

**Assessment Study of
Water and Wastewater Systems
and Associated Water Management Practices
at the Nadleh Whut'en First Nation Community**

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



December, 2001

Appendix C
Water Quality Test Results



ANALYTICAL SERVICES

1-May-01
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ANALYTICAL REPORT Form 08055162

Client : HEALTH CANADA
Sampling site :
Submitted by : PAUL BRODA

Philip ID : 11024448
Client ID : NADLEH WEL
L (BAND O)

Sparcode	Parameter	Unit	MDL	CDWG
PHYSICAL				
00041220	pH	pH units	0.1	
00021300	Color True	Col.Unit	5	6.5-8.5 8.2
00111160	Specific Conductance	uS/cm	1	15 < 5
SCCACALC	Computed Conductance	uS/cm		385
CCPDCALC	Conductance % Diff.	%		415
007H1035	Residue Filterable 1.0u (TDS)	mg/L		7.6
CTDSCALC	Computed TDS	mg/L	10	500 224
RCALC	TDS % Diff.	%		214
00151140	Turbidity	NTU		4.7
0107CALC	Hardness Total -T	mg/L	0.10	1.0 0.19
				500 176
GENERAL INORGANICS				
01011211	Alkalinity Phen. 8.3 as CaCO3	mg/L	1	
01021210	Alkalinity Total as CaCO3	mg/L		< 1
CO3-CALC	Carbonate as CO3=	mg/L	1	213
HCO3CALC	Bicarbonate as HCO3-	mg/L		< 0.5
OH--CALC	Hydroxide as OH-	mg/L		260 < 0.5
ANIONS				
11041334	Chloride Dissolved	mg/L		
11061341	Fluoride Dissolved	mg/L	1.0	< 250 < 1.0
IonBCALC	Ion Balance	%	0.10	1.5 0.19
AnnsCALC	Total Anions	meq/L		2.0
CtnsCALC	Total Cations	meq/L		4.34
LangCALC	Langelier Index	pH units		4.51
pHSACALC	Saturation pH	pH units		0.7 7.5
NITROGEN				
1110CALC	Nitrate Nitrogen Dissolved (N)	mg/L		
11091350	Nitrate + Nitrite (N)	mg/L		10.0 < 0.02
11111354	Nitrite Nitrogen (N)	mg/L	0.02	10.0 < 0.02
			0.005	1.0 < 0.005

Matrix : Water
Sampled on: 01/05/04 16:00

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RESULTS OF ANALYSIS

File No. 8756C

		(Burns Lake Village)	
<i>Old Well</i>	Stallaq.	Woyenna	Falling
Nautlay	Well	Well	Well
Well			
93 02 16	93 02 16	93 02 16	93 02 16

Physical Tests

Colour	CU	<5.0	<5.0	<5.0	<5.0
Conductivity	umhos/cm	310	202	375	528
Total Dissolved Solids		199	131	220	341
Hardness	CaCO3	158	96.2	175	53.7
pH		6.78	7.39	7.34	6.01
Total Solids		209	154	231	350
Turbidity	NTU	0.40	0.10	0.30	0.60

Dissolved Anions

Alkalinity - Total	CaCO3	148	100	187	226
Chloride	Cl	0.7	<0.5	1.0	7.9
Fluoride	F	0.15	0.28	0.76	0.44
Sulphate	SO4	20.3	8.6	4.7	33.4

Nutrients

Ammonia Nitrogen	N	0.063	0.101	<0.005	0.290
Nitrate Nitrogen	N	<0.005	<0.005	0.036	<0.005
Nitrite Nitrogen	N	<0.001	<0.001	<0.001	<0.001
Nitrite/Nitrate Nitrogen	N	<0.005	<0.005	0.039	<0.005

Cyanides

Total Cyanide	CN	<0.001	<0.001	<0.001	<0.001
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Remarks regarding the analyses appear at the beginning of this report.
 Results are expressed as milligrams per litre except where noted.
 < = Less than the detection limit indicated.



