptable Concentration (MAC) unless otherwise indicated.

Limits expressed as milligrams per litre except pH, Turbidity, Colour, and Coliform Bacteria.

		Lower Limit	Upper Limit	Notes
Physical Tests				
Colour	(CU)	-	15 CU	1
Total Dissolved Solids		-	500 mg/L	1
Hardness	CaCO ₃	-	-	2
pH		6.5	8.5	1
Turbidity	(NTU)	-	5 NTU	3, 4
Dissolved Anions				
Chloride	Cl	-	250 mg/L	1
Fluoride	F	-	1.5 mg/L	
Sulphate	SO ₄	-	500 mg/L	1, 5
Nutrients				
Nitrate Nitrogen	N	-	10.0 mg/L	
Nitrite Nitrogen	N	-	1.0 mg/L	
Trace Metals				
Arsenic	T-As	-	0.025 mg/L	6
Barium	T-Ba	-	1.0 mg/L	
Boron	T-B	-	5.0 mg/L	6
Cadmium	T-Cd	-	0.005 mg/L	
Chromium	T-Cr	-	0.05 mg/L	
Copper	T-Cu	-	1.0 mg/L	1, 3
Iron	T-Fe	-	0.3 mg/L	1
Lead	T-Pb	-	0.01 mg/L	3, 7
Manganese	T-Mn	-	0.05 mg/L	1
Mercury	T-Hg	-	0.001 mg/L	
Selenium	T-Se	-	0.01 mg/L	
Sodium	T-Na	-	200 mg/L	1
Uranium	T-U	-	0.10 mg/L	
Zinc	T-Zn	-	5.0 mg/L	1, 3

- 1 Aesthetic Objective (AO) (taste, odour, appearance, etc.)
 2 Maximum not established, levels > 200 mg/L are considered poor but may be tolerated (AO).
 3 1st point of consumption (AO).
 4 5 NTU maximum allowed for water entering distribution systems.
 5 There may be a laxative effect in some individuals when sulphate levels exceed 500 mg/L.
 6 Interim Maximum Acceptable Concentration (IMAC)
 7 First drawn water may be high. flush system before sampling(MAC)

Page(s) 005814 to\à 005819

Is(are) under consultation

Assessment Study of Water and Wastewater Systems
Penticton First Nation Penticton IR No. 1

Appendix E

WASTEWATER TESTING RESULTS

(CHEMICAL/PHYSICAL/BACTERIOLOGICAL)
WITH COMPARISONS TO THE
*GUIDELINES FOR EFFLUENT QUALITY AND WASTEWATER TREATMENT AT
FEDERAL ESTABLISHMENTS*

Nil