RESULTS OF ANALYSIS

File No. 8756C

		Old Well Nautley Well	Stellaq. Well	Burns Lake Village Woyessa Well	Falling Well
		93 02 16	93 02 15	93 02 15	93 02 15
Total Metals					
Aluminum	T-Al	<0.005	<0.005	0.014	<0.005
Antimony	T-Sb	0.0002	<0.0001	<0.0001	<0.0001
Arsenic	T-As	0.0140	0.0150	0.0048	0.0210
Barium	T-Ba	0.033	0.031	0.172	0.054
Boron	T-B	<0.10	<0.10	<0.10	<0.10
Cadmium	T-Cd	<0.0002	<0.0002	<0.0002	<0.0002
Calcium	T-Ca	44.2	30.4	50.6	11.9
Chromium	T-Cr	<0.001	<0.001	<0.001	<0.001
Cobalt	T-Co	<0.001	<0.001	<0.001	<0.001
Copper	T-Cu	0.001	<0.001	0.328	<0.001
Iron	T-Fe	0.100	<0.030	<0.030	<0.030
Lead	T-Pb	<0.001	<0.001	0.001	<0.001
Magnesium	T-Mg	11.4	4.81	11.3	5.82
Manganese	T-Mn	2.12	0.135	0.223	0.025
Mercury	T-Hg	<0.00005	<0.00005	<0.00005	<0.00005
Potassium	T-K	2.5	2.0	2.4	2.3
Selenium	T-Se	<0.0005	<0.0005	<0.0005	<0.0005
Sodium	T-Na	4.13	5.60	7.00	99.0
Uranium	T-U	0.00043	0.00110	0.00040	0.00012
Zinc	T-Zn	0.025	0.012	0.016	0.013
Inorganic Parameters					
Sulphide	S	<0.02	<0.02	<0.02	<0.02
Halogenated Volatiles					
Bromodichloromethane		<0.001	<0.001	<0.001	<0.001
Bromoform		<0.001	<0.001	<0.001	<0.001
Carbon Tetrachloride		<0.001	<0.001	<0.001	<0.001
Chlorobenzene		<0.001	<0.001	<0.001	<0.001
Chloroform		<0.001	<0.001	0.005	<0.001
Dibromochloromethane		<0.001	<0.001	<0.001	<0.001
1,2-Dichlorobenzene		<0.001	<0.001	<0.001	<0.001
1,4-Dichlorobenzene		<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane		<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethylene		<0.001	<0.001	<0.001	<0.001
Tetrachloroethylene		<0.001	<0.001	<0.001	<0.001
Trichloroethylene		<0.001	<0.001	<0.001	<0.001
Trichlorofluoromethane		<0.001	<0.001	<0.001	<0.001
Vinyl Chloride		<0.001	<0.001	<0.001	<0.001

Remarks regarding the analyses appear at the beginning of this report.
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 < = Less than the detection limit indicated.



RESULTS OF ANALYSIS

File No. 8756C

	<i>Old Well</i> Nautley Well	Stellaq. Well	<i>Burns Lake</i> Village Woyenna Well	Palling Well
	93 02 16	93 02 16	93 02 16	93 02 16
<u>Non-halogenated Volatiles</u>				
Benzene	<0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	<0.0005	<0.0005	<0.0005	<0.0005
meta- & para-Xylene	<0.0005	<0.0005	<0.0005	<0.0005
ortho-Xylene	<0.0005	<0.0005	<0.0005	<0.0005
<u>Polyaromatic Hydrocarbons</u>				
Benzo(a)pyrene	<0.00001	<0.00001	<0.00001	<0.00001
<u>Chlorinated Phenols</u>				
2,4-Dichlorophenol	<0.001	<0.001	<0.001	<0.001
2,4,6-Trichlorophenol	<0.001	<0.001	<0.001	<0.001
2,3,4,6-Tetrachlorophenol	<0.001	<0.001	<0.001	<0.001
Pentachlorophenol	<0.001	<0.001	<0.001	<0.001
<u>Organic Parameters</u>				
Total Organic Carbon C	6.10	3.60	6.70	4.00

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< = Less than the detection limit indicated.

Community :: NADLEH

Sampling Year :: 1999

DATE	LOCATION	GB	TC	FC
02/24/99	Health Centre - Bottled Water	3698	0	0
03/11/99	Cdn Springs Bottled Water	3000	0	0
03/11/99	Health Centre - Bottled Water	3000	0	0
03/11/99	Kindergarten - Water Cooler Unit	3000	0	0
03/11/99	Education Centre - Water Cooler Unit	3000	0	0
03/11/99	Band Office - Water Cooler Unit	3000	0	0
03/11/99	Store - Water Cooler Unit	1340	0	0
03/11/99		118	0	0
05/31/99	Pumphose Raw Water	0	0	0
05/31/99		0	0	0
05/31/99		0	0	0
06/24/99	Pumphose Raw Water	0	0	0
06/24/99		0	0	0
06/11/99	Reservoir - Surface Water	606	0	0
06/11/99		0	0	0
06/11/99		16	0	0
06/11/99	Sunset Takeout (Hauled Water)	0	0	0
06/11/99		0	0	0
06/11/99		0	0	0
06/11/99		0	0	0
06/11/99		2	0	0
07/16/99	Health Centre	0	0	0
07/22/99	Techro Bottled - Cooler Unit	3000	0	0
07/22/99	Orman Lake	1849	0	0

s.19(1)

Community :: NADLEH

Sampling Year :: 2000

s.19(1)

DATE	LOCATION	GB	TC	FC
01/12/00		4	0	0
01/12/00		958	0	0
01/12/00		4	0	0
01/12/00	Band Office	2	0	0
04/05/00		0	0	0
04/05/00		42	0	0
04/05/00		8	0	0
04/05/00		0	0	0
04/05/00		0	0	0
05/03/00	Education Centre	0	0	0
06/09/00		42	0	0
06/09/00	Kott School	0	0	0
06/09/00		0	0	0
06/09/00		0	0	0
06/09/00		4	0	0
06/09/00		0	0	0
06/12/00		0	0	0
08/09/00		30	2	0
08/10/00		256	32	0
08/10/00		0	0	0
08/10/00		0	0	0
08/10/00		0	0	0
08/10/00		tntc	3000	14
09/14/00		0	0	0

