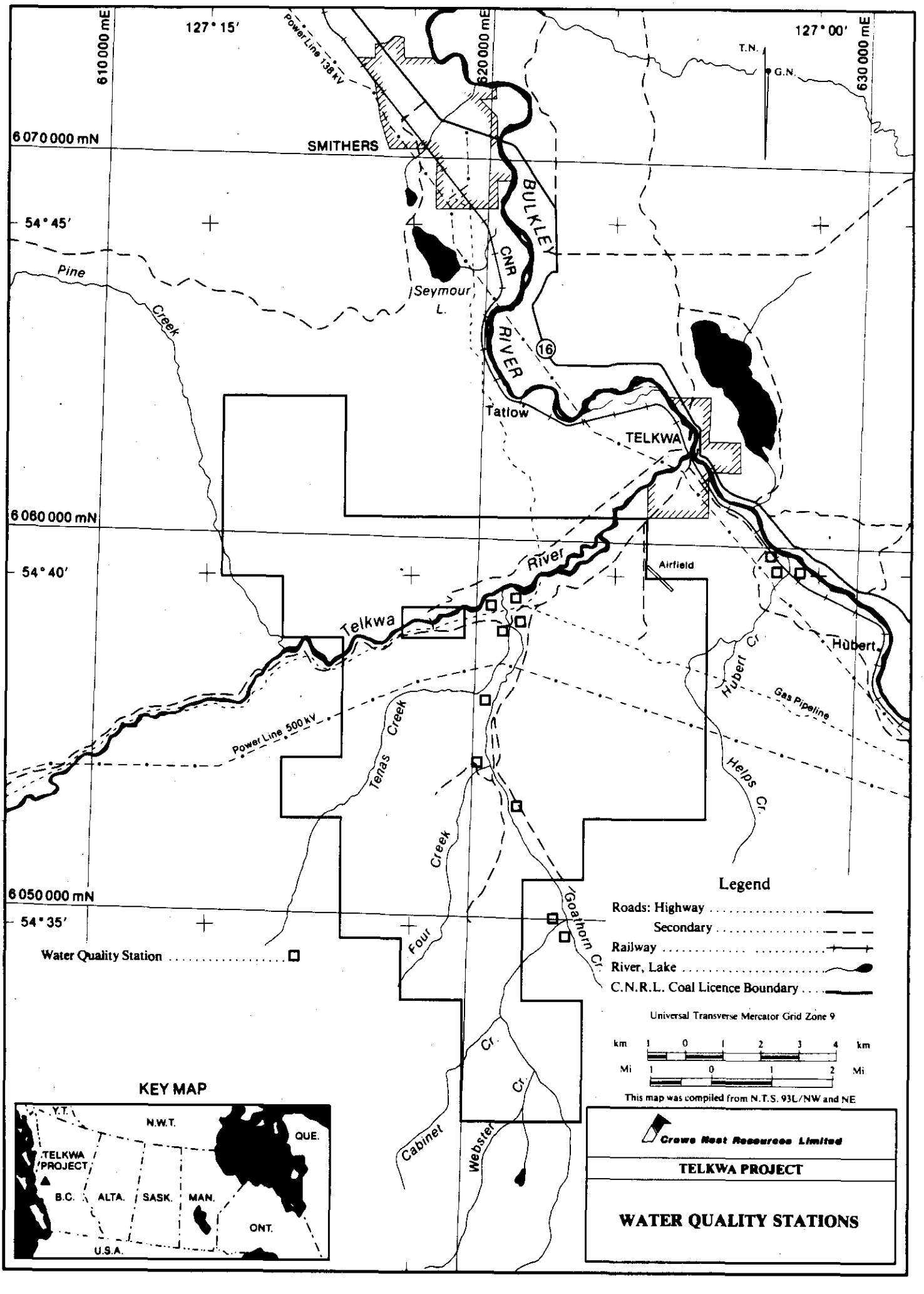
TK-TelKwa 84(4)A
Appendix 9

Water Quality Analytical Data

00240
part 8


127° 15'
127° 00'
610 000 mE
620 000 mE
630 000 mE
T.N.
G.N.
Power Line 138 kV
6 070 000 mN
SMITHERS
54° 45'
BULKLEY
CNR
RIVER
16
Pine
Creek
Seymour L.
Tatlow
TELKWA
6 060 000 mN
54° 40'
River
Airfield
Telkwa
Hubert
Hubert Cr.
Gas Pipeline
Power Line 500 kV
Tenas Creek
Helps Cr.
Creek
6 050 000 mN
54° 35'
Four
Goathorn Cr.
Cr.
Cr.
Cabinet
Webster
Water Quality Station
Legend
Roads: Highway
Secondary
Railway
River, Lake
C.N.R.L. Coal Licence Boundary
Universal Transverse Mercator Grid Zone 9
km 1 0 1 2 3 4 km
Mi 1 0 1 2 Mi
This map was compiled from N.T.S. 93L/NW and NE
KEY MAP
Y.T.
N.W.T.
QUE.
TELKWA PROJECT
B.C.
ALTA.
SASK.
MAN.
ONT.
U.S.A.
Crows Nest Resources Limited
TELKWA PROJECT
WATER QUALITY STATIONS

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1523 WEST 3rd AVENUE. VANCOUVER. B.C. V6J 1J8 • TELEPHONE (604) 734-7276 • TELEX 04-54210

Report On Analysis of water samples

File No. 6309E

Report No.

Reported To Crows Nest Resources

P.O. # CN21934

P.O. Box 2699, Station "A"

Date Jan. 18/85

Calgary, Alberta T2P 2M7

Attention: Mr. M. Ross

We have tested the samples of water submitted by you and report as follows:

DISCUSSION:

Due to the severe weather conditions, samples could not be collected from four of the sampling locations.

SAMPLE IDENTIFICATION:

The samples were submitted in plastic and glass bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: MONTHLY SAMPLING FOR DECEMBER
DATE SUBMITTED: JANUARY 2,1985

CTL#	CLIENT I.D.	DESCRIPTION
6309-1	TH-02	Four Creek
6309-2	TH-03	Tenas Creek
6309-3	TH-04	Goat Horn Lower
6309-4	TH-05	Hubert Creek
6309-5	TH-06	Bulkley Upper
6309-6	TH-07	Bulkley Lower
6309-7	TH-10	Goat Horn Above B.V.C.
6309-8	TH-11	Goat Horn Below B.V.C.

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AND/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the "Annual Book of ASTM Standards", May 1982.

The dissolved oxygen was determined in the field using a Titron Oxygen Meter, Model RD-15.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns. B.Sc
Chemist
Water Analysis Laboratory

DME/jo

Name: Crows Nest Resources
File No: 6309F
Page No: 3

RESULTS OF TESTING:

		1	2	3
SAMPLE #				
CLIENT SAMPLE I.D.		TH-02	TH-03	TH-04
TEMPERATURE C^{O}		0.0	-1.0	-1.0
PHYSICAL TESTS				
pH		8.00	7.90	7.80
Conductivity (micromhos/cm)		168.	162.	145.
Color [Pt-Co Scale] (Co)		50.	10.	5.
Turpidity (NTU)		1.6	0.63	0.55
Hardness (mg/L)	CaCO3	85.	81.	70.
SOLIDS (mg/L)				
Total Suspended		L1.0	L1.0	L1.0
Total Dissolved		145.	142.	122.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	104.	101.	75.1
Alkalinity: Carbonate	CO3	NIL	NIL	NIL
Alkalinity: Hydroxide	OH	NIL	NIL	NIL
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	SO4	L1.0	L1.0	12.0
Nitrates	N	0.036	0.042	0.082
Nitrites	N	L0.002	L0.002	L0.002
Total Dissolved Phosphates	P	0.009	0.009	0.004
Ortho-Phosphates	P	0.004	0.003	0.018
Silica	SiO2	4.17	4.72	3.50
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.12	0.067	0.024
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.051	0.032	0.062
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.50	L0.50	L0.50
Boron	B	0.025	0.033	0.022
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	18.4	24.1	20.6
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.092	0.044	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	9.29	4.92	4.30
Manganese	Mn	L0.003	L0.003	L0.003

CAN TEST LTD.

Name: Crows Nest Resources
File No: 6309F
Page No: 4

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-02	TH-03	TH-04
DISSOLVED METALS (mg/L) (CON'T)				
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.36	0.20	0.34
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	7.92	7.87	5.74
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	5.13	3.71	2.94
Strontium	Sr	0.11	0.12	0.077
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	0.010	0.009	0.008
Vanadium	V	L0.015	L0.015	L0.015
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.28	0.12	0.11
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.051	0.033	0.063
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.50	L0.50	L0.50
Boron	B	0.020	0.032	0.048
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	18.5	24.6	20.7
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	0.003	0.001	0.001
Iron	Fe	0.19	0.070	0.056
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	9.29	5.05	4.29
Manganese	Mn	0.004	0.003	0.004
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	8.23	8.07	5.77
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	5.15	3.93	2.92
Strontium	Sr	0.11	0.12	0.078
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	0.010	0.010	0.020
Vanadium	V	L0.015	L0.015	L0.015
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.020	L0.020	L0.020
Ammonia Nitrogen	N	0.013	0.021	0.027
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	FE	0.11	0.064	L0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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Name: Crows Nest Resources
File No: 6309F
Page No: 5

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-05	TH-06	TH-07
TEMPERATURE C^{o}		-1.0	-1.0	-1.0
PHYSICAL TESTS				
pH		8.10	7.00	7.65
Conductivity (micromhos/cm)		325.	67.2	141.
Color [Pt-Co Scale](Co)		20.	L5.	L5.
Turbidity (NTU)		17.	0.64	4.2
Hardness (mg/L)	CaC03	172.	30.	71.
SOLIDS (mg/L)				
Total Suspended		10.0	L1.0	L1.0
Total Dissolved		298.	58.	124.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	214.	36.9	83.0
Alkalinity: Carbonate	C03	NIL	NIL	NIL
Alkalinity: Hydroxide	OH	NIL	NIL	NIL
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	L1.0	2.9	2.0
Nitrates	N	0.071	0.039	0.071
Nitrites	N	L0.002	L0.002	L0.002
Total Dissolved Phosphates	P	0.017	0.032	0.010
ortho-Phosphates	P	0.004	0.006	0.004
Silica	Si02	9.42	3.28	4.90
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.39	0.019	0.041
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.070	0.021	0.039
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.50	L0.50	L0.50
Boron	B	0.023	0.018	0.035
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	48.3	9.56	21.1
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.19	0.047	0.21
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	12.1	1.40	4.60
Manganese	Mn	0.98	0.008	0.23
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	1.16	0.38	0.66
Selenium	Se	L0.001	L0.001	L0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-05	TH-06	TH-07
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	16.1	4.73	8.26
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	5.18	1.39	2.67
Strontium	Sr	0.19	0.044	0.087
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	0.010	0.008	0.007
Vanadium	V	L0.015	L0.015	L0.015
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.30	0.067	0.067
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.082	0.022	0.041
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.50	L0.50	L0.50
Boron	B	0.042	0.016	0.025
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	48.9	9.87	21.1
Chromium	Cr	0.004	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	0.007	L0.001	L0.001
Iron	Fe	2.94	0.081	0.77
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	12.4	1.44	4.58
Manganese	Mn	1.00	0.007	0.23
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	17.8	4.85	8.19
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	5.41	1.41	2.49
Strontium	Sr	0.19	0.045	0.087
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	0.032	0.008	0.008
Vanadium	V	L0.015	L0.015	L0.015
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.044	L0.020	L0.020
Ammonia Nitrogen	N	0.014	0.011	0.052
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	1.54	0.076	0.60

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

Name: Crows Nest Resources
File No: 6309F
Page No: 7

RESULTS OF TESTING:

SAMPLE #		7	8
CLIENT SAMPLE I.D.		TH-10	TH-11
TEMPERATURE C°		-1.0	-1.0
PHYSICAL TESTS			
pH		7.70	7.80
Conductivity (micromhos/cm)		139.	139.
Color [Pt-Co Scale](Co)		5.	5.
Turbidity (NTU)		1.0	0.45
Hardness (mg/L)	CaC03	70.	69.
SOLIDS (mg/L)			
Total Suspended		L1.0	L1.0
Total Dissolved		119.	119.
DISSOLVED ANIONS (mg/L)			
Alkalinity: Bicarbonate	HC03	69.8	71.2
Alkalinity: Carbonate	C03	NIL	NIL
Alkalinity: Hydroxide	0H	NIL	NIL
Chlorides	Cl	L0.5	L0.5
Sulfates	S04	14.4	14.0
Nitrates	N	0.14	0.14
Nitrites	N	L0.002	L0.002
Total Dissolved Phosphates	P	0.011	0.006
ortho-Phosphates	P	0.002	0.002
Silica	Si02	3.52	3.38
DISSOLVED METALS (mg/L)			
Aluminum	Al	0.027	0.046
Antimony	Sb	L0.001	L0.001
Arsenic	As	L0.001	L0.001
Barium	Ba	0.072	0.064
Beryllium	Be	L0.003	L0.003
Bismuth	Bi	L0.50	L0.50
Boron	B	0.021	0.022
Cadmium	Cd	L0.001	L0.001
Calcium	Ca	21.3	20.7
Chromium	Cr	L0.001	L0.001
Cobalt	Co	L0.005	L0.005
Copper	Cu	L0.001	L0.001
Iron	Fe	L0.030	L0.032
Lead	Pb	L0.001	L0.001
Magnesium	Mg	3.87	4.19
Manganese	Mn	L0.003	0.004
Molybdenum	Mo	L0.005	L0.005
Nickel	Ni	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4
Potassium	K	0.37	0.33
Selenium	Se	L0.001	L0.001

RESULTS OF TESTING: (CON'T)

		7	8
SAMPLE #			
CLIENT SAMPLE I.D.		TH-10	TH-11
DISSOLVED METALS (mg/L) (CON'T)			
Silicon	Si02	5.79	5.52
Silver	Ag	L0.005	L0.005
Sodium	Na	3.01	2.88
Strontium	Sr	0.076	0.077
Tin	Sn	L0.030	L0.030
Titanium	Ti	0.007	0.008
Vanadium	V	L0.015	L0.015
Zinc	Zn	L0.005	L0.005
TOTAL METALS (mg/L)			
Aluminum	Al	0.052	0.068
Antimony	Sb	L0.001	L0.001
Arsenic	As	L0.001	L0.001
Barium	Ba	0.070	0.066
Beryllium	Be	L0.003	L0.003
Bismuth	Bi	L0.50	L0.50
Boron	B	0.023	0.023
Cadmium	Cd	L0.001	L0.001
Calcium	Ca	20.8	20.4
Chromium	Cr	L0.001	L0.001
Cobalt	Co	L0.005	L0.005
Copper	Cu	L0.001	L0.001
Iron	Fe	L0.030	0.053
Lead	Pb	L0.001	L0.001
Magnesium	Mg	3.75	4.13
Manganese	Mn	L0.003	0.005
Mercury	Hg	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005
Nickel	Ni	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4
Selenium	Se	L0.001	L0.001
Silicon	Si02	5.64	5.50
Silver	Ag	L0.005	L0.005
Sodium	Na	2.74	2.90
Strontium	Sr	0.073	0.075
Tin	Sn	L0.030	L0.030
Titanium	Ti	0.009	0.010
Vanadium	V	L0.015	L0.015
Zinc	Zn	L0.005	L0.005
POLLUTANT TESTS (mg/L)			
Total Phosphate	P	L0.020	L0.020
Ammonia Nitrogen	N	L0.01	0.013
Total Phenolics as Phenol		L0.001	L0.001
OTHERS (mg/L)			
Ferrous Iron	Fe	L0.05	L0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

can test ltd.

1523 WEST 3rd AVENUE, VANCOUVER, B.C. V6J 1J8 • TELEPHONE (604) 734-7276 • TELEX 04-54210

Report On Analysis of water samples

File No. 5569F

Report No.

Reported To Crows Nest Resources

P.O. # CN21934

P.O. Box 2699, Station "A"

Date Nov. 6/84

Calgary, Alberta T2P 2M7

Attention: Mr. M. Ross

We have tested the samples of water submitted by you and report as follows:

DISCUSSION:

It should be noted that in some cases the dissolved metals were higher than the total metals. This appears to be due to contamination of the field filtering apparatus. Secondly, the metals sample taken from Bulkley Lower was apparently preserved with phosphoric acid instead of nitric. In view of this, the phosphate numbers that are reported represent the results obtained from analyzing the raw sample.

SAMPLE IDENTIFICATION:

The samples were submitted in plastic and glass bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: MONTHLY SAMPLING FOR OCTOBER
DATE SUBMITTED: OCTOBER 17, 1984

CTL#	CLIENT I.D.	DESCRIPTION
5569-1	TH-01	Cabinet Creek
-2	TH-02	Four Creek
-3	TH-03	Tenas Creek
-4	TH-04	Goat Horn Lower
-5	TH-05	Hubert Creek
-6	TH-06	Bulkley Upper
-7	TH-07	Bulkley Lower
-8	TH-08	Telkwa Upper
-9	TH-09	Telkwa Lower
-10	TH-10	Goat Horn Above B.V.C.
-11	TH-11	Goat Horn Below B.V.C.
-12	TH-12	Goat Horn Upper

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AND/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H2S04
Nutrients	Plastic	H2S04
Phenols	Amber Glass	CuS04, H3P04
Ferrous Iron	Plastic	NH4C2N3O2 o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HN03
Total Metals	Plastic	HN03

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the 'Annual Book of ASTM Standards", May 1982.

The dissolved oxygen was determined in the field using a Titron Oxygen Meter, Model RD-15.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

CAN TEST LTD.

Crows Nest Resources
File No: 5569F

RESULTS OF TESTING:

		1	2	3
SAMPLE #				
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DATE SAMPLED		10/15/84	10/15/84	10/16/84
TEMPERATURE °C		2.0	2.0	0.5
PHYSICAL TESTS				
pH		7.65	8.10	8.00
Conductivity (micromhos/cm)		114.	168.	136.
Color [Pt-Co Scale](Co)		5.	60.	15.
Turbidity (NTU)		0.65	1.2	1.5
Hardness (mg/L)	CaC03	56.	82.	70.
SOLIDS (mg/L)				
Total Suspended		2.0	2.0	2.0
Total Dissolved		90.0	142.	118.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	53.0	103.	84.1
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	1.00	1.50	L 0.5
Sulfates	S04	8.5	L 1.0	L 1.0
Nitrates	N	0.026	L 0.010	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.008	0.009	0.010
ortho-Phosphates	P	0.003	0.005	0.006
Silica	Si02	3.61	4.81	4.62
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.052	0.072	0.030
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.026	0.049	0.030
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.021	0.020	0.020
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	18.7	18.0	21.2
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	0.069	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.25	8.89	4.06
Manganese	Mn	L 0.003	0.006	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4
Potassium	K	0.31	0.37	0.21
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.13	4.49	5.55
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.48	5.13	2.95
Strontium	Sr	0.068	0.11	0.10
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.011	0.009	0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.010	L 0.010	L 0.010
TOTAL METALS (mg/L)				
Aluminum	Al	0.069	0.12	0.093
Antimony	Sb	L 0.001	L 0.001	L 0.001
senic	As	L 0.001	L 0.001	L 0.001
arium	Ba	0.020	0.051	0.031
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.015	0.020	0.018
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	18.6	19.7	21.3
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.003	0.004	L 0.001
Iron	Fe	0.034	0.094	0.071
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.18	9.76	4.08
Manganese	Mn	L 0.003	L 0.003	0.004
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
osphorus	P04	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	4.20	5.07	5.83
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.40	5.41	2.91
Strontium	Sr	0.066	0.18	0.10
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.007	0.009	0.008
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.010	L 0.010	L 0.010
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.040	0.034	0.034
Ammonia Nitrogen	N	0.14	0.024	0.023
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	0.090	L 0.05
Dissolved Oxygen	O2	-	-	-

L = Less than = not detected
mg/L = milligrams per liter (= ppm, parts per million)

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RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DATE SAMPLED		10/16/84	10/15/84	10/15/84
TEMPERATURE °C		1.0	3.0	4.0
PHYSICAL TESTS				
pH		7.80	8.20	7.50
Conductivity (micromhos/cm)		113.	264.	56.3
Color [Pt-Co Scale](Co)		10.	40.	5.
Turbidity (NTU)		1.0	3.0	2.5
Hardness (mg/L)	CaC03	55.	126.	24.
SOLIDS (mg/L)				
Total Suspended		L 0.5	1.5	0.5
Total Dissolved		94.	223.	49.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	54.3	155.	28.5
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	9.5	4.0	4.5
Nitrates	N	L 0.010	L 0.010	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.006	0.016	0.023
ortho-Phosphates	P	L 0.001	0.009	0.005
Silica	Si02	3.42	9.72	2.65
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.024	0.014	0.025
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
arium	Ba	0.058	0.052	0.023
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.014	0.013	0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	16.9	34.4	7.83
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.031	0.37	0.050
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	3.08	9.42	1.01
Manganese	Mn	0.004	0.10	0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	0.49	L 0.4
Potassium	K	0.31	1.81	0.33
Selenium	Se	L 0.001	L 0.001	L 0.001

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RESULTS OF TESTING: (CON'T)

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	3.83	12.8	2.42
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.76	4.41	4.10
Strontium	Sr	0.063	0.14	0.042
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.008	0.007	0.011
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.010	L 0.010	L 0.010
TOTAL METALS (mg/L)				
Aluminum	Al	0.079	0.14	0.35
Antimony	Sb	L 0.001	L 0.001	L 0.001
rsenic	As	L 0.001	0.001	L 0.001
arium	Ba	0.059	0.053	0.023
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.017	L 0.01	0.051
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	17.3	35.4	8.07
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.003	0.001	0.005
Iron	Fe	0.087	0.84	0.29
Lead	Pb	L 0.001	L 0.001	0.001
Magnesium	Mg	3.16	9.82	1.06
Manganese	Mn	0.004	0.10	0.012
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
osphorus	P04	L 0.4	1.28	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	3.98	13.6	3.91
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.78	4.24	0.99
Strontium	Sr	0.062	0.14	0.037
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.011	0.008	0.019
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.010	L 0.010	L 0.010
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.040	0.060	0.040
Ammonia Nitrogen	N	0.022	0.045	0.017
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	0.78	0.064
Dissolved Oxygen	O2	-	-	-

L = Less than = not detected
mg/L = milligrams per liter (= ppm, parts per million)

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RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DATE SAMPLED		10/15/84	10/15/84	10/15/84
TEMPERATURE °C		4.0	-	2.5
PHYSICAL TESTS				
pH		7.50	7.55	7.50
Conductivity (micromhos/cm)		63.8	76.0	77.8
Color [Pt-Co Scale](Co)		5.	10.	10.
Turbidity (NTU)		2.6	2.0	2.3
Hardness (mg/L)	CaCO3	30.	37.	36.
SOLIDS (mg/L)				
Total Suspended		3.0	1.0	1.0
Total Dissolved		55.	63.	62.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	34.9	41.4	41.4
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	SO4	4.5	1.5	1.0
Nitrates	N	L 0.010	L 0.010	0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.030	0.032	0.029
ortho-Phosphates	P	0.005	0.009	0.007
Silica	SiO2	3.11	4.62	4.20
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.043	0.063	0.032
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
arium	Ba	0.022	0.030	0.029
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.01	L 0.01	0.011
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	9.48	11.7	11.5
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.076	0.10	0.084
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.42	1.79	1.76
Manganese	Mn	0.014	0.011	0.010
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.4*	L 0.4	L 0.4
Potassium	K	0.35	0.28	0.29
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	SiO2	2.95	4.41	3.86
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.36	1.40	1.29
Strontium	Sr	0.041	0.059	0.054
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	0.007
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.010	L 0.010	L 0.010
TOTAL METALS (mg/L)				
Aluminum	Al	0.35	0.14	0.16
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	0.001	L 0.001	L 0.001
Barium	Ba	0.023	0.030	0.032
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.025	L 0.01	L 0.01
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	9.29	11.2	11.3
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.005	L 0.001	L 0.001
Iron	Fe	0.39	0.21	0.19
Lead	Pb	0.004	L 0.001	L 0.001
Magnesium	Mg	1.44	1.71	1.76
Manganese	Mn	0.025	0.018	0.016
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4*	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	SiO2	4.07	4.41	4.25
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.14	1.31	1.28
Strontium	Sr	0.038	0.056	0.055
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.019	0.009	0.011
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	0.028	L 0.010	L 0.010
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.054	0.12	0.048
Ammonia Nitrogen	N	0.023	0.016	0.011
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.14	0.15	0.13
Dissolved Oxygen	O2	-	-	-

L = Less than = not detected
mg/L = milligrams per liter (= ppm, parts per million)
* = See Discussion

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RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DATE SAMPLED		10/15/84	10/15/84	10/15/84
TEMPERATURE °C		2.0	2.0	2.0
PHYSICAL TESTS				
pH		7.70	7.70	7.70
Conductivity (micromhos/cm)		110.	110.	87.9
Color [Pt-Co Scale](Co)		10.	10.	20.
Turbidity (NTU)		0.74	1.5	0.75
Hardness (mg/L)	CaC03	50.	55.	45.
SOLIDS (mg/L)				
Total Suspended		0.5	L 0.5	L 0.5
Total Dissolved		87.0	90.0	74.0
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	53.0	53.0	47.2
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	1.50	L 0.5
Sulfates	S04	9.5	9.0	4.5
Nitrates	N	L 0.010	0.026	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.025	0.025	0.026
ortho-Phosphates	P	0.008	0.009	0.010
Silica	Si02	3.50	3.69	3.46
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.019	0.030	0.034
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.057	0.11	0.14
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.01	0.017	0.011
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	15.6	16.5	12.6
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	0.082	0.045
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.56	3.32	3.20
Manganese	Mn	L 0.003	0.004	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4
Potassium	K	0.31	0.31	0.24
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	3.32	4.38	4.11
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.76	2.02	1.25
Strontium	Sr	0.053	0.12	0.046
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.006	0.061	0.009
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.010	L 0.010	L 0.010
TOTAL METALS (mg/L)				
Aluminum	Al	0.053	0.087	0.057
Antimony	Sb	L 0.001	L 0.001	L 0.001
·senic	As	L 0.001	L 0.001	L 0.001
ɔarium	Ba	0.057	0.074	0.13
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	0.013	0.012
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	15.5	17.6	11.9
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.002	L 0.001	L 0.001
Iron	Fe	0.042	0.095	0.058
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.58	3.17	3.02
Manganese	Mn	L 0.003	0.005	L 0.003
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
osphorus	P04	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	3.45	4.80	3.82
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.71	1.85	1.22
Strontium	Sr	0.054	0.073	0.040
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.006	0.021	0.009
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.010	L 0.010	L 0.010
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.048	0.048	0.032
Ammonia Nitrogen	N	0.011	0.012	0.012
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	L 0.05	L 0.05
Dissolved Oxygen	O2	-	-	-

L = Less than = not detected
mg/L = milligrams per liter (= ppm, parts per million)

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Report On: Analysis of water samples

File No.: 5398F

Report No.:

Reported To: Crows Nest Resources

P.O. #: CN21934

P.O. Box 2699, Station "A"

Date: Oct. 29/84

Calgary, Alberta T2P 2M7

Attention: Mr. M. Ross

We have tested the samples of water submitted by you and report as follows:

SAMPLE IDENTIFICATION:

The samples were submitted in plastic and glass bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: MONTHLY SAMPLING FOR SEPTEMBER
DATE SUBMITTED: SEPTEMBER 27, 1984

CTL#	CLIENT I.D.	DESCRIPTION	DATE SAMPLED
5398-1	TH-01	Cabinet Creek	09/21/84
-2	TH-02	Four Creek	09/20/84
-3	TH-03	Tenas Creek	09/21/84
-4	TH-04	Goat Horn Lower	09/21/84
-5	TH-05	Hubert Creek	09/20/84
-6	TH-06	Bulkley Upper	09/20/84
-7	TH-07	Bulkley Lower	09/20/84
-8	TH-08	Telkwa Upper	09/21/84
-9	TH-09	Telkwa Lower	09/21/84
-10	TH-10	Goat Horn Above B.V.C.	09/20/84
-11	TH-11	Goat Horn Below B.V.C.	09/20/84
-12	TH-12	Goat Horn Upper	09/21/84
-12	255	Ground Water	09/25/84
-14	257	Ground Water	09/25/84
-15	258-2	Ground Water	09/25/84

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AND/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the 'Annual Book of ASTM Standards", May 1982.

The dissolved oxygen was determined in the field using a Titron Oxygen Meter, Model RD-15.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

RESULTS OF TESTING:

SAMPLE #		5398-1	5398-2	5398-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
TEMPERATURE °C		4.0	5.5	-
PHYSICAL TESTS				
pH		7.50	8.30	8.00
Conductivity (micromhos/cm)		105.	245.	133.
Color [Pt-Co Scale](Co)		5.	30.	5.
Turbidity (NTU)		0.36	1.1	0.71
Hardness (mg/L)	CaCO3	46.	113.	62.
SOLIDS (mg/L)				
Total Suspended		L 0.5	1.0	L 0.5
Total Dissolved		77.	215.	119.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	40.1	155.	82.1
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	NIl	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	SO4	13.0	7.5	1.5
Nitrates	N	L 0.01	L 0.01	L 0.01
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	L 0.001	L 0.001	L 0.001
ortho-Phosphates	P	L 0.001	L 0.001	L 0.001
Silica	SiO2	3.55	3.98	4.18
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.008	0.081	0.046
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.016	0.066	0.026
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	1 0.5	L 0.50
Boron	B	L 0.010	0.10	0.036
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	15.3	24.8	18.8
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	L 0.030	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.74	12.2	3.49
Manganese	Mn	L 0.003	L 0.003	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.4	L 0.4	L 0.4
Potassium	K	0.31	0.55	0.20
Selenium	Se	L 0.001	L 0.001	L 0.001

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RESULTS OF TESTING: (CON'T)

SAMPLE #		5398-1	5398-2	5398-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	SiO_2	4.27	5.12	5.55
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.21	7.96	2.84
Strontium	Sr	0.056	0.15	0.093
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.007	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.037	0.16	0.062
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.019	0.069	0.027
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.015	0.12	0.039
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	15.6	26.0	19.9
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.001	0.002	0.001
Iron	Fe	L 0.030	0.069	0.032
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.78	13.1	3.76
Manganese	Mn	L 0.003	L 0.003	L 0.003
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO_4	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	SiO_2	4.35	5.56	6.01
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.27	8.28	3.03
Strontium	Sr	0.059	0.16	0.099
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.010	0.007	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.02	L 0.02	L 0.02
Ammonia Nitrogen	N	0.017	0.019	0.017
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	0.068	L 0.05
Dissolved Oxygen	O_2	10.6	8.9	-

L = Less than = not detected
mg/L = milligrams per liter (= ppm, parts per million)

RESULTS OF TESTING:

SAMPLE #		5398-4	5398-5	5398-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
TEMPERATURE °C		6.5	7.5	8.5
PHYSICAL TESTS				
pH		7.75	8.30	7.20
Conductivity (micromhos/cm)		119.	259.	55.6
Color [Pt-Co Scale](Co)		5.	40.	5.
Turbidity (NTU)		0.50	3.7	1.9
Hardness (mg/L)	CaC03	48.	126.	25.
SOLIDS (mg/L)				
Total Suspended		1.0	7.5	6.0
Total Dissolved		85.	230.	49.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	49.1	165.	32.2
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	10.6	L 1.0	2.7
Nitrates	N	L 0.01	L 0.01	L 0.01
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	L 0.001	0.030	0.018
ortho-Phosphates	P	L 0.001	0.023	0.016
Silica	Si02	3.05	9.48	2.30
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.013	0.025	0.086
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.046	0.070	0.020
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.030	L 0.010	0.037
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	14.9	35.2	8.29
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	0.75	0.060
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.58	9.65	1.06
Manganese	Mn	L 0.003	0.17	0.018
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4
Potassium	K	0.33	1.13	0.34
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		5398-4	5398-5	5398-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.08	13.2	3.02
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.69	3.94	1.02
Strontium	Sr	0.054	0.15	0.035
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	1 0.006	L 0.006	0.007
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.053	0.15	0.14
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.048	0.078	0.022
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.033	0.026	0.041
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	15.4	37.3	9.14
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.001	0.001	L 0.001
Iron	Fe	L 0.030	2.12	0.14
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.67	9.82	1.32
Manganese	Mn	L 0.003	0.18	0.027
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	4.34	13.7	3.46
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.75	4.17	1.05
Strontium	Sr	0.056	0.16	0.037
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	0.007
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.02	0.035	0.021
Ammonia Nitrogen	N	0.011	0.047	0.012
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	2.11	0.13
Dissolved Oxygen	O2	9.4	10.6	11.6

L = Less than = not detected
mg/L = milligrams per liter (= ppm, parts per million)

RESULTS OF TESTING:

SAMPLE #		5398-7	5398-8	5398-9
CLIENT SAMPLE I.D.		TH-107	TH-01	TH-09
TEMPERATURE °C		8.5	6.0	6.0
PHYSICAL TESTS				
pH		7.50	7.60	7.40
Conductivity (micromhos/cm)		62.0	74.6	78.9
Color [Pt-Co Scale](Co)		5.	5.	5.
Turbidity (NTU)		1.0	0.90	0.90
Hardness (mg/L)	CaC03	28.	34.	35.
SOLIDS (mg/L)				
Total Suspended		3.0	2.0	3.0
Total Dissolved		52.	64.	65.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	34.0	42.0	42.0
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	2.4	2.9	3.3
Nitrates	N	L 0.01	L 0.01	L 0.01
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.002	L 0.001	L 0.001
ortho-Phosphates	P	0.002	L 0.001	L 0.001
Silica	Si02	2.40	3.17	3.22
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.014	0.074	0.021
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.022	0.033	0.031
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.035	0.021	0.022
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	9.14	10.8	11.2
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.060	0.083	0.076
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.32	1.63	1.70
Manganese	Mn	0.026	0.011	0.010
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4
Potassium	K	0.36	0.30	0.29
Selenium	Se	L 0.001	L 0.001	L 0.001

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RESULTS OF TESTING: (CON'T)

SAMPLE #		5398-7	5398-8	5398-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	SiO2	3.32	4.52	4.48
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.13	1.32	1.34
Strontium	Sr	0.040	0.058	0.058
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.007	L 0.006	0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.082	0.16	0.098
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.024	0.034	0.034
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.041	0.029	0.029
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	9.44	13.0	11.6
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.14	0.51	0.20
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.37	1.73	1.79
Manganese	Mn	0.027	0.13	0.014
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	SiO2	3.68	4.92	4.86
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.18	1.96	1.38
Strontium	Sr	0.042	0.061	0.061
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.008	L 0.006	0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.02	L 0.02	L 0.02
Ammonia Nitrogen	N	0.012	0.016	L 0.01
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.12	0.18	0.16
Dissolved Oxygen	O2	12.1	10.7	9.8

L = Less than = not detected
mg/L = milligrams per liter (= ppm, parts per million)

RESULTS OF TESTING:

SAMPLE #		5398-10	5398-11	5398-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
TEMPERATURE °C		7.0	7.5	5.0
PHYSICAL TESTS				
pH		7.70	7.70	7.80
Conductivity (micromhos/cm)		105.	105.	83.6
Color [Pt-Co Scale](Co)		5.	5.	5.
Turbidity (NTU)		0.43	0.40	0.52
Hardness (mg/L)	CaC03	45.	46.	40.
SOLIDS (mg/L)				
Total Suspended		1.5	1.0	L 0.5
Total Dissolved		79.	85.	69.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	44.6	48.9	49.1
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	10.7	10.0	L 1.0
Nitrates	N	L 0.01	L 0.01	L 0.01
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.003	0.010	0.003
ortho-Phosphates	P	0.003	0.008	L 0.001
Silica	Si02	3.00	3.02	2.72
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.018	0.022	0.014
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.047	0.046	0.13
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.019	0.033	0.027
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	14.2	14.4	11.3
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	1 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	L 0.030	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.18	2.33	2.81
Manganese	Mn	L 0.003	0.003	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.04
Potassium	K	0.31	0.35	0.23
Selenium	Se	L 0.001	L 0.001	L 0.001

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RESULTS OF TESTING: (CON'T)

SAMPLE #		5398-10	5398-11	5398-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.08	4.20	3.80
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.93	1.71	1.12
Strontium	Sr	0.051	0.050	0.037
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.065	0.050	0.028
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.048	0.046	0.14
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.028	0.034	0.031
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	14.5	14.7	11.4
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.001	0.001	L 0.001
Iron	Fe	0.030	L 0.030	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.22	2.38	2.83
Manganese	Mn	L 0.003	0.004	L 0.003
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	4.24	4.28	3.83
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.99	1.74	1.14
Strontium	Sr	0.052	0.051	0.038
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.006	L 0.006	L 0.015
Vanadium	V	L 0.015	L 0.015	L 0.005
Zinc	Zn	L 0.005	L 0.005	
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.02	L 0.02	L 0.02
Ammonia Nitrogen	N	L 0.01	0.012	0.011
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	L 0.05	L 0.05
Dissolved Oxygen	O2	9.6	9.6	10.5

L = Less than = not detected
mg/L = milligrams per liter (= ppm, parts per million)

RESULTS OF TESTING:

SAMPLE #		5398-13	5398-14	5398-15
CLIENT SAMPLE I.D.		255.	257	258-2
TEMPERATURE °C		8.0	7.0	6.5
PHYSICAL TESTS				
pH		8.20	8.55	8.75
Conductivity (micromhos/cm)		1300.	2260	4990.
Color [Pt-Co Scale](Co)		20.	5.	10.
Turbidity (NTU)		27.	145.	63.
Hardness (mg/L)	CaCO3	55.	25.	53.
SOLIDS (mg/L)				
Total Suspended		57.	217.	92.
Total Dissolved		801.	1875.	4500.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	198.	1380.	3060.
Alkalinity: Carbonate	CO3	Nil	25.4	140.
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	298.	6.30	238.
Sulfates	SO4	13.0	1.6	28.5
Nitrates	N	L 0.01	L 0.01	L 0.01
Nitrites	N	0.011	0.010	L 0.002
Total Dissolved Phosphates	P	0.071	0.26	0.12
ortho-Phosphates	P	0.039	0.051	0.031
Silica	SiO2	5.30	5.30	3.57
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.12	0.28	0.11
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.030	0.12	0.70
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5
Boron	B	0.068	0.21	0.21
Cadmium	Cd	0.001	L 0.001	L 0.001
Calcium	Ca	17.6	7.14	12.7
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.006	0.046	0.005
Iron	Fe	0.14	0.063	0.054
Lead	Pb	0.011	0.014	0.010
Magnesium	Mg	2.53	1.79	5.08
Manganese	Mn	0.024	0.45	0.39
Molybdenum	Mo	0.011	0.012	0.018
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.4	0.66	0.49
Potassium	K	3.24	3.80	5.76
Selenium	Se	L 0.001	L 0.001	L 0.001

CAN TEST LTD.

RESULTS OF TESTING: (CON'T)

SAMPLE #		5398-13	5398-14	5398-15
CLIENT SAMPLE I.D.		255	257	258-2
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.62	7.45	6.66
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	247.	465.	1140.
Strontium	Sr	0.11	0.23	1.57
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010
Zinc	Zn	0.16	0.067	0.014
TOTAL METALS (mg/L)				
Aluminum	Al	0.88	11.9	7.25
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	0.002	0.002	0.002
Barium	Ba	0.041	0.17	0.81
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5
Boron	B	0.077	0.25	0.24
Cadmium	Cd	0.010	L 0.001	L 0.001
Calcium	Ca	18.3	7.54	13.4
Chromium	Cr	0.003	0.021	0.011
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.24	0.12	0.12
Iron	Fe	1.77	3.47	2.89
Lead	Pb	0.030	0.014	0.022
Magnesium	Mg	2.76	2.91	6.05
Manganese	Mn	0.061	0.69	0.45
Mercury	Hg	0.00060	0.00006	0.00006
Molybdenum	Mo	0.036	0.013	0.023
Nickel	Ni	L 0.005	0.013	0.008
Phosphorus	P04	0.91	0.88	0.86
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	6.66	43.4	28.4
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	252.	474.	1180.
Strontium	Sr	0.11	0.26	1.68
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.009	0.39	0.27
Vanadium	V	L 0.010	0.023	0.014
Zinc	Zn	1.08	0.18	0.12
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.16	0.28	0.25
Ammonia Nitrogen	N	1.00	0.28	1.15
Total Phenolics as Phenol		0.015	0.002	0.002
OTHERS (mg/L)				
Ferrous Iron	Fe	1.39	0.30	0.60
Dissolved Oxygen	O2	-	-	-

L = Less than = not detected
mg/L = milligrams per liter (= ppm, parts per million)

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Report On Analysis of water samples

File No. 5321F

Report No.

Reported To Crows Nest Resources

P.O. # CN21934

P.O. Box 2699, Station "A"

Date Oct.10/84

Calgary, Alberta T2P 2M7

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you and report as follows:

SAMPLE IDENTIFICATION:

The samples were submitted in plastic bottles and identified as follows:

PROJECT NAME:	TELKWA
DATE SAMPLED:	SEPTEMBER 12-16, 1984
DATE SUBMITTED:	SEPTEMBER 20, 1984

With further identification in the "Results of Testing".

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AN/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

METHOD OF TESTING: (CON'T)

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the 'Annual Book of ASTM Standards", May 1982.

The dissolved oxygen was determined in the field using a Titron Oxygen Meter, Model RD-15.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

CAN TEST LTD.

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RESULTS OF TESTING:

SAMPLE #		5321-1	5321-2	5321-3	5321-4
CLIENT SAMPLE I.D.		1. L. Hart	2. Cosman	3. Mortenson	4. L.Langhaug
TEMPERATURE °C		-	-	-	-
SAMPLE DATE		09/12/84	09/12/84	09/13/84	09/13/84
PHYSICAL TESTS					
pH		6.90	7.00	6.85	7.85
Conductivity (micromhos/cm)		116.	149.	227.	484.
Color [Pt-Co Scale](Co)		L 5.	5.	L 5.	15.
Turbidity (NTU)		7.0	6.7	4.0	9.9
Hardness (mg/L)	CaCO3	48.	59.	117.	240.
SOLIDS (mg/L)					
Total Suspended		9.5	9.0	4.0	1.0
Total Dissolved		106.	148.	204.	447.
ISSOLVED ANIONS (mg/L)					
Alkalinity: Bicarbonate	HCO3	68.0	103.	137.	293.
Alkalinity: Carbonate	CO3	Nil	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil	Nil
Chlorides	Cl	1.3	L 0.5	L 0.5	2.2
Sulfates	SO4	2.3	1.3	12.5	37.1
Nitrates	N	1.15	L 0.01	L 0.01	L 0.01
Nitrites	N	0.003	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.015	0.024	0.001	L 0.001
ortho-Phosphates	P	0.013	0.021	L 0.001	L 0.001
Silica	SiO2	4.62	5.92	4.20	5.41
DISSOLVED METALS (mg/L)					
Aluminum	Al	0.054	0.12	0.018	0.029
Antimony	Sb	0.003	0.002	L 0.001	L 0.001
Arsenic	As	L 0.001	0.001	L 0.001	L 0.001
Barium	Ba	0.031	0.061	0.10	0.10
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.043	0.027	0.019	0.036
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	14.9	18.4	33.1	63.4
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.001	L 0.005	L 0.005	L 0.005
Copper	Cu	0.001	L 0.001	L 0.001	L 0.001
Iron	Fe	0.16	0.69	0.057	0.79
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.60	3.10	8.12	19.4
Manganese	Mn	0.032	1.56	0.005	0.29
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.001
Phosphorus	PO4	L 0.4	L 0.4	L 0.4	L 0.4
Potassium	K	0.42	1.05	0.32	1.38
Selenium	Se	L 0.001	L 0.001	L 0.001	L 0.001

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RESULTS OF TESTING: (CON'T)

SAMPLE #		5321-1	5321-2	5321-3	5321-4
CLIENT SAMPLE I.D.		L. Hart	Cosman	Mortenson	L.Langhaug
DISSOLVED METALS (mg/L) (CON'T)					
Silicon	Si02	7.79	10.3	7.59	11.9
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	1.66	1.87	3.97	18.1
Strontium	Sr	0.065	0.084	0.12	0.34
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	4.77	9.57	0.032	0.015
TOTAL METALS (mg/L)					
Aluminum	Al	0.79	0.26	0.11	0.058
Antimony	Sb	0.003	0.002	L 0.001	L 0.001
Arsenic	As	L 0.001	0.002	L 0.001	L 0.001
Barium	Ba	0.039	0.065	0.10	0.10
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.046	0.044	0.055	0.14
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	15.3	18.7	33.7	63.9
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.011	0.018	0.015	0.018
Iron	Fe	1.57	2.99	1.08	1.00
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.38	3.12	8.12	19.5
Manganese	Mn	0.058	1.58	0.013	0.29
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001	L 0.001
Silicon	Si02	10.7	11.1	7.71	12.0
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	1.72	1.88	4.01	18.1
Strontium	Sr	0.067	0.085	0.12	0.34
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.024	0.007	L 0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	5.00	10.5	0.061	0.047
POLLUTANT TESTS (mg/L)					
Total Phosphate	P	L 0.02	L 0.02	L 0.02	L 0.02
Ammonia Nitrogen	N	0.037	0.073	0.027	0.034
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001	L 0.001
OTHERS (mg/L)					
Ferrous Iron	Fe	0.54	1.13	0.31	1.24
Dissolved Oxygen	02	-	-	-	12.0

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

CAN TEST LTD.

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RESULTS OF TESTING:

SAMPLE #		5321-5	5321-6	5321-7	5321-8
CLIENT SAMPLE I.D.		5. Bragg	6. Metzler	Test Pit Seepage	8. Silveira
TEMPERATURE °C		-	7.0	10.5	8.0
SAMPLE DATE		09/12/84	09/13/84	09/14/84	09/13/84
PHYSICAL TESTS					
pH		7.20	7.35	8.55	8.05
Conductivity (micromhos/cm)		281.	452.	724.	463.
Color [Pt-Co Scale](Co)		L 5.	L 5.	L 5.	15.
Turbidity (NTU)		1.2	0.60	4.8	1.6
Hardness (mg/L)	CaCO3	135.	237.	157.	220.
SOLIDS (mg/L)					
Total Suspended		L 0.5	0.8	20.	L 0.5
Total Dissolved		252.	415.	691.	414.
DISSOLVED ANIONS (mg/L)					
Alkalinity: Bicarbonate	HCO3	162.	278.	460.	271.
Alkalinity: Carbonate	CO3	Nil	Nil	18.4	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil	Nil
Chlorides	Cl	14.1	20.5	0.55	1.86
Sulfates	SO4	5.90	4.9	33.9	32.7
Nitrates	N	1.55	3.63	L 0.01	L 0.01
Nitrites	N	L 0.002	L 0.002	0.018	L 0.002
Total Dissolved Phosphates	P	L 0.001	0.006	0.035	0.013
ortho-Phosphates	P	L 0.001	0.002	0.028	0.012
Silica	SiO2	5.28	7.08	5.68	7.10
DISSOLVED METALS (mg/L)					
Aluminum	Al	0.061	0.021	0.11	0.021
Antimony	Sb	L 0.001	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	0.001	L 0.001
Barium	Ba	0.11	0.22	0.21	0.092
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.030	0.023	0.15	0.030
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	37.4	73.5	34.6	64.7
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.008	0.10	L 0.001	0.006
Iron	Fe	L 0.030	L 0.030	L 0.030	0.66
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	9.98	12.6	16.9	13.9
Manganese	Mn	L 0.003	L 0.003	0.15	0.34
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.4	L 0.4	L 0.4	L 0.4
Potassium	K	1.79	1.38	4.95	0.98
Selenium	Se	L 0.001	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		5321-5	5321-6	5321-7	5321-8
CLIENT SAMPLE I.D.		Bragg	Metzler	Test Pit Seepage	Silveira
DISSOLVED METALS (mg/L) (CON'T)					
Silicon	Si02	8.87	12.0	8.99	12.4
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	10.1	8.28	111.	12.4
Strontium	Sr	0.22	0.28	0.88	0.34
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	0.26	0.013	L 0.010	0.35
TOTAL METALS (mg/L)					
Aluminum	Al	0.12	0.099	1.11	0.098
Antimony	Sb	L 0.001	L 0.001	L 0.0012	L 0.001
Arsenic	As	L 0.001	L 0.001	0.002	L 0.001
Barium	Ba	0.11	0.23	0.22	0.093
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.047	0.045	0.20	0.046
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	37.4	75.1	34.6	65.5
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.010	0.11	0.003	0.006
Iron	Fe	0.038	L 0.030	0.75	1.02
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	10.2	12.6	17.1	14.0
Manganese	Mn	0.004	L 0.003	0.19	0.34
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	0.001	L 0.001
Silicon	Si02	8.92	8.92	13.3	12.4
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	10.3	10.3	116.	12.5
Strontium	Sr	0.22	0.22	0.89	0.35
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	0.049	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	0.26	0.016	L 0.010	0.40
POLLUTANT TESTS (mg/L)					
Total Phosphate	P	L 0.02	L 0.02	0.090	L 0.02
Ammonia Nitrogen	N	L 0.01	L 0.01	0.40	0.050
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001	L 0.001
OTHERS (mg/L)					
Ferrous Iron	Fe	L 0.05	L 0.05	0.73	0.90
Dissolved Oxygen	O2	-	11.1	-	8.7

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

CAN TEST LTD.

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RESULTS OF TESTING:

		5321-9	5321-10	5321-11	5321-12
SAMPLE #		9.Rhodes	10.Visser	11.Dutov	12.Hoover
CLIENT SAMPLE I.D.		10.5	10.5	9.0	8.5
TEMPERATURE °C		09/14/84	09/14/84	09/14/84	09/14/84
SAMPLE DATE					
PHYSICAL TESTS					
pH		7.95	7.15	7.95	8.20
Conductivity (micromhos/cm)		444.	119.	331.	281.
Color [Pt-Co Scale](Co)		L 5.	L 5.	L 5.	L 5.
Turbidity (NTU)		1.5	1.0	1.2	1.8
Hardness (mg/L)	CaCO3	237.	56.	170.	147.
SOLIDS (mg/L)					
Total Suspended		1.5	L 0.5	0.8	2.5
Total Dissolved		437.	108.	297.	261.
DISSOLVED ANIONS (mg/L)					
Alkalinity: Bicarbonate	HCO3	318.	73.1	189.	179.
Alkalinity: Carbonate	CO3	Nil	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil	Nil
Chlorides	Cl	5.4	L 0.5	21.5	7.8
Sulfates	SO4	3.1	3.8	3.9	3.2
Nitrates	N	L 0.01	0.015	1.66	0.82
Nitrites	N	L 0.002	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	L 0.001	L 0.001	0.003	0.002
ortho-Phosphates	P	L 0.001	L 0.001	L 0.001	L 0.001
Silica	SiO2	7.20	5.38	6.12	6.72
DISSOLVED METALS (mg/L)					
Aluminum	Al	0.10	0.020	0.012	0.026
Antimony	Sb	L 0.001	L 0.001	L 0.001	L 0.001
Arsenic	As	0.001	L 0.001	L 0.001	L 0.001
Barium	Ba	0.31	0.032	0.063	0.053
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.026	0.025	0.042	0.025
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	75.9	17.0	55.7	47.9
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.11	0.076	L 0.001	L 0.001
Iron	Fe	L 0.030	L 0.030	L 0.030	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	11.3	3.28	7.21	6.41
Manganese	Mn	0.59	L 0.003	0.005	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.4	L 0.4	L 0.4	L 0.4
Potassium	K	1.18	0.43	0.74	0.59
Selenium	Se	L 0.001	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		5321-9	5321-10	5321-11	5321-12
CLIENT SAMPLE I.D.		Rhodes	Visser	Dutov	Hoover
DISSOLVED METALS (mg/L) (CON'T)					
Silicon	Si02	14.0	7.97	11.8	11.4
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	6.01	2.08	3.08	3.06
Strontium	Sr	0.29	0.070	0.16	0.14
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	1.17	0.31	0.028	0.054
TOTAL METALS (mg/L)					
Aluminum	Al	0.15	0.12	0.080	0.12
Antimony	Sb	L 0.001	L 0.001	L 0.001	L 0.001
Arsenic	As	0.001	L 0.001	L 0.001	L 0.001
Barium	Ba	0.31	0.033	0.064	0.054
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.058	0.041	0.053	0.064
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	77.3	17.4	56.3	48.7
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.13	0.081	0.006	0.006
Iron	Fe	0.22	0.037	0.097	0.081
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	11.4	3.37	7.23	6.49
Manganese	Mn	0.60	0.004	0.009	L 0.003
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	0.002	0.002
Silicon	Si02	14.7	8.13	11.8	11.5
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	6.06	2.18	3.12	3.06
Strontium	Sr	0.30	0.073	0.16	0.14
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	0.007	L 0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	1.23	0.32	0.028	0.059
POLLUTANT TESTS (mg/L)					
Total Phosphate	P	L 0.02	L 0.02	L 0.02	L 0.02
Ammonia Nitrogen	N	0.038	0.012	L 0.01	L 0.01
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001	L 0.001
OTHERS (mg/L)					
Ferrous Iron	Fe	0.16	L 0.05	0.077	0.079
Dissolved Oxygen	O2	-	-	-	-

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		5321-13	5321-14	5321-15	5321-16
CLIENT SAMPLE I.D.		13.Van Der Horst	14. Laird	15. Paine	16. Beamer
TEMPERATURE °C		8.5	8.5	6.7	-
SAMPLE DATE		09/15/84	09/14/84	09/13/84	09/13/84
PHYSICAL TESTS					
pH		7.00	8.05	8.05	7.70
Conductivity (micromhos/cm)		91.0	254.	308.	264.
Color [Pt-Co Scale](Co)		L 5.	L 5.	L 5.	L 5.
Turbidity (NTU)		4.81	1.8	1.5	33.
Hardness (mg/L)	CaC03	44.	133.	160.	137.
SOLIDS (mg/L)					
Total Suspended		0.8	L 0.5	L 0.5	9.0
Total Dissolved		87.0	240.	297.	251.
DISSOLVED ANIONS (mg/L)					
Alkalinity: Bicarbonate	HC03	58.8	174.	209.	177.
Alkalinity: Carbonate	C03	Nil	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil	Nil
Chlorides	Cl	L 0.5	0.68	0.85	0.95
Sulfates	S04	3.0	2.3	9.1	5.5
Nitrates	N	L 0.01	0.14	0.63	L 0.01
Nitrites	N	L 0.002	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.030	0.004	L 0.001	0.015
ortho-Phosphates	P	0.009	L 0.001	L 0.001	L 0.001
Silica	Si02	4.38	6.20	6.50	1.90
DISSOLVED METALS (mg/L)					
Aluminum	Al	0.061	0.12	0.008	0.029
Antimony	Sb	L 0.001	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001	L 0.001
Barium	Ba	0.027	0.038	0.058	0.062
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.025	0.024	0.022	0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	13.6	44.2	52.5	39.0
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.061	L 0.001	L 0.001	L 0.001
Iron	Fe	0.38	L 0.030	0.032	5.31
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.31	5.19	6.88	9.30
Manganese	Mn	0.12	L 0.003	0.008	0.98
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4	L 0.4
Potassium	K	0.29	0.54	1.46	1.54
Selenium	Se	L 0.001	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		5321-13	4321-14	5321-15	5321-16
CLIENT SAMPLE I.D.		Van Der Horst	Laird	Paine	Beamer
DISSOLVED METALS (mg/L) (CON'T)					
Silicon	Si02	7.23	10.4	11.3	3.22
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	1.68	2.86	4.30	6.56
Strontium	Sr	0.057	0.12	0.15	0.11
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	0.12	0.016	0.037	0.018
TOTAL METALS (mg/L)					
Aluminum	Al	0.12	0.12	0.078	0.089
Antimony	Sb	L 0.001	L 0.001	L 0.001	0.002
Arsenic	As	L 0.001	L 0.001	L 0.001	L 0.001
Barium	Ba	0.028	0.040	0.059	0.067
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.050	0.077	0.063	0.040
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	13.7	45.0	53.9	39.0
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.072	0.002	0.005	0.002
Iron	Fe	1.00	L 0.030	0.12	9.13
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.31	5.30	7.02	9.43
Manganese	Mn	0.13	L 0.003	0.009	0.99
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4	0.45
Selenium	Se	0.002	0.002	0.001	0.002
Silicon	Si02	7.32	10.9	11.4	3.66
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	1.70	3.00	4.32	6.57
Strontium	Sr	0.057	0.12	0.15	0.11
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	0.13	0.026	0.037	0.033
POLLUTANT TESTS (mg/L)					
Total Phosphate	P	0.037	L 0.02	L 0.02	L 0.02
Ammonia Nitrogen	N	L 0.01	L 0.01	0.015	0.071
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001	L 0.001
OTHERS (mg/L)					
Ferrous Iron	Fe	0.98	L 0.05	0.12	5.62
Dissolved Oxygen	02	-	-	-	-

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		5321-17	5321-18	5321-19	5321-20
CLIENT SAMPLE I.D.		17. Cebuliak	18. Campbell	19. Penner	20. Parks
TEMPERATURE °C		-	7.5	-	-
SAMPLE DATE		09/13/84	09/16/84	09/14/84	09/13/84
PHYSICAL TESTS					
pH		7.85	7.65	7.85	7.25
Conductivity (micromhos/cm)		319.	519.	313.	346.
Color (Pt-Co Scale)(Co)		L 5.	L 5.	L 5.	L 5.
Turbidity (NTU)		0.60	0.32	0.47	4.5
Hardness (mg/L)	CaCO3	170.	290.	169.	178.
SOLIDS (mg/L)					
Total Suspended		L 0.5	2.0	1.0	3.0
Total Dissolved		302.	488.	298.	341.
DISSOLVED ANIONS (mg/L)					
Alkalinity: Bicarbonate	HCO3	228.	348.	215.	233.
Alkalinity: Carbonate	CO3	Nil	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil	Nil
Chlorides	Cl	0.90	7.9	0.55	1.0
Sulfates	SO4	3.7	4.8	3.3	11.0
Nitrates	N	0.59	2.39	0.33	0.072
Nitrites	N	L 0.002	L 0.002	0.086	L 0.002
Total Dissolved Phosphates	P	0.006	0.001	0.025	0.022
ortho-Phosphates	P	0.003	0.001	0.018	0.010
Silica	SiO2	5.78	7.80	7.02	7.20
DISSOLVED METALS (mg/L)					
Aluminum	Al	0.018	0.020	0.014	0.018
Antimony	Sb	L 0.001	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001	L 0.001
Barium	Ba	0.063	0.31	0.061	0.038
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.012	0.013	0.017	0.015
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	54.5	95.0	54.8	43.0
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.003	L 0.001	L 0.001	0.039
Iron	Fe	L 0.030	0.056	L 0.030	0.13
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	7.93	12.5	7.51	16.7
Manganese	Mn	L 0.003	0.009	L 0.003	1.07
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.4	L 0.4	L 0.4	L 0.4
Potassium	K	1.34	0.97	1.41	3.06
Selenium	Se	L 0.001	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		5321-17	5321-18	5321-19	5321-20
CLIENT SAMPLE I.D.		Cebuliak	Campbell	Penner	Parks
DISSOLVED METALS (mg/L) (CON'T)					
Silicon	Si02	11.3	12.3	10.8	12.8
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	4.82	4.40	4.16	10.9
Strontium	Sr	0.15	0.22	0.14	0.23
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	0.033	0.015	0.13	0.79
TOTAL METALS (mg/L)					
Aluminum	Al	0.060	0.072	0.054	0.064
Antimony	Sb	L 0.001	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001	L 0.001
Barium	Ba	0.064	0.31	0.061	0.042
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.042	0.058	0.032	0.027
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	54.8	95.6	55.5	43.7
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.015	0.007	0.006	0.071
Iron	Fe	0.041	0.12	0.032	4.48
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	7.99	12.5	7.71	16.8
Manganese	Mn	L 0.003	0.010	L 0.003	1.12
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4	L 0.4
Selenium	Se	0.002	0.002	0.001	0.002
Silicon	Si02	11.4	12.6	10.9	12.9
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	4.97	4.41	4.27	10.9
Strontium	Sr	0.15	0.22	0.15	0.23
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	0.034	0.036	0.15	0.89
POLLUTANT TESTS (mg/L)					
Total Phosphate	P	L 0.02	L 0.02	0.031	0.029
Ammonia Nitrogen	N	L 0.01	0.055	L 0.01	0.013
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001	L 0.001
OTHERS (mg/L)					
Ferrous Iron	Fe	L 0.05	0.11	L 0.05	3.28
Dissolved Oxygen	O2	-	-	-	-

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		5321-21	5321-22	5321-23	5321-24
CLIENT SAMPLE I.D.		21. Helps	21 B.Help's Barn	22. Kerr	23. DeHoog
TEMPERATURE °C		6.5	-	9.5	8.5
SAMPLE DATE		09/13/84	09/13/84	09/15/84	09/12/84
PHYSICAL TESTS					
pH		7.45	7.00	7.45	7.25
Conductivity (micromhos/cm)		205.	200.	723.	626.
Color [Pt-Co Scale](Co)		L 5.	50.	5.	L 5.
Turbidity (NTU)		0.54	9.4	1.7	1.4
Hardness (mg/L)	CaCO3	100.	103.	416.	290.
SOLIDS (mg/L)					
Total Suspended		2.5	6.5	3.5	L 0.5
Total Dissolved		188.	190.	720.	552.
DISSOLVED ANIONS (mg/L)					
Alkalinity: Bicarbonate	HCO3	126.	133.	536.	346.
Alkalinity: Carbonate	CO3	Nil	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil	Nil
Chlorides	Cl	2.1	L 0.5	8.6	48.6
Sulfates	SO4	5.8	2.9	10.0	6.8
Nitrates	N	0.44	0.040	0.69	1.34
Nitrites	N	L 0.002	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.002	0.021	0.010	0.001
ortho-Phosphates	P	0.002	0.021	0.003	L 0.001
Silica	SiO2	6.60	5.92	6.00	8.67
DISSOLVED METALS (mg/L)					
Aluminum	Al	0.070	0.11	0.017	0.089
Antimony	Sb	L 0.001	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001	L 0.001
Barium	Ba	0.031	0.032	0.21	0.18
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.040	0.018	0.018	0.017
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	25.5	24.2	113.	84.5
Chromium	Cr	L 0.001	L 0.001	L 0.005	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.019	0.006	L 0.001	0.054
Iron	Fe	L 0.030	2.53	0.033	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	8.57	10.0	31.7	18.7
Manganese	Mn	0.011	0.080	0.011	0.36
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.4	L 0.4	L 0.4	L 0.4
Potassium	K	2.43	1.24	0.79	1.00
Selenium	Se	L 0.001	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		5321-21	5321-22	5321-23	5321-24
CLIENT SAMPLE I.D.		Helps	Helps Barn	Kerr	De Hoog
DISSOLVED METALS (mg/L) (CON'T)					
Silicon	Si02	11.0	9.26	14.3	14.2
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	5.61	5.91	15.0	28.5
Strontium	Sr	0.12	0.16	0.50	0.58
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	0.021	0.13	0.059	0.32
TOTAL METALS (mg/L)					
Aluminum	Al	0.11	0.20	0.20	0.12
Antimony	Sb	L 0.001	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001	L 0.001
arium	Ba	0.031	0.033	0.21	0.19
Beryllium	Be	L 0.003	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5	L 0.5
Boron	B	0.062	0.080	0.032	0.23
Cadmium	Cd	L 0.001	L 0.001	L 0.001	L 0.001
Calcium	Ca	25.5	24.2	115.	87.8
Chromium	Cr	L 0.001	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005	L 0.005
Copper	Cu	0.024	0.042	0.003	0.060
Iron	Fe	0.078	3.79	1.83	0.42
Lead	Pb	L 0.001	L 0.001	L 0.001	L 0.001
Magnesium	Mg	8.57	10.0	32.5	19.7
Manganese	Mn	0.013	0.080	0.016	0.36
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4	L 0.4
Selenium	Se	0.003	0.001	L 0.001	0.001
Silicon	Si02	11.1	9.47	14.4	14.4
Silver	Ag	L 0.005	L 0.005	L 0.005	L 0.005
Sodium	Na	5.62	5.95	15.2	29.9
Strontium	Sr	0.12	0.16	0.51	0.62
Tin	Sn	L 0.030	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006	L 0.006
Vanadium	V	0.010	L 0.010	L 0.010	L 0.010
Zinc	Zn	0.029	0.14	0.099	0.32
POLLUTANT TESTS (mg/L)					
Total Phosphate	P	L 0.02	0.027	L 0.02	L 0.02
Ammonia Nitrogen	N	0.030	0.040	0.018	0.030
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001	L 0.001
OTHERS (mg/L)					
Ferrous Iron	Fe	0.054	2.95	0.81	0.37
Dissolved Oxygen	O2	-	-	-	-

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		5321-25
CLIENT SAMPLE I.D.		24. Bulkley Balley Collievies
TEMPERATURE °C		6.1
SAMPLE DATE		09/12/84
PHYSICAL TESTS		
pH		7.20
Conductivity (micromhos/cm)		205.
Color [Pt-Co Scale](Co)		L 5.
Turbidity (NTU)		0.46
Hardness (mg/L)	CaCO3	99.
SOLIDS (mg/L)		
Total Suspended		L 0.5
Total Dissolved		161.
DISSOLVED ANIONS (mg/L)		
Alkalinity: Bicarbonate	HCO3	86.6
Alkalinity: Carbonate	CO3	Nil
Alkalinity: Hydroxide	OH	Nil
Chlorides	Cl	L 0.5
Sulfates	SO4	29.5
Nitrates	N	0.050
Nitrites	N	L 0.002
Total Dissolved Phosphates	P	0.008
ortho-Phosphates	P	0.002
Silica	SiO2	3.51
DISSOLVED METALS (mg/L)		
Aluminum	Al	0.065
Antimony	Sb	L 0.001
Arsenic	As	L 0.001
Barium	Ba	0.041
Beryllium	Be	L 0.003
Bismuth	Bi	L 0.5
Boron	B	0.014
Cadmium	Cd	L 0.001
Calcium	Ca	26.0
Chromium	Cr	L 0.001
Cobalt	Co	L 0.005
Copper	Cu	L 0.001
Iron	Fe	0.052
Lead	Pb	L 0.001
Magnesium	Mg	8.15
Manganese	Mn	0.004
Molybdenum	Mo	L 0.005
Nickel	Ni	L 0.005
Phosphorus	PO4	L 0.4
Potassium	K	0.55
Selenium	Se	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		5321-25
CLIENT SAMPLE I.D.		Bulkley Valley Collievies
DISSOLVED METALS (mg/L) (CON'T)		
Silicon	Si02	5.51
Silver	Ag	L 0.005
Sodium	Na	3.81
Strontium	Sr	0.12
Tin	Sn	L 0.030
Titanium	Ti	L 0.006
Vanadium	V	L 0.010
Zinc	Zn	0.038
TOTAL METALS (mg/L)		
Aluminum	Al	0.092
Antimony	Sb	L 0.001
Arsenic	As	L 0.001
Barium	Ba	0.042
Beryllium	Be	L 0.003
Bismuth	Bi	L 0.5
Boron	B	0.064
Cadmium	Cd	L 0.001
Calcium	Ca	26.9
Chromium	Cr	L 0.001
Cobalt	Co	L 0.005
Copper	Cu	0.002
Iron	Fe	0.076
Lead	Pb	L 0.001
Magnesium	Mg	8.58
Manganese	Mn	0.004
Mercury	Hg	L 0.00005
Molybdenum	Mo	L 0.005
Nickel	Ni	L 0.005
Phosphorus	P04	L 0.4
Selenium	Se	L 0.001
Silicon	Si02	5.75
Silver	Ag	L 0.005
Sodium	Na	3.90
Strontium	Sr	0.12
Tin	Sn	L 0.030
Titanium	Ti	L 0.006
Vanadium	V	L 0.010
Zinc	Zn	0.047
POLLUTANT TESTS (mg/L)		
Total Phosphate	P	L 0.02
Ammonia Nitrogen	N	0.019
Total Phenolics as Phenol		L 0.001
OTHERS (mg/L)		
Ferrous Iron	Fe	0.067
Dissolved Oxygen	O2	-

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

can test ltd.
1523 WEST 3rd AVENUE. VANCOUVER. B.C. V6J 1J8 • TELEPHONE (604) 734-7276 • TELEX 04-54210

Report On: Analysis of water samples
File No.: 4965F
Report No.:
Reported To: Crows Nest Resources
P.O. #: CN21934
P.O. Box 2699, Station "A"
Date: Sept. 5/84
Calgary, Alberta T2P 2M7
Attention: Mr. Dave Urso

We have tested the samples of water submitted by you and report as follows:

DISCUSSION:

It was noted that for samples 2 and 5 the ortho and total dissolved phosphate values were appreciably higher than the total phosphate values. This appears to have been a result of field contamination. Phenol could not be conducted on sample 3 because the bottle was broken during transit.

SAMPLE IDENTIFICATION:

The samples were submitted in plastic bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: MONTHLY SAMPLING FOR AUGUST
DATE SUBMITTED: AUGUST 22, 1984

CTL#	CLIENT I.D.	DESCRIPTION
4965-1	TH-01	Cabinet Creek
-2	TH-02	Four Creek
-3	TH-03	Tenas Creek
-4	TH-04	Goat Horn Lower
-5	TH-05	Hubert Creek
-6	TH-06	Bulkley Upper
-7	TH-07	Bulkley Lower
-8	TH-08	Telkwa Upper
-9	TH-09	Telkwa Lower
-10	TH-10	Goat Horn Above B.V.C.
-11	TH-11	Goat Horn Below B.V.C.
-12	TH-12	Goat Horn Upper

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AN/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the 'Annual Book of ASTM Standards", May 1982.

The dissolved oxygen was determined in the field using a Titron Oxygen Meter, Model RD-15.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

(per) Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

RESULTS OF TESTING:

SAMPLE #		4965-1	4965-2	4965-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
TEMPERATURE °F		4.2	7.2	6.7
PHYSICAL TESTS				
pH		7.65	8.20	8.20
Conductivity (micromhos/cm)		76.7	270.	110.
Color [Pt-Co Scale](Co)		L 5.	20.	5.
Turbidity (NTU)		0.70	0.50	1.5
Hardness (mg/L)	CaC03	35.5	142.	56.0
SOLIDS (mg/L)				
Total Suspended		1.0	1.0	2.0
Total Dissolved		61.	256.	104.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	29.1	177.	75.7
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	12.0	15.0	L 1.0
Nitrates	N	L 0.010	L 0.010	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	L 0.001	0.088	0.017
ortho-Phosphates	P	L 0.001	0.082	0.004
Silica	Si02	3.72	5.92	4.32
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.016	0.045	0.013
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.009	0.078	0.023
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	12.0	31.0	17.0
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	L 0.030	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.22	15.3	3.21
Manganese	Mn	L 0.003	L 0.003	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	0.26	0.65	0.17
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4965-1	4965-2	4965-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	SiO2	3.69	6.49	5.10
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.06	9.80	2.49
Strontium	Sr	0.037	0.18	0.081
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.094	0.079	0.13
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.010	0.078	0.023
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	0.012
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	12.4	31.1	17.0
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.002	0.002	L 0.001
Iron	Fe	L 0.030	L 0.030	0.084
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.27	15.5	3.22
Manganese	Mn	L 0.003	L 0.003	0.004
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	SiO2	4.05	6.52	5.45
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.08	9.92	2.54
Strontium	Sr	0.039	0.18	0.082
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	0.014
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.020	L 0.020	L 0.020
Ammonia Nitrogen	N	L 0.010	L 0.010	0.018
Total Phenolics as Phenol		L 0.001	L 0.001	-
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	0.09	L 0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4965-4	4965-5	4965-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
TEMPERATURE °F		5.5	7.7	10.8
PHYSICAL TESTS				
pH		7.90	7.95	7.65
Conductivity (micromhos/cm)		82.5	296.	47.2
Color [Pt-Co Scale](Co)		5.	40.	5.
Turbidity (NTU)		1.5	8.2	2.5
Hardness (mg/L)	CaCO3	38.5	164.	22.5
SOLIDS (mg/L)				
Total Suspended		4.0	7.5	3.5
Total Dissolved		70.	290.	41.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	50.4	211.	29.1
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	SO4	L 1.0	L 1.0	L 1.0
Nitrates	N	L 0.010	L 0.010	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.005	0.35	0.007
ortho-Phosphates	P	L 0.001	0.25	0.003
Silica	SiO2	3.58	9.92	2.90
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.027	0.022	0.022
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.039	0.086	0.019
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	12.0	46.7	7.55
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	0.90	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.94	11.2	0.81
Manganese	Mn	L 0.003	0.79	0.004
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.40	L 0.40	L 0.40
Potassium	K	0.28	0.90	0.26
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4965-4	4965-5	4965-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	3.74	13.4	2.60
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.25	4.64	0.84
Strontium	Sr	0.047	0.18	0.031
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.013	L 0.006	1 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.15	0.13	0.27
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	0.002	L 0.001
Barium	Ba	0.042	0.093	0.021
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.013	0.014	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	12.2	47.5	7.59
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.003	L 0.001	L 0.001
Iron	Fe	0.15	3.06	0.25
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.98	11.4	0.85
Manganese	Mn	0.005	0.82	0.012
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	4.17	14.1	3.55
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.34	4.74	0.86
Strontium	Sr	0.051	0.19	0.031
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.019	L 0.006	0.021
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.020	0.034	L 0.020
Ammonia Nitrogen	N	0.016	0.047	0.037
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	3.57	0.09

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4965-7	4965-8	4965-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
TEMPERATURE OF		11.1	6.1	4.2
PHYSICAL TESTS				
pH		7.80	7.80	7.85
Conductivity (micromhos/cm)		53.2	51.9	53.9
Color [Pt-Co Scale](Co)		5.	5.	5.
Turbidity (NTU)		3.2	1.5	1.5
Hardness (mg/L)	CaCO3	25.5	144.	26.0
SOLIDS (mg/L)				
Total Suspended		3.0	23.0	22.0
Total Dissolved		47.	47.	50.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	33.6	33.6	35.6
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	SO4	L 1.0	L 1.0	L 1.0
Nitrates	N	L 0.010	L 0.010	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.012	0.030	0.030
ortho-Phosphates	P	0.002	0.007	0.007
Silica	SiO2	2.62	2.20	2.50
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.025	0.040	0.041
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.020	0.024	0.026
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	8.38	8.30	8.52
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.044	L 0.030	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.02	1.05	1.07
Manganese	Mn	0.019	0.006	0.006
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.40	L 0.40	L 0.40
Potassium	K	0.30	0.26	0.26
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4965-7	4965-8	4965-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	SiO2	2.79	2.73	3.64
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	0.95	0.92	0.96
Strontium	Sr	0.034	0.043	0.044
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.18	1.16	1.23
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.022	0.040	0.040
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	0.023
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	8.42	8.37	8.69
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	0.005
Iron	Fe	0.21	0.89	0.99
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.03	1.36	1.39
Manganese	Mn	0.028	0.034	0.035
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	SiO2	3.27	7.42	9.38
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	0.95	1.10	1.16
Strontium	Sr	0.034	0.046	0.046
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.010	0.059	0.054
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	0.007	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.020	0.032	0.034
Ammonia Nitrogen	N	0.024	L 0.010	L 0.010
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.16	0.39	0.30

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4965-10	4965-11	4965-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
TEMPERATURE °F		4.4	5.0	6.7
PHYSICAL TESTS				
pH		7.80	7.95	7.85
Conductivity (micromhos/cm)		83.3	81.8	70.9
Color [Pt-Co Scale](Co)		L 5.	5.	5.
Turbidity (NTU)		0.95	1.3	0.50
Hardness (mg/L)	CaCO3	37.5	38.0	35.0
SOLIDS (mg/L)				
Total Suspended		1.0	2.0	2.0
Total Dissolved		68.	68.	68.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	36.2	37.5	47.8
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	SO4	11.0	10.0	2.0
Nitrates	N	L 0.010	L 0.010	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.010	0.010	0.007
ortho-Phosphates	P	L 0.001	L 0.001	L 0.001
Silica	SiO2	3.30	3.51	3.42
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.017	0.017	0.021
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.032	0.034	0.12
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.010
Calcium	Ca	12.1	12.2	9.90
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	L 0.030	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.69	1.76	2.41
Manganese	Mn	L 0.003	L 0.003	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.40	L 0.40	L 0.40
Potassium	K	0.27	0.27	0.21
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4965-10	4965-11	4965-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.35	4.30	3.90
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.65	1.23	0.94
Strontium	Sr	0.040	0.041	0.034
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.15	0.15	0.057
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.033	0.035	0.12
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	12.1	12.3	10.1
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.049	0.075	0.032
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.70	1.77	2.44
Manganese	Mn	L 0.003	0.004	L 0.003
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	4.62	4.53	3.92
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.66	1.24	1.03
Strontium	Sr	0.041	0.041	0.035
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	0.007
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.020	L 0.020	L 0.020
Ammonia Nitrogen	N	0.013	L 0.010	0.015
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	L 0.05	L 0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

can test ltd.

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File 4607F

Report On: Analysis of water samples

File No.: 4607F

Report No.:

Reported To: Crows Nest Resources

P.O. #: CN21934

P.O. Box 2699, Station "A"

Date: July 31/84

Calgary, Alberta T2P 2M7

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you and report as follows:

SAMPLE IDENTIFICATION:

The samples were submitted in plastic bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: MONTHLY SAMPLING FOR ~~JUNE~~ July
DATE SUBMITTED: JULY 19, 1984

CTL#	CLIENT I.D.	DESCRIPTION
4607-1	TH-01	Cabinet Creek
-2	TH-02	Four Creek
-3	TH-03	Tenas Creek
-4	TH-04	Goat Horn Lower
-5	TH-05	Hubert Creek
-6	TH-06	Bulkley Upper
-7	TH-07	Bulkley Lower
-8	TH-08	Telkwa Upper
-9	TH-09	Telkwa Lower
-10	TH-10	Goat Horn Above B.V.C.
-11	TH-11	Goat Horn Below B.V.C.
-12	TH-12	Goat Horn Upper

...../2

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AN/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the 'Annual Book of ASTM Standards", May 1982.

The dissolved oxygen was determined in the field using a Titron Oxygen Meter, Model RD-15.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

per Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

RESULTS OF TESTING:

SAMPLE #		4607-1	4607-2	4607-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
TEMPERATURE °C		6.1	7.2	6.7
DISSOLVED OXYGEN (mg/L)		8.0	8.6	9.2
PHYSICAL TESTS				
pH		7.35	8.15	7.90
Conductivity (micromhos/cm)		69.4	218.	103.
Color [Pt-Co Scale](Co)		L 5.	40.	5.
Turbidity (NTU)		1.8	1.0	2.8
Hardness (mg/L)	CaCO3	31.	107.	51.
SOLIDS (mg/L)				
Total Suspended		2.0	L 0.5	2.0
Total Dissolved		54.0	186.	90.2
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	24.6	124.	61.6
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	SO4	12.0	11.5	1.5
Nitrates	N	L 0.010	L 0.010	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.005	0.007	0.010
ortho-Phosphates	P	0.002	0.003	L 0.001
Silica	SiO2	1.98	3.85	3.04
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.016	0.087	0.018
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.008	0.063	0.022
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	0.012	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	10.5	23.4	15.5
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	L 0.030	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.11	11.6	2.94
Manganese	Mn	L 0.003	L 0.003	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.4	L 0.4	L 0.4
Potassium	K	0.25	0.52	0.17
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4607-1	4607-2	4607-3
CLIENT SAMPLE I.D.		TH-01	TH-01	TH-03
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.33	7.09	5.83
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.02	7.58	2.47
Strontium	Sr	0.034	0.14	0.075
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.17	0.10	0.20
Antimony	Sb	L 0.001	L 0.001	L 0.001
rsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.009	0.065	0.023
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.019	0.013	0.014
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	10.5	23.4	15.5
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.004	0.002	L 0.001
Iron	Fe	0.13	0.047	0.097
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.12	11.9	2.92
Manganese	Mn	0.007	L 0.003	0.005
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
ickel	Ni	L 0.005	L 0.005	L 0.005
osphorus	P04	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	4.53	6.98	6.34
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.06	7.58	2.46
Strontium	Sr	0.034	0.14	0.076
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	0.007
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.02	L 0.02	L 0.02
Ammonia Nitrogen	N	0.027	0.048	0.030
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	L 0.05	L 0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4607-4	4607-5	4607-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
TEMPERATURE °C		10.0	16.1	10.9
DISSOLVED OXYGEN (mg/L)		9.8	6.6	7.4
PHYSICAL TESTS				
pH		7.65	8.20	7.40
Conductivity (micromhos/cm)		86.4	248.	50.4
Color [Pt-Co Scale](Co)		5.	60.	L 5.
Turbidity (NTU)		1.5	4.5	4.7
Hardness (mg/L)	CaCO3	40.	130.	22.
SOLIDS (mg/L)				
Total Suspended		1.0	4.0	6.0
Total Dissolved		69.4	224.	41.7
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	38.2	160.	24.6
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	SO4	10.5	2.0	4.0
Nitrates	N	L 0.010	L 0.010	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.018	0.050	0.006
ortho-Phosphates	P	0.009	0.019	0.003
Silica	SiO2	2.27	6.02	2.09
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.024	0.050	0.013
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.042	0.066	0.018
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	12.5	36.7	7.46
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	0.90	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.15	9.21	0.86
Manganese	Mn	L 0.003	0.48	0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.4	L 0.4	L 0.4
Potassium	K	0.29	0.52	0.28
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4607-4	4607-5	4607-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	SiO2	4.04	11.0	2.97
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.43	3.58	1.02
Strontium	Sr	0.045	0.15	0.032
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.084	0.12	0.30
Antimony	Sb	L 0.001	L 0.001	L 0.001
rsenic	As	L 0.001	0.002	L 0.001
Barium	Ba	0.043	0.072	0.024
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	12.6	37.5	7.69
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.056	2.04	0.28
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.16	9.59	0.92
Manganese	Mn	0.004	0.51	0.023
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
hosphorus	P04	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	SiO2	4.12	11.6	4.07
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.46	3.66	1.03
Strontium	Sr	0.046	0.15	0.033
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.005	0.008
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.02	0.054	0.024
Ammonia Nitrogen	N	0.019	0.052	0.023
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	2.00	0.16

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4607-7	4607-8	4607-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
TEMPERATURE °C		11.1	9.4	9.4
DISSOLVED OXYGEN (mg/L)		8.0	8.4	8.4
PHYSICAL TESTS				
pH		7.40	7.30	7.40
Conductivity (micromhos/cm)		59.1	50.2	52.6
Color [Pt-Co Scale](Co)		L 5.	L 5.	L 5.
Turbidity (NTU)		5.2	55.	65.
Hardness (mg/L)	CaCO3	27.	23.	24.
SOLIDS (mg/L)				
Total Suspended		5.0	81.5	83.0
Total Dissolved		48.0	44.2	43.1
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	30.8	31.4	26.5
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	SO4	2.9	L 1.0	3.4
Nitrates	N	L 0.010	L 0.010	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.011	0.031	0.020
ortho-Phosphates	P	0.009	0.009	0.005
Silica	SiO2	2.11	1.92	1.94
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.022	0.075	0.071
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.020	0.021	0.022
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	8.62	7.37	7.64
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.049	L 0.030	0.032
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.17	1.00	1.06
Manganese	Mn	0.023	0.006	0.007
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.4	L 0.4	L 0.4
Potassium	K	0.28	0.21	0.21
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4607-7	4607-8	4607-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	SiO2	3.25	3.13	3.20
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.12	1.01	1.03
Strontium	Sr	0.036	0.039	0.039
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.26	1.06	4.31
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.025	0.046	0.071
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	8.82	7.98	8.87
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	1 0.005	L 0.005
Copper	Cu	L 0.001	0.001	0.006
Iron	Fe	0.29	0.80	3.09
Lead	Pb	L 0.001	0.001	0.002
Magnesium	Mg	1.23	1.24	2.15
Manganese	Mn	0.036	0.063	0.11
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	SiO2	4.40	8.21	26.9
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.20	1.25	2.30
Strontium	Sr	0.037	0.044	0.053
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	0.045	0.21
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.40	0.14	0.22
Ammonia Nitrogen	N	0.023	0.031	0.024
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	0.32	0.24

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4607-10	4607-11	4607-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
TEMPERATURE °C		3.9	4.4	6.7
DISSOLVED OXYGEN (mg/L)		7.2	7.0	9.3
PHYSICAL TESTS				
pH		7.00	7.50	7.40
Conductivity (micromhos/cm)		83.7	84.0	53.8
Color [Pt-Co Scale](Co)		L 5.	L 5.	L 5.
Turbidity (NTU)		0.90	1.3	1.3
Hardness (mg/L)	CaC03	40.	39.	26.
SOLIDS (mg/L)				
Total Suspended		2.5	L 0.5	1.0
Total Dissolved		67.1	66.9	45.8
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	32.0	35.7	30.8
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	13.4	11.5	1.9
Nitrates	N	L 0.010	L 0.010	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.016	0.005	0.019
ortho-Phosphates	P	0.005	0.001	0.010
Silica	Si02	2.07	2.22	1.94
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.021	0.091	0.052
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.040	0.039	0.099
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	12.8	12.2	7.42
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	L 0.030	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.94	1.95	1.85
Manganese	Mn	L 0.003	L 0.003	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4
Potassium	K	0.26	0.27	0.19
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4607-10	4607-11	4607-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	3.86	3.73	3.03
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	2.07	1.29	0.75
Strontium	Sr	0.043	0.041	0.026
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.062	0.066	0.11
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.040	0.040	0.10
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.001
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	12.2	12.4	7.43
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.034	0.038	0.052
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.90	2.01	1.82
Manganese	Mn	L 0.003	0.003	0.005
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.4	L 0.4	L 0.4
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	3.68	3.82	3.14
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.92	1.31	0.77
Strontium	Sr	0.043	0.043	0.026
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.020	L 0.020	L 0.020
Ammonia Nitrogen	N	0.017	0.020	0.017
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	L 0.05	L 0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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1523 WEST 3rd AVENUE, VANCOUVER, B.C. V6J 1J8 • TELEPHONE (604) 734-7276 • TELEX 04-54210

Report On: Analysis of water samples

File No.: 4209F

Report No.:

Reported To: Crows Nest Resources
P.O. Box 2699, Station "A"
Calgary, Alberta T2P 2M7

P.O. #: CN21934

Date: July 5/84

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you and report as follows:

DISCUSSION:

It was noted that some total dissolved phosphate values were higher than the total phosphate values. This appears to have been a result of slight field contamination.

The ortho and total dissolved phosphate tests could not be conducted on samples 4209-7 and -8 because the bottles were broken during transit.

As requested, dissolved oxygen was determined in the field by means of an oxygen meter.

SAMPLE IDENTIFICATION:

The samples were submitted in plastic and glass bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: MONTHLY SAMPLING FOR MAY June
DATE SUBMITTED: JUNE 19, 1984

CTL#	CLIENT I.D.	DESCRIPTION
3482-1	TH-01	Cabinet Creek
-2	TH-02	Four Creek
-3	TH-03	Tenas Creek
-4	TH-04	Goat Horn Lower
-5	TH-05	Hubert Creek
-6	TH-06	Bulkley Upper
-7	TH-07	Bulkley Lower
-8	TH-08	Telkwa Upper
-9	TH-09	Telkwa Lower
-10	TH-10	Goat Horn Above B.V.C.
-11	TH-11	Goat Horn Below B.V.C.
-12	TH-12	Goat Horn Upper

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AN/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure form the 'Annual Book of ASTM Standards", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

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RESULTS OF TESTING:

SAMPLE #		4209-1	4209-2	4209-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
TEMPERATURE °F		32.	41.	39.
DISSOLVED OXYGEN (mg/L)		7.9	8.1	9.6
PHYSICAL TESTS				
pH		7.60	8.00	7.80
Conductivity (micromhos/cm)		94.3	135.	93.2
Color [Pt-Co Scale](Co)		5.	60.	15.
Turbidity (NTU)		1.2	1.2	8.0
Hardness (mg/L)	CaCO3	43.	63.	43.
SOLIDS (mg/L)				
Total Suspended		1.0	1.0	13.5
Total Dissolved		75.	113.	76.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	39.4	70.9	51.1
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	SO4	12.0	9.5	3.5
Nitrates	N	0.088	0.019	L 0.010
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.032	0.057	0.15
ortho-Phosphates	P	L 0.001	0.005	0.008
Silica	SiO2	3.08	4.54	4.30
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.028	0.11	0.11
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.011	0.042	0.018
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.015	0.025	0.016
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	14.5	14.4	13.1
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.001	0.003	L 0.001
Iron	Fe	L 0.030	0.058	L 0.030
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.60	6.51	2.36
Manganese	Mn	L 0.003	L 0.003	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.40	L 0.40	L 0.40
Potassium	K	0.23	0.35	0.14
Selenium	Se	L 0.001	L 0.001	L 0.001

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RESULTS OF TESTING: (CON'T)

SAMPLE #		4209-1	4209-2	4209-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si	4.72	6.78	6.60
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	0.92	3.35	1.51
Strontium	Sr	0.047	0.086	0.062
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.16	0.15	0.96
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.012	0.043	0.025
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.040	0.054	0.044
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	14.5	14.7	13.4
Chromium	Cr	0.010	0.002	0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.003	0.003	0.002
Iron	Fe	0.099	0.12	0.06
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.61	6.82	2.56
Manganese	Mn	0.004	L 0.003	0.021
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si	5.23	7.48	10.3
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	0.95	3.49	1.63
Strontium	Sr	0.048	0.089	0.065
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.006	0.007	0.036
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.02	0.032	L 0.02
Ammonia Nitrogen	N	L 0.01	L 0.01	L 0.01
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	0.094	0.090

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4209-4	4209-5	4209-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
TEMPERATURE °F		40.	48.	44.
DISSOLVED OXYGEN (mg/L)		10.6	8.9	8.85
PHYSICAL TESTS				
pH		7.75	8.15	7.60
Conductivity (micromhos/cm)		95.4	170.	52.6
Color [Pt-Co Scale](Co)		10.	80.	10.
Turbidity (NTU)		1.6	3.0	7.5
Hardness (mg/L)	CaC03	44.	91.	23.
SOLIDS (mg/L)				
Total Suspended		2.0	5.0	21.5
Total Dissolved		76.	146.	43.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	44.4	95.5	24.6
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	9.5	10.0	3.5
Nitrates	N	0.034	0.031	0.034
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.14	0.064	*
ortho-Phosphates	P	0.003	0.028	*
Silica	Si02	3.33	3.82	2.84
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.041	0.070	0.10
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.048	0.049	0.017
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.014	0.014	0.012
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	13.4	25.0	7.36
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	0.63	0.052
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.39	6.67	1.00
Manganese	Mn	0.003	0.23	0.005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	0.25	0.26	0.25
Selenium	Se	L 0.001	L 0.001	L 0.001

*See Discussion

RESULTS OF TESTING: (CON'T)

SAMPLE #		4209-4	4209-5	4209-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.87	5.08	4.45
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.13	2.21	0.83
Strontium	Sr	0.047	0.11	0.033
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	0.008	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.21	0.23	1.44
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.050	0.054	0.030
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.029	0.045	0.027
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	13.4	25.2	8.16
Chromium	Cr	0.010	0.003	0.011
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.003	0.003	0.004
Iron	Fe	0.19	1.06	1.16
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.41	6.76	1.38
Manganese	Mn	0.008	0.25	0.044
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	5.60	6.10	11.4
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.13	2.23	1.11
Strontium	Sr	0.047	0.11	0.037
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.009	0.020	0.086
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.02	0.040	0.090
Ammonia Nitrogen	N	L 0.01	L 0.01	L 0.01
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	1.02	0.16

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		4209-7	4209-8	4209-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
TEMPERATURE ^{O}F		44.	36.	36.
DISSOLVED OXYGEN (mg/L)		9.85	12.0	11.1
PHYSICAL TESTS				
pH		7.60	7.60	7.50
Conductivity (micromhos/cm)		63.6	52.6	54.5
Color [Pt-Co Scale](Co)		15.	10.	10.
Turbidity (NTU)		8.5	19.	20.
Hardness (mg/L)	CaC03	29.	24.	25.
SOLIDS (mg/L)				
Total Suspended		19.0	19.5	19.5
Total Dissolved		54.	46.	49.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	32.0	25.9	28.3
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	5.0	4.5	5.0
Nitrates	N	0.012	0.038	0.028
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	*	0.046	0.097
ortho-Phosphates	P	*	0.009	0.007
Silica	Si02	2.84	2.84	3.08
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.088	0.12	0.11
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.020	0.019	0.019
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.13	L 0.010	0.011
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	9.24	7.54	8.01
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.11	0.068	0.052
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.52	1.15	1.24
Manganese	Mn	0.027	0.005	0.005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	0.26	0.17	0.16
Selenium	Se	L 0.001	L 0.001	L 0.001

*See Discussion

RESULTS OF TESTING: (CON'T)

SAMPLE #		4209-7	4209-8	4209-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.59	5.05	5.08
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.03	0.87	0.89
Strontium	Sr	0.039	0.039	0.040
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.005	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	1.29	1.52	1.76
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.032	0.032	0.036
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.017	0.033	0.070
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	9.61	8.16	8.65
Chromium	Cr	0.012	0.003	0.005
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.002	0.003	0.003
Iron	Fe	1.11	1.05	1.23
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	1.82	1.55	1.67
Manganese	Mn	0.067	0.045	0.054
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	10.2	11.3	12.9
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.17	1.13	1.14
Strontium	Sr	0.042	0.044	0.046
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.061	0.069	0.077
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.032	0.049	0.044
Ammonia Nitrogen	N	L 0.01	L 0.01	L 0.01
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.24	0.18	0.12

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4209-10	4209-11	4209-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
TEMPERATURE ^{O}F		38.	38.	34.
DISSOLVED OXYGEN (mg/L)		11.0	12.6	8.5
PHYSICAL TESTS				
pH		7.95	7.85	7.75
Conductivity (micromhos/cm)		89.4	89.1	60.0
Color [Pt-Co Scale](Co)		5.	10.	15.
Turbidity (NTU)		1.7	2.1	1.1
Hardness (mg/L)	CaC03	42.	41.	29.
SOLIDS (mg/L)				
Total Suspended		L 0.5	L 0.5	L 0.5
Total Dissolved		74.	72.	52.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	44.4	40.7	33.3
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	7.5	9.5	2.5
Nitrates	N	0.052	0.028	0.018
Nitrites	N	L 0.002	L 0.002	L 0.002
Total Dissolved Phosphates	P	0.060	0.022	0.026
ortho-Phosphates	P	0.002	0.004	0.002
Silica	Si02	2.84	2.84	2.60
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.054	0.052	0.10
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.049	0.048	0.10
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.030	0.019	0.017
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	13.0	12.9	8.44
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	L 0.030	L 0.030	0.042
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.28	2.17	1.99
Manganese	Mn	0.004	L 0.003	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	0.26	0.25	0.16
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4209-10	4209-11	4209-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.76	4.73	4.45
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.63	1.16	0.63
Strontium	Sr	0.041	0.044	0.028
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.20	0.23	0.12
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	0.001
Barium	Ba	0.050	0.050	0.11
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.067	0.047	0.059
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	12.7	13.0	8.57
Chromium	Cr	0.009	0.004	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.003	0.004	0.003
Iron	Fe	0.16	0.18	0.11
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.09	2.20	2.06
Manganese	Mn	0.009	0.010	0.006
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	5.16	5.63	4.80
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	1.59	1.13	0.70
Strontium	Sr	0.043	0.044	0.028
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.011	0.009	L 0.006
Vanadium	V	L 0.015	L 0.015	L 0.015
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L 0.02	L 0.02	L 0.02
Ammonia Nitrogen	N	L 0.01	L 0.01	L 0.01
Total Phenolics as Phenol		L 0.001	L 0.001	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L 0.05	L 0.05	L 0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

can test ltd.
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Report On: Analysis of water samples
File No.: 3761F

Report No.: CN21934

Reported To: Crows Nest Resources
P.O. Box 2699, Station "A"
Calgary, Alberta T2P 2M7
P.O. #:

Date: June 6/84

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on May 15, 1984 and report as follows:

SAMPLE IDENTIFICATION:

The samples were submitted in plastic bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: MONTHLY SAMPLING FOR MAY
DATE SUBMITTED: MAY 15, 1984

CTL#	CLIENT I.D.	DESCRIPTION
3482-1	TH-01	Cabinet Creek
-2	TH-02	Four Creek
-3	TH-03	Tenas Creek
-4	TH-04	Goat Horn Lower
-5	TH-05	Hubert Creek
-6	TH-06	Bulkley Upper
-7	TH-07	Bulkley Lower
-8	TH-08	Telkwa Upper
-9	TH-09	Telkwa Lower
-10	TH-10	Goat Horn Above B.V.C.
-11	TH-11	Goat Horn Below B.V.C.
-12	TH-12	Goat Horn Upper

...../2

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AN/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure form the 'Annual Book of ASTM Standards", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
TEMPERATURE ^{O}F		30.0	28.0	32.0
PHYSICAL TESTS				
pH		7.60	7.25	7.65
Conductivity (micromhos/cm)		117.	72.2	111.
Color [Pt-Co Scale](Co)		50.	110.	60.
Turbidity (NTU)		3.3	18.	8.0
Hardness (mg/L)	CaC03	59.5	42.0	60.0
SOLIDS (mg/L)				
Total Suspended		48.5	59.0	53.0
Total Dissolved		106.	63.	110.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	67.2	42.1	73.0
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	9.0	10.0	5.0
Nitrates	N	0.011	0.019	0.007
Nitrites	N	0.009	0.002	0.003
Total Dissolved Phosphates	P	0.026	0.054	0.058
ortho-Phosphates	P	0.003	0.018	0.010
Silica	Si02	1.07	4.07	6.63
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.16	0.50	0.15
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.024	0.037	0.027
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.039	0.012	0.023
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	19.6	9.80	18.1
Chromium	Cr	L 0.001	L 0.001	0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.071	0.36	0.11
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.51	4.21	3.52
Manganese	Mn	0.012	0.005	0.004
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	0.33	0.32	0.23
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	5.67	7.57	7.23
Silver	Ag	L 0.005	1 0.005	L 0.005
Sodium	Na	1.93	2.84	2.66
Strontium	Sr	0.070	0.060	0.088
Tin	Sn	L 0.030	1 0.030	L 0.030
Titanium	Ti	0.006	0.015	0.008
Vanadium	V	0.012	L 0.01	L 0.01
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.35	1.75	0.94
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.025	0.046	0.033
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.018	0.022	0.031
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	20.4	9.79	18.5
Chromium	Cr	L 0.001	0.001	0.003
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	0.003	L 0.001	L 0.001
Iron	Fe	0.27	0.99	0.56
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	2.72	4.36	3.70
Manganese	Mn	0.009	0.016	0.012
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	7.49	11.4	10.5
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	2.07	2.87	2.79
Strontium	Sr	0.073	0.061	0.090
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.013	0.065	0.036
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	0.009	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.060	0.060	0.040
Ammonia Nitrogen	N	L 0.01	L 0.01	0.078
Total Phenolics as Phenol		L 0.001	0.002	0.003
OTHERS (mg/L)				
Ferrous Iron	Fe	0.066	0.36	0.087

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
TEMPERATURE F		32.0	42.0	40.0
PHYSICAL TESTS				
pH		7.50	7.50	7.65
Conductivity (micromhos/cm)		102.	127.	66.8
Color [Pt-Co Scale](Co)		50.	60.	30.
Turbidity (NTU)		7.2	1.5	10.
Hardness (mg/L)	CaC03	55.0	70.0	30.5
SOLIDS (mg/L)				
Total Suspended		49.0	45.5	72.5
Total Dissolved		96.	120.	73.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	58.1	79.4	47.5
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	10.0	11.0	6.0
Nitrates	N	0.026	0.050	L 0.010
Nitrites	N	0.002	0.002	L 0.002
Total Dissolved Phosphates	P	0.030	0.028	0.025
ortho-Phosphates	P	0.003	0.006	0.004
Silica	Si02	4.07	0.89	1.07
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.076	0.055	0.039
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.063	0.033	0.019
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	0.011	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	15.7	18.7	9.02
Chromium	Cr	L 0.001	L 0.001	0.007
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	0.002
Iron	Fe	0.088	0.15	0.080
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	3.68	5.46	1.89
Manganese	Mn	0.003	0.029	0.007
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	0.37	0.74	0.47
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	5.66	0.91	6.54
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	2.19	3.21	1.77
Strontium	Sr	0.061	0.078	0.048
Tin	Sn	L 0.03	L 0.03	L 0.03
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	1.00	0.16	1.55
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.075	0.035	0.035
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.018	0.025	0.015
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	16.0	18.9	9.34
Chromium	Cr	0.007	0.004	0.008
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	0.002
Iron	Fe	0.73	0.41	1.46
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	3.89	5.53	2.21
Manganese	Mn	0.018	0.041	0.073
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	9.82	1.65	14.4
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	2.28	3.25	1.93
Strontium	Sr	0.064	0.079	0.052
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.036	0.013	0.063
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	0.011	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.030	0.030	0.14
Ammonia Nitrogen	N	L 0.01	L 0.01	L 0.01
Total Phenolics as Phenol		L 0.001	0.003	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.09	0.14	0.24

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
TEMPERATURE F		41.	34.	34.
PHYSICAL TESTS				
pH		7.65	7.45	7.50
Conductivity (micromhos/cm)		102.	71.0	76.3
Color [Pt-Co Scale](Co)		50.	30.	40.
Turbidity (NTU)		5.1	8.0	6.8
Hardness (mg/L)	CaC03	50.5	31.5	35.5
SOLIDS (mg/L)				
Total Suspended		50.0	57.0	67.5
Total Dissolved		92.	65.	74.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	63.2	42.3	48.8
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	4.0	2.0	3.0
Nitrates	N	0.010	0.014	0.048
Nitrites	N	L 0.002	0.004	0.002
Total Dissolved Phosphates	P	0.045	0.048	0.046
ortho-Phosphates	P	0.012	0.009	0.007
Silica	Si02	2.14	3.00	2.78
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.079	0.052	0.17
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.025	0.022	0.025
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	13.9	10.2	10.8
Chromium	Cr	0.003	0.002	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.13	0.16	0.15
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	3.69	1.83	2.01
Manganese	Mn	0.026	0.011	0.010
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	0.62	0.26	0.26
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	3.42	6.80	6.56
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	2.40	1.51	1.58
Strontium	Sr	0.061	0.050	0.051
Tin	Sn	L 0.03	L 0.03	L 0.03
Titanium	Ti	L 0.006	L 0.006	L 0.006
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.73	1.21	1.17
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.033	0.033	0.036
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.016	0.022	0.026
Cadmium	Cd	L 0.001	L 0.001	0.002
Calcium	Ca	14.0	10.6	11.2
Chromium	Cr	0.005	0.008	0.002
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	0.001
Iron	Fe	0.076	1.16	1.01
Lead	Pb	L 0.001	L 0.001	0.001
Magnesium	Mg	3.79	2.13	2.28
Manganese	Mn	0.054	0.049	0.043
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	7.24	13.0	12.3
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	2.48	1.69	1.74
Strontium	Sr	0.063	0.056	0.056
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.033	0.061	0.046
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	L 0.005	L 0.005	L 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.050	0.060	0.040
Ammonia Nitrogen	N	L 0.01	L 0.01	L 0.01
Total Phenolics as Phenol		0.006	0.004	0.003
OTHERS (mg/L)				
Ferrous Iron	Fe	0.13	0.13	0.13

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
TEMPERATURE F		29.0	29.5	29.0
PHYSICAL TESTS				
pH		7.55	7.50	7.45
Conductivity (micromhos/cm)		99.9	99.9	77.7
Color [Pt-Co Scale](Co)		40.	50.	4.1
Turbidity (NTU)		17.	8.0	4.1
Hardness (mg/L)	CaC03	48.0	42.5	32.0
SOLIDS (mg/L)				
Total Suspended		55.5	50.0	45.5
Total Dissolved		89.	87.	69.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	57.8	55.8	47.2
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	6.0	6.0	1.0
Nitrates	N	0.040	0.038	0.028
Nitrites	N	L 0.002	0.002	0.007
Total Dissolved Phosphates	P	0.023	0.025	0.044
ortho-Phosphates	P	0.004	0.004	0.008
Silica	Si02	2.35	2.57	4.07
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.11	0.14	0.12
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.065	0.060	0.11
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	L 0.010	0.027	0.011
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	14.2	14.0	9.97
Chromium	Cr	0.003	L 0.001	0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.10	0.11	0.083
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	3.00	3.15	2.89
Manganese	Mn	L 0.003	0.008	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	0.35	0.36	0.32
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	SiO2	5.39	5.73	5.47
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	2.05	1.83	1.16
Strontium	Sr	0.051	0.052	0.035
Tin	Sn	L 0.03	L 0.03	L 0.03
Titanium	Ti	L 0.006	0.007	L 0.006
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	1.20	0.76	0.38
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.078	0.069	0.13
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.50	L 0.50	L 0.50
Boron	B	0.029	0.014	0.030
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	14.2	14.2	10.4
Chromium	Cr	0.009	L 0.001	0.007
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.81	0.49	0.35
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	3.15	3.36	3.06
Manganese	Mn	0.017	0.013	0.011
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	SiO2	10.6	8.53	7.34
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	2.12	1.88	1.27
Strontium	Sr	0.053	0.054	0.037
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.043	0.022	0.017
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	L 0.005	L 0.005	0.007
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.040	0.020	L 0.020
Ammonia Nitrogen	N	L 0.01	L 0.01	L 0.01
Total Phenolics as Phenol		0.004	0.003	0.003
OTHERS (mg/L)				
Ferrous Iron	Fe	0.086	0.086	0.08

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

can test ltd.

1523 WEST 3rd AVENUE, VANCOUVER, B.C. V6J 1J8 • TELEPHONE (604) 734-7276 • TELEX 04-54210

Report On: Analysis of water samples

File No.: 3482F

Report No.:

Reported To: Crows Nest Resources

P.O. #: CN21934

P.O. Box 2699, Station "A"

Date: April 30/84

Calgary, Alberta T2P 2M7

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on April 18, 1984 and report as follows:

DISCUSSION:

In general the results obtained for this set of samples are consistant with previous sample sets; however, some parameters (i.e. color) are slightly elevated due to the warming trend the area is experiencing.

It should be noted that some dissolved parameter concentrations were higher than the total. This is an apparent result of field contamination.

SAMPLE IDENTIFICATION:

The samples were submitted in plastic bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: APRIL 16-17, 1984
DATE SUBMITTED: APRIL 18, 1984

CTL#	CLIENT I.D.	DESCRIPTION
3482-1	TH-01	Cabinet Creek
-2	TH-02	Four Creek
-3	TH-03	Tenas Creek
-4	TH-04	Goat Horn Lower
-5	TH-05	Hubert Creek
-6	TH-06	Bulkley Upper
-7	TH-07	Bulkley Lower
-8	TH-08	Telkwa Upper
-9	TH-09	Telkwa Lower
-10	TH-10	Goat Horn Above B.V.C.
-11	TH-11	Goat Horn Below B.V.C.
-12	TH-12	Goat Horn Upper

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AN/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure form the 'Annual Book of ASTM Standards", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don Enns

Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

CAN TEST LTD.

Crows Nest Resources
File No: 3482F
Page No: 3

RESULTS OF TESTING:

		1	2	3
SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH 01	TH 02	TH 03
TEMPERATURE °F		29	28	- t
PHYSICAL TESTS				
pH		7.65	7.45	7.65
Conductivity (micromhos/cm)		144.	122.	133.
Color [Pt-Co Scale](Co)		40.	70.	60.
Turbidity (NTU)		8.0	14.	15.
Hardness (mg/L)	CaC03	70.	61.	67.
SOLIDS (mg/L)				
Total Suspended		9.0	19.0	29.0
otal Dissolved		123.	110.	122.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	79.9	74.5	87.4
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	9.5	9.0	L 1.0
Nitrates	N	0.15	0.044	0.045
Nitrites	N	0.006	0.006	0.005
Total Dissolved Phosphates	P	0.041	0.067	0.065
ortho-Phosphates	P	0.010	0.037	0.017
Silica	Si02	4.00	6.43	5.35
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.10	0.61	0.23
Antimony	Sb	L 0.001	L 0.001	L 0.001
rsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.027	0.044	0.029
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5
Boron	B	L 0.010	L 0.010	0.035
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	22.8 -	13.9	19.8
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.069	0.42	0.16
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	3.07	6.34	4.07
Manganese	Mn	L 0.003	0.007	0.013
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	0.39	0.44	0.36
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH 01	TH 02	TH 03
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	5.71	8.69	7.43
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	2.30	4.29	2.93
Strontium	Sr	0.082	0.082	0.095
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	0.021	0.009
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	1.02	2.25	2.02
Antimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.034	0.058	0.044
Beryllium	Be	L 0.003	L 0.001	L 0.001
Bismuth	Bi	L 0.5	L 0.5	L 0.5
Boron	B	0.026	0.026	0.037
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	22.7	14.2	20.3
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.63	1.28	1.46
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	3.23	6.71	4.52
Manganese	Mn	0.011	0.020	0.044
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	8.60	13.5	13.6
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	2.26	4.29	3.06
Strontium	Sr	0.083	0.084	0.10
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.038	0.075	0.073
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	0.031	0.007	0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.043	0.051	0.066
Ammonia Nitrogen	N	0.022	0.10	0.011
Total Phenolics as Phenol		0.003	0.004	L 0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.27	0.69	0.66

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH 04	TH 05	TH 06
TEMPERATURE °F		-	35.	34.
PHYSICAL TESTS				
pH		7.75	7.35	7.50
Conductivity (micromhos/cm)		159.	124.	77.6
Color [Pt-Co Scale](Co)		60.	60.	30.
Turbidity (NTU)		13.	6.6	11.
Hardness (mg/L)	CaCO3	79.	61.	36.
SOLIDS (mg/L)				
Total Suspended		20.0	13.5	20.0
otal Dissolved		140.	114.	68.5
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	88.1	75.3	46.7
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	SO4	14.5	6.5	L 1.0
Nitrates	N	0.46	0.77	0.025
Nitrites	N	0.006	0.020	0.003
Total Dissolved Phosphates	P	0.066	0.069	0.056
ortho-Phosphates	P	0.017	0.017	0.014
Silica	SiO2	4.50	4.18	4.46
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.14	0.086	0.10
Antimony	Sb	L 0.001	L 0.001	L 0.001
rsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.072	0.030	0.021
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5
Boron	B	0.012	0.011	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	22.5	16.2	10.7
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.12	0.26	0.12
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	5.43	4.81	2.26
Manganese	Mn	0.008	0.032	0.008
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	PO4	L 0.40	L 0.40	L 0.40
Potassium	K	0.58	1.11	0.51
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH 04	TH 05	TH 06
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	6.30	5.96	6.19
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	3.24	3.16	2.01
Strontium	Sr	0.088	0.065	0.055
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.008	0.007	L 0.006
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	1.86	1.00	1.71
ntimony	Sb	L 0.001	L 0.001	L 0.001
Arsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.086	0.038	0.032
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5
Boron	B	0.092	0.035	0.044
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	21.9	15.8	10.7
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	1.28	1.08	1.36
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	5.54	4.76	2.43
Manganese	Mn	0.034	0.052	0.057
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
ickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	12.2	9.21	13.2
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	3.11	3.06	2.16
Strontium	Sr	0.088	0.066	0.055
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.076	0.051	0.084
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	0.006	0.007	0.010
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.049	0.038	0.053
Ammonia Nitrogen	N	0.060	0.088	0.036
Total Phenolics as Phenol		0.002	L 0.001	0.004
OTHERS (mg/L)				
Ferrous Iron	Fe	0.53	0.86	0.54

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH 07	TH 08	TH 09
TEMPERATURE ^{O} F		34.	30.	30.
PHYSICAL TESTS				
pH		7.35	7.50	7.55
Conductivity (micromhos/cm)		125.	88.6	99.7
Color [Pt-Co Scale](Co)		60.	40.	45.
Turbidity (NTU)		7.5	16.	16.
Hardness (mg/L)	CaC03	60.	41.	49.
SOLIDS (mg/L)				
Total Suspended		15.0	48.5	36.0
otal Dissolved		110.	82.0	89.0
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	74.5	56.9	61.6
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	4.5	1.0	L 1.0
Nitrates	N	0.65	0.080	0.10
Nitrites	N	0.012	0.004	0.004
Total Dissolved Phosphates	P	0.047	0.043	0.045
ortho-Phosphates	P	0.017	0.014	0.017
Silica	Si02	4.21	5.11	5.08
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.11	0.14	0.15
Antimony	Sb	L 0.001	L 0.001	L 0.001
rsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.032	0.037	0.032
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	16.0	12.5	14.6
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.34	0.29	0.27
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	4.68	2.39	2.92
Manganese	Mn	0.045	0.039	0.024
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	1.10	0.37	0.38
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH 07	TH 08	TH 09
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	5.99	7.38	7.60
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	3.00	1.87	2.19
Strontium	Sr	0.067	0.067	0.068
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.008	0.019	0.009
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	1.13	2.54	2.33
ntimony	Sb	L 0.001	L 0.001	L 0.001
rsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.041	0.048	0.053
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5
Boron	B	0.16	0.013	0.025
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	16.1	13.2	15.0
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	1.29	2.04	1.95
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	4.83	2.85	3.35
Manganese	Mn	0.067	0.094	0.076
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
ickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	9.77	18.9	18.4
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	3.03	2.15	2.40
Strontium	Sr	0.068	0.068	0.074
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.058	0.13	0.11
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	0.014	0.005	0.006
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.045	0.10	0.077
Ammonia Nitrogen	N	0.046	0.021	L 0.01
Total Phenolics as Phenol		0.004	0.003	0.006
OTHERS (mg/L)				
Ferrous Iron	Fe	0.92	1.02	0.93

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH 10	TH 11	TH 12
TEMPERATURE °F		29.	29.	29.
PHYSICAL TESTS				
pH		7.90	7.65	7.65
Conductivity (micromhos/cm)		180.	155.	147.
Color [Pt-Co Scale](Co)		35.	60.	50.
Turbidity (NTU)		4.7	6.0	5.3
Hardness (mg/L)	CaC03	81.	76.	72.
SOLIDS (mg/L)				
Total Suspended		8.5	7.0	1.5
Total Dissolved		153.	130.	123.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	106.	86.0	90.0
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L 0.5	L 0.5	L 0.5
Sulfates	S04	5.0	7.0	L 1.0
Nitrates	N	0.48	0.40	0.73
Nitrites	N	0.003	0.010	0.005
Total Dissolved Phosphates	P	0.016	0.030	0.056
ortho-Phosphates	P	0.010	0.014	0.038
Silica	Si02	3.63	4.03	3.85
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.080	0.12	0.10
Antimony	Sb	L 0.001	L 0.001	L 0.001
rsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.091	0.073	0.19
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5
Boron	B	L 0.010	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	23.5	21.5	19.1
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.069	0.12	0.12
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	5.20	5.19	5.77
Manganese	Mn	L 0.003	0.007	L 0.003
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
Nickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Potassium	K	0.56	0.52	0.69
Selenium	Se	L 0.001	L 0.001	L 0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH 10	TH 11	TH 12
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	5.94	6.20	6.06
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	3.36	3.06	1.87
Strontium	Sr	0.084	0.083	0.065
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	L 0.006	0.008	L 0.006
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	L 0.005	L 0.005	L 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.92	0.77	0.66
ıtimony	Sb	L 0.001	L 0.001	L 0.001
.rsenic	As	L 0.001	L 0.001	L 0.001
Barium	Ba	0.097	0.081	0.19
Beryllium	Be	L 0.003	L 0.003	L 0.003
Bismuth	Bi	L 0.5	L 0.5	L 0.5
Boron	B	0.030	L 0.010	L 0.010
Cadmium	Cd	L 0.001	L 0.001	L 0.001
Calcium	Ca	22.8	21.5	18.9
Chromium	Cr	L 0.001	L 0.001	L 0.001
Cobalt	Co	L 0.005	L 0.005	L 0.005
Copper	Cu	L 0.001	L 0.001	L 0.001
Iron	Fe	0.73	0.57	0.56
Lead	Pb	L 0.001	L 0.001	L 0.001
Magnesium	Mg	5.10	5.31	5.77
Manganese	Mn	0.019	0.016	0.013
Mercury	Hg	L 0.00005	L 0.00005	L 0.00005
Molybdenum	Mo	L 0.005	L 0.005	L 0.005
ickel	Ni	L 0.005	L 0.005	L 0.005
Phosphorus	P04	L 0.40	L 0.40	L 0.40
Selenium	Se	L 0.001	L 0.001	L 0.001
Silicon	Si02	9.20	8.25	8.14
Silver	Ag	L 0.005	L 0.005	L 0.005
Sodium	Na	3.25	2.99	1.87
Strontium	Sr	0.084	0.083	0.065
Tin	Sn	L 0.030	L 0.030	L 0.030
Titanium	Ti	0.039	0.039	0.031
Vanadium	V	L 0.01	L 0.01	L 0.01
Zinc	Zn	0.005	0.005	0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.020	0.030	0.044
Ammonia Nitrogen	N	L 0.01	0.033	0.016
Total Phenolics as Phenol		0.011	0.006	0.004
OTHERS (mg/L)				
Ferrous Iron	Fe	0.22	0.30	0.28

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

can test ltd.

1523 WEST 3rd AVENUE, VANCOUVER, B.C. V6J 1J8 • TELEPHONE (604) 734-7276 • TELEX 04-54210

Report On: Analysis of water samples

File No.: 3209F

Report No.:

Reported To: Crows Nest Resources

P.O. #: CN21934

P.O. Box 2699, Station "A"

Date: April 4/84

Calgary, Alberta T2P 2M7

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on March 21, 1984 and report as follows:

DISCUSSION:

Because of insufficient filter paper, samples 3209-2, 3 and 4 were prepared in our laboratory. This appears to have created no problem as the data generated is consistent with earlier results.

The temperature indicated in the Results of Testing was obtained by Crows Nest Personnel.

SAMPLE IDENTIFICATION:

The samples were submitted in glass and plastic bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: MARCH 19, 1984
DATE SUBMITTED: MARCH 21, 1984

CTL#	CLIENT I.D.	DESCRIPTION
3209-1	TH-01	Cabinet Creek
-2	TH-02	Four Creek
-3	TH-03	Tenas Creek
-4	TH-04	Goat Horn Lower
-5	TH-05	Hubert Creek
-6	TH-06	Bulkley Upper
-7	TH-07	Bulkley Lower
-8	TH-08	Telkwa Upper
-9	TH-09	Telkwa Lower
-10	TH-10	Goat Horn Above B.V.C.
-11	TH-11	Goat Horn Below B.V.C.
-12	TH-12	Goat Horn Upper

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AN/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure form the 'Annual Book of ASTM Standards", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
TEMPERATURE °F		27.	28.	28.
PHYSICAL TESTS				
pH		7.90	8.30	8.15
Conductivity (micromhos/cm)		139.	301.	182.
Color [Pt-Co Scale](Co)		5.	20.	93.
Turbidity (NTU)		0.38	1.0	1.0
Hardness (mg/L)	CaC03	66.	137.	93.
SOLIDS (mg/L)				
Total Suspended		0.5	0.5	0.5
Total Dissolved		105.	230.	157.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	66.5	166.	111.
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	5.5	12.5	1.0
Nitrates	N	0.14	0.055	0.050
Nitrites	N	0.003	L0.002	L0.002
Total Dissolved Phosphates	P	0.010	0.020	0.020
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	Si02	2.68	3.05	3.29
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.012	0.086	0.057
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.022	0.067	0.035
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	22.0	29.6	27.6
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	0.036
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.68	14.9	5.64
Manganese	Mn	L0.003	L0.003	L0.003
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.26	0.70	0.22
Selenium	Se	L0.001	L0.001	L0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-3
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.71	6.50	6.73
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.12	9.94	4.07
Strontium	Sr	0.077	0.16	0.13
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.018	0.13	0.16
Antimony	Sb	L0.001	L0.001	L0.001
rsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.021	0.068	0.036
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	0.012
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	22.8	29.6	28.2
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	0.078
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.82	15.1	5.75
Manganese	Mn	L0.003	L0.003	L0.003
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
ickel	Ni	L0.005	L0.005	L0.005
hosphorus	P04	L0.4	L0.4	L0.4
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	4.88	6.54	6.97
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.25	9.98	4.17
Strontium	Sr	0.080	0.16	0.13
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.02	L0.02	L0.02
Ammonia Nitrogen	N	L0.010	L0.010	L0.010
Total Phenolics as Phenol		0.003	0.003	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	L0.05	0.10

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
TEMPERATURE °F		28.	31.	27.
PHYSICAL TESTS				
pH		8.00	8.30	7.60
Conductivity (micromhos/cm)		185.	245.	64.1
Color [Pt-Co Scale](Co)		5.	20.	10.
Turbidity (NTU)		10.	16.	3.0
Hardness (mg/L)	CaC03	89.	128.	32.
SOLIDS (mg/L)				
Total Suspended		14.0	16.5	2.5
Total Dissolved		150.	223.	58.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	86.3	158.	34.7
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	22.	L1.0	6.0
Nitrates	N	0.18	0.062	0.050
Nitrites	N	0.003	L0.002	L0.002
Total Dissolved Phosphates	P	0.019	0.021	0.010
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	Si02	2.30	5.31	2.18
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.031	0.021	0.14
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.068	0.025	0.020
Beryllium	Be	L0.003	0.011	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	0.024	L0.010
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	25.9	37.8	9.97
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	0.75	0.090
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	5.84	7.96	1.69
Manganese	Mn	L0.003	0.65	0.010
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.43	1.42	0.27
Selenium	Se	L0.001	L0.001	L0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.60	12.0	4.35
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.95	3.35	1.37
Strontium	Sr	0.10	0.13	0.046
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	L0.005	L0.005	L0.005
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	0.002	L0.001
Barium	Ba	0.075	0.077	0.022
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	0.012	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	25.9	39.1	10.1
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.54	3.39	0.27
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	6.01	8.42	1.69
Manganese	Mn	0.015	0.69	0.019
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	6.70	13.6	4.88
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	4.04	3.50	1.40
Strontium	Sr	0.10	0.14	0.046
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	0.007	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.02	L0.02	L0.02
Ammonia Nitrogen	N	L0.010	0.17	L0.010
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.056	2.75	0.24

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
TEMPERATURE °F		27.5	27.	27.
PHYSICAL TESTS				
pH		7.65	7.90	8.10
Conductivity (micromhos/cm)		68.1	98.1	167.
Color [Pt-Co Scale](Co)		5.	15.	5.
Turbidity (NTU)		2.4	4.5	6.0
Hardness (mg/L)	CaCO3	33.	49.	83.
SOLIDS (mg/L)				
Total Suspended		3.0	10.0	19.0
Total Dissolved		57.	89.	143.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	37.6	57.3	86.3
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	SO4	1.5	4.5	18.0
Nitrates	N	0.040	0.060	0.098
Nitrites	N	L0.002	L0.002	0.003
Total Dissolved Phosphates	P	0.019	0.011	0.008
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	SiO2	L0.05	3.42	3.31
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.086	0.072	0.050
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.021	0.034	0.053
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	10.4	15.3	24.7
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.10	0.28	0.077
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	1.68	2.56	5.13
Manganese	Mn	0.017	0.021	0.010
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	PO4	L0.4	L0.4	L0.4
Potassium	K	0.30	0.24	0.37
Selenium	Se	L0.001	L0.001	L0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #				
CLIENT SAMPLE I.D.				
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.51	7.34	5.74
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	1.41	1.88	3.57
Strontium	Sr	0.046	0.075	0.10
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.23	0.16	0.47
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.024	0.037	0.059
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	10.5	15.4	24.7
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.31	0.55	0.56
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	1.73	2.64	5.27
Manganese	Mn	0.026	0.038	0.037
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	5.14	7.75	7.03
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	1.50	1.94	3.70
Strontium	Sr	0.047	0.076	0.11
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.02	L0.02	L0.02
Ammonia Nitrogen	N	L0.010	0.014	L0.010
Total Phenolics as Phenol		0.002	L0.001	0.003
OTHERS (mg/L)				
Ferrous Iron	Fe	0.29	0.53	0.18

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
TEMPERATURE °F		28.	28.	28.
PHYSICAL TESTS				
pH		8.10	8.10	8.00
Conductivity (micromhos/cm)		154.	167.	131.
Color [Pt-Co Scale](Co)		5.	5.	5.
Turbidity (NTU)		3.1	24.	1.2
Hardness (mg/L)	CaC03	80.	83.	70.
SOLIDS (mg/L)				
Total Suspended		6.0	54.0	L0.5
Total Dissolved		137.	146.	112.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	81.3	85.0	78.9
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	3.50	L0.5
Sulfates	S04	19.0	18.5	L1.0
Nitrates	N	0.15	0.16	0.29
Nitrites	N	0.003	0.011	0.003
Total Dissolved Phosphates	P	L0.002	0.016	L0.002
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	Si02	2.55	2.03	L0.05
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.043	0.080	0.008
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.087	0.064	0.19
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	24.2	24.5	19.5
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	4.65	5.24	5.15
Manganese	Mn	L0.003	0.012	L0.003
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.34	0.42	0.22
Selenium	Se	L0.001	L0.001	L0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	4.74	4.68	4.83
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.18	3.98	1.91
Strontium	Sr	0.099	0.090	0.066
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.19	1.39	0.067
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.076	0.083	0.19
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	0.011	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	24.4	25.0	19.5
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.20	1.40	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	4.66	5.46	5.16
Manganese	Mn	0.006	0.029	L0.003
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	5.32	8.95	4.86
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.18	4.09	1.93
Strontium	Sr	0.087	0.095	0.017
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	0.033	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.02	L0.02	L0.02
Ammonia Nitrogen	N	L0.010	L0.010	L0.010
Total Phenolics as Phenol		0.003	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	0.11	L0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

can test ltd.

1523 WEST 3rd AVENUE. VANCOUVER, B.C. V6J 1J8 • TELEPHONE (604) 734-7276 • TELEX 04-54210

Report On: Analysis of water samples

File No.: 2896F

Report No.:

Reported To: Crows Nest Resources

P.O. #: CN21934

P.O. Box 2699, Station "A"

Date: Feb.29/84

Calgary, Alberta T2P 2M7

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on February 21, 1984 and report as follows:

DISCUSSION:

It should be noted that the sample taken from Goat Horn Lower exhibits relatively high total metal concentrations in comparison to samples taken from the same location in the past. The sample was high in turbidity but most impurities were removed via filtration (as indicated in dissolved metal results).

The results obtained for the other samples were consistent with previously generated data.

SAMPLE IDENTIFICATION:

The samples were submitted in plastic bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: FEBRUARY 18-19, 1984
DATE SUBMITTED: FEBRUARY 21, 1984

CTL#	CLIENT I.D.	DESCRIPTION	DATE SAMPLED
2896-1	TH-01	Cabinet Creek	Feb. 18
-2	TH-02	Four Creek	Feb. 19
-3	TH-03	Tenas Creek	Feb. 19
-4	TH-04	Goat Horn Lower	Feb. 19
-5	TH-05	Hubert Creek	Feb. 19
-6	TH-06	Bulkley Upper	Feb. 19
-7	TH-07	Bulkley Upper	Feb. 19
-8	TH-08	Telkwa Upper	Feb. 18
-9	TH-09	Telkwa Lower	Feb. 18
-10	TH-10	Goat Horn Above B.V.C.	Feb. 19
-11	TH-11	Goat Horn Below B.V.C.	Feb. 19
-12	TH-12	Goat Horn Upper	Feb.18
-13	-	Field Blank	-

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AN/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure form the 'Annual Book of ASTM Standards", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

CAN TEST LTD.

Name: Crows Nest Resources
File No: 2896F

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
PHYSICAL TESTS				
pH		7.90	8.20	8.10
Conductivity (micromhos/cm)		145.	310.	199.
Color [Pt-Co Scale](Cu)		L5.	20.	5.
Turbidity (JTU)		0.25	0.46	1.2
Hardness (mg/L)	CaC03	68.	149.	97.
SOLIDS (mg/L)				
Total Suspended		1.5	L0.5	2.5
Total Dissolved		116.	267.	174.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	69.0	173.	118.
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	14.	28.0	9.5
Nitrates	N	0.12	0.15	0.24
Nitrites	N	0.003	0.003	0.003
Total Dissolved Phosphates	P	L0.002	L0.002	L0.002
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	Si02	5.30	7.29	7.78
DISSOLVED METALS (mg/L)				
Aluminum	Al	L0.005	0.028	0.037
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.020	0.073	0.036
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	22.6	32.0	28.9
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.72	16.4	5.87
Manganese	Mn	L0.003	L0.003	0.004
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.40	0.65	0.31
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	4.96	6.85	6.68

RESULTS OF TESTING: (CON'T)

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DISSOLVED METALS (mg/L) (CON'T)				
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.34	11.0	4.39
Strontium	Sr	0.077	0.17	0.13
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.012	0.041	0.086
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.020	0.074	0.038
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	22.8	32.9	30.2
Chromium	Cr	L0.001	L0.001	0.002
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	0.083
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.80	16.6	6.10
Manganese	Mn	L0.003	L0.003	0.005
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	5.25	7.20	7.49
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.40	11.0	4.57
Strontium	Sr	0.077	0.18	0.14
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.02	L0.02	L0.02
Ammonia Nitrogen	N	0.040	0.021	0.024
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	L0.05	L0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
PHYSICAL TESTS				
pH		8.10	8.10	6.30
Conductivity (micromhos/cm)		183.	309.	10.1
Colour [Pt-Co Scale](CU)		L5.	15.	L5.
Turbidity (JTU)		95.	18.	1.4
Hardness (mg/L)	CaCO3	85.	166.	3.
SOLIDS (mg/L)				
Total Suspended		124.	14.0	1.5
Total Dissolved		148.	292.	10.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	86.3	207.	4.31
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	SO4	21.5	4.0	3.5
Nitrates	N	0.25	0.052	0.017
Nitrites	N	L0.002	L0.002	0.005
Total Dissolved Phosphates	P	0.041	0.035	0.020
ortho-Phosphates	P	L0.002	0.010	0.015
Silica	SiO2	7.49	17.3	1.12
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.018	0.021	0.013
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.061	0.071	0.004
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	25.1	49.3	0.99
Chromium	Cr	0.014	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	0.23	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	5.36	10.1	0.17
Manganese	Mn	0.006	0.92	0.009
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	PO4	L0.4	L0.4	L0.4
Potassium	K	0.46	1.16	0.35
Selenkum	Se	L0.001	L0.001	L0.001
Silicon	SiO2	4.85	16.2	L0.080

RESULTS OF TESTING: (CON'T)

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DISSOLVED METALS (mg/L) (CON'T)				
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	4.06	4.44	0.41
Strontium	Sr	0.096	0.17	0.057
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	10.2	0.24	0.057
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	0.003	0.001	L0.001
Barium	Ba	0.16	0.086	0.005
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	26.7	50.5	1.08
Chromium	Cr	0.014	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	7.33	3.36	0.092
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	7.54	10.3	0.19
Manganese	Mn	0.16	0.98	0.011
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	10.005
Phosphorus	P04	0.42	L0.4	L0.4
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	45.3	17.3	0.38
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	4.74	4.47	0.42
Strontium	Sr	0.11	0.17	0.005
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	0.40	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	0.022	L0.005	0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.16	0.063	0.035
Ammonia Nitrogen	N	0.071	0.28	0.045
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.77	2.72	L0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

CAN TEST LTD.

Name: Crows Nest Resources
File No: 2896F

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
PHYSICAL TESTS				
pH		7.85	7.90	8.10
Conductivity (micromhos/cm)		112.	110.	146.
Colour [Pt-Co Scale](CU)		5.	5.	L5.
Turbidity (JTU)		0.80	0.15	1.0
Hardness (mg/L)	CaC03	45.	52.	69.
SOLIDS (mg/L)				
Total Suspended		1.0	4.5	3.0
Total Dissolved		87.	96.	124.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	61.6	59.1	74.0
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	1.0	7.0	14.
Nitrates	N	0.24	0.31	0.41
Nitrites	N	0.004	0.004	0.003
Total Dissolved Phosphates	P	L0.002	L0.002	L0.002
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	Si02	6.59	8.15	7.12
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.010	0.015	0.010
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.029	0.037	0.046
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	14.3	16.3	21.0
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.068	0.25	0.16
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.31	2.71	3.99
Manganese	Mn	0.072	0.015	0.011
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.53	0.36	0.39
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	5.22	7.60	6.66

RESULTS OF TESTING: (CON'T)

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-10
DISSOLVED METALS (mg/L) (CON'T)				
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	1.73	1.99	2.97
Strontium	Sr	0.057	0.079	0.091
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.036	0.054	0.054
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.034	0.039	0.048
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	16.9	16.7	21.5
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.19	0.42	0.25
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.74	2.73	4.01
Manganese	Mn	0.088	0.022	0.016
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	6.67	8.08	7.05
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.06	2.08	3.03
Strontium	Sr	0.069	0.080	0.093
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.02	L0.02	L0.02
Ammonia Nitrogen	N	0.050	0.028	0.025
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.20	0.42	0.25

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
PHYSICAL TESTS				
pH		8.00	8.00	7.80
Conductivity (micromhos/cm)		160.	173.	132.
Color [Pt-Co Scale](CU)		L5.	L5.	L5.
Turbidity (JTU)		0.62	0.34	0.32
Hardness (mg/L)	CaCO3	76.	80.	64.
SOLIDS (mg/L)				
Total Suspended		2.5	1.5	3.5
Total Dissolved		132.	140.	110.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	78.9	81.3	73.9
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	SO4	21.0	21.0	5.0
Nitrates	N	0.63	0.092	0.14
Nitrites	N	0.003	0.003	0.003
Total Dissolved Phosphates	P	L0.002	L0.002	L0.002
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	SiO2	5.07	5.01	4.85
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.012	0.017	0.008
\ntimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.070	0.066	0.17
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	23.4	23.6	18.1
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	0.039	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	4.20	4.92	4.48
Manganese	Mn	L0.003	0.008	L0.003
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	PO4	L0.4	L0.4	L0.4
Potassium	K	0.42	0.46	0.36
Selenium	Se	L0.001	L0.001	L0.001
Silicon	SiO2	4.75	4.79	4.56

RESULTS OF TESTING: (CON'T)

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DISSOLVED METALS (mg/L) (CON'T)				
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.32	3.98	1.95
Strontium	Sr	0.080	0.084	0.060
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.040	0.026	0.015
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.073	0.067	0.18
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	23.9	24.2	18.7
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.042	0.055	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	4.31	4.99	4.65
Manganese	Mn	L0.003	0.009	L0.003
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Selenium	Se	L0.001	L0.001	L0.001
Silicon	SiO_2	5.17	4.95	4.76
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.47	4.30	2.01
Strontium	Sr	0.082	0.086	0.063
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	0.005	0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.02	L0.02	L0.02
Ammonia Nitrogen	N	0.040	0.028	0.021
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.05	0.10	L0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		-
CLIENT SAMPLE I.D.		Field Blank
PHYSICAL TESTS		
pH		-
Conductivity (micromhos/cm)		-
Color [Pt-Co Scale](CU)		-
Turbidity (JTU)		-
Hardness (mg/L)	CaC03	-
SOLIDS (mg/L)		
Total Suspended		-
Total Dissolved		-
DISSOLVED ANIONS (mg/L)		
Alkalinity: Bicarbonate	HC03	-
Alkalinity: Carbonate	C03	-
Alkalinity: Hydroxide	OH	-
Chlorides	Cl	-
Sulfates	S04	-
Nitrates	N	-
Nitrites	N	-
Total Dissolved Phosphates	P	-
ortho-Phosphates	P	-
Silica	Si02	-
DISSOLVED METALS (mg/L)		
Aluminum	Al	0.008
Antimony	Sb	L0.001
Arsenic	As	L0.001
Barium	Ba	0.002
Beryllium	Be	L0.003
Bismuth	Bi	L0.5
Boron	B	L0.01
Cadmium	Cd	L0.001
Calcium	Ca	0.53
Chromium	Cr	L0.001
Cobalt	Co	L0.005
Copper	Cu	L0.001
Iron	Fe	L0.030
Lead	Pb	L0.001
Magnesium	Mg	0.23
Manganese	Mn	L0.003
Molybdenum	Mo	L0.005
Nickel	Ni	L0.005
Phosphorus	P04	L0.4
Potassium	K	0.11
Selenium	Se	L0.001
Silicon	Si02	L0.080

RESULTS OF TESTING: (CON'T)

SAMPLE #		-
CLIENT SAMPLE I.D.		Field Blank
DISSOLVED METALS (mg/L) (CON'T)		
Silver	Ag	L0.005
Sodium	Na	0.36
Strontium	Sr	0.003
Tin	Sn	L0.03
Titanium	Ti	L0.006
Vanadium	V	L0.01
Zinc	Zn	L0.005
TOTAL METALS (mg/L)		
Aluminum	Al	L0.005
Antimony	Sb	L0.001
Arsenic	As	L0.001
Barium	Ba	L0.001
Beryllium	Be	L0.003
Bismuth	Bi	L0.5
Boron	B	L0.01
Cadmium	Cd	L0.001
Calcium	Ca	0.040
Chromium	Cr	L0.001
Cobalt	Co	L0.005
Copper	Cu	L0.001
Iron	Fe	L0.030
Lead	Pb	L0.001
Magnesium	Mg	0.005
Manganese	Mn	L0.003
Mercury	Hg	L0.00005
Molybdenum	Mo	L0.005
Nickel	Ni	L0.005
Phosphorus	P04	L0.4
Selenium	Se	L0.001
Silicon	Si02	L0.080
Silver	Ag	L0.005
Sodium	Na	0.12
Strontium	Sr	L0.001
Tin	Sn	L0.03
Titanium	Ti	L0.006
Vanadium	V	L0.01
Zinc	Zn	L0.005

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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Report On: Analysis of water samples

File No.: 2540F

Report No.:

Reported To: Crows Nest Resources

P.O. #: CN21934

P.O. Box 2699, Station "A"

Date: Feb.6/84

Calgary, Alberta T2P 2M7

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on January 17, 1984 and report as follows:

DISCUSSION:

As in the last sample set, the temperature of the water when the sample was taken is assumed to be 0°C.

Although most results are consistant with earlier data it should be noted that trace amounts of mercury were detected in the samples taken from the Bulkley Upper and Telkwa Upper (2540-7 and 8).

SAMPLE IDENTIFICATION:

The samples were submitted in plastic bottles and identified as follows:

PROJECT NAME: TELKWA
DATE SAMPLED: JANUARY 14-15, 1984
DATE SUBMITTED: JANUARY 17, 1984

CTL#	CLIENT I.D.	DESCRIPTION
2351-1	TH-01	Cabinet Creek
-2	TH-02	Four Creek
-3	TH-03	Tenas Creek
-4	TH-04	Goat Horn Lower
-5	TH-05	Hubert Creek
-6	TH-06	Bulkley Upper
-7	TH-07	Bulkley Upper
-8	TH-08	Telkwa Upper
-9	TH-09	Telkwa Lower
-10	TH-10	Goat Horn Above B.V.C.
-11	TH-11	Goat Horn Below B.V.C.
-12	TH-12	Goat Horn Upper

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AN/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered,H2S04
Nutrients	Plastic	H2S04
Phenols	Amber Glass	CuS04, H3P04
Ferrous Iron	Plastic	NH4C2N3O2 o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HN03
Total Metals	Plastic	HN03

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure form the 'Annual Book of ASTM Standards", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

CAN TEST LTD.

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RESULTS OF TESTING:

SAMPLE #		2540-1	2540-2	2540-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DATE SAMPLED:		14-01-84	14-01-84	15-01-84
PHYSICAL TESTS				
pH		7.20	8.00	7.70
Conductivity (micromhos/cm)		141.	389.	194.
Turbidity (NTU)		0.75	2.3	1.0
Color (CU)		L5.	30.	5.
Hardness (mg/L)	CaC03	63.	167.	95.
SOLIDS (mg/L)				
Total Suspended		L0.5	1.0	1.5
tal Dissolved		115.	319.	177.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	64.2	199.	121.
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	18.0	28.0	8.5
Nitrates	N	0.18	0.090	0.10
Nitrites	N	0.003	L0.002	L0.002
Total Dissolved Phosphates	P	0.030	0.018	0.031
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	Si02	3.09	4.91	4.38
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.015	0.046	0.032
timony	Sb	L0.001	L0.001	L0.001
senic	As	L0.001	L0.001	L0.001
Barium	Ba	0.021	0.086	0.036
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.010	L0.010	0.019
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	21.4	36.3	28.2
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.66	18.2	5.71
Manganese	Mn	L0.003	L0.003	0.004
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.40	L0.40	L0.40
Potassium	K	0.31	0.80	0.25
Selenium	Se	L0.001	L0.001	L0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		2540-1	2540-2	2540-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DATE SAMPLED:		14-01-84	14-01-84	15-01-84
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	3.02	4.87	4.20
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.12	11.1	4.12
Strontium	Sr	0.074	0.20	0.13
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	0.005	L0.005
TOTAL METALS (mg/L)				
luminum	Al	0.032	0.085	0.067
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.021	0.086	0.036
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.010	L0.010	0.021
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	21.4	36.5	28.3
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	0.039
Lead	Pb	L0.001	L0.001	0.001
Magnesium	Mg	2.67	18.3	5.75
Manganese	Mn	L0.003	L0.003	0.005
ercury	Hg	L0.00005	L0.00005	L0.00005
olybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.40	L0.40	L0.40
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	2.99	4.91	4.26
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.14	11.1	4.19
Strontium	Sr	0.074	0.20	0.13
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	0.010	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.035	L0.02	0.041
Ammonia Nitrogen	N	0.27	0.37	0.11
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	L0.05	L0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		2540-4	2540-5	2540-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DATE SAMPLED:		15-01-84	15-01-84	15-01-84
PHYSICAL TESTS				
pH		7.65	7.50	7.25
Conductivity (micromhos/cm)		180.	327.	70.9
Turbidity (NTU)		1.00	18.	1.6
Color (CU)		5.	26.	5.
Hardness (mg/L)	CaC03	80.	174.	31.
SOLIDS (mg/L)				
Total Suspended		1.0	11.0	1.0
Total Dissolved		150.	310.	61.
SSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	85.3	219.	38.7
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	26.0	3.0	3.5
Nitrates	N	0.20	0.056	0.020
Nitrites	N	0.005	0.007	L0.002
Total Dissolved Phosphates	P	0.015	0.040	0.007
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	Si02	2.99	9.00	3.15
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.006	0.013	0.016
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
[illegible]rium	Ba	0.064	0.075	0.022
[illegible]eryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.010	L0.010	L0.010
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	23.6	50.8	9.95
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	0.24	0.041
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	5.01	11.1	1.45
Manganese	Mn	0.003	1.06	0.006
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.40	L0.40	L0.40
Potassium	K	0.40	1.20	0.31
Selenium	Se	L0.001	L0.001	L0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		2540-4	2540-5	2540-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DATE SAMPLED:		15-01-84	15-01-84	15-01-84
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	2.82	10.9	2.48
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.48	4.53	1.40
Strontium	Sr	0.089	0.18	0.043
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.040	0.22	0.072
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	0.001	L0.001
Barium	Ba	0.067	0.083	0.022
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.010	L0.010	L0.010
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	24.1	50.9	9.97
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	2.80	0.069
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	5.22	11.2	1.47
Manganese	Mn	0.003	1.06	0.006
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.40	L0.40	L0.40
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	2.88	11.01	2.51
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.69	4.76	1.41
Strontium	Sr	0.092	0.18	0.043
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.02	0.040	L0.02
Ammonia Nitrogen	N	0.093	0.31	0.21
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	3.04	0.064

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		2540-7	2540-8	2540-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DATE SAMPLED:		15-01-84	14-01-84	14-01-84
PHYSICAL TESTS				
pH		7.20	7.50	7.45
Conductivity (micromhos/cm)		76.3	115.	114.
Turbidity (NTU)		1.2	2.2	1.6
Color (CU)		5.	5.	5.
Hardness (mg/L)	CaC03	31.	52.	52.
SOLIDS (mg/L)				
Total Suspended		1.0	2.5	L0.5
Total Dissolved		62.	113.	102.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	38.1	76.5	64.4
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	5.0	6.5	6.5
Nitrates	N	0.050	0.070	0.12
Nitrites	N	L0.002	L0.002	0.003
Total Dissolved Phosphates	P	0.028	0.025	0.006
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	Si02	2.41	4.48	4.44
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.015	0.047	0.025
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.021	0.039	0.039
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.010	L0.010	L0.010
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	9.83	16.2	16.2
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.038	0.17	0.15
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	1.40	2.62	2.63
Manganese	Mn	0.005	0.009	0.008
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.40	L0.40	L0.40
Potassium	K	0.32	0.30	0.30
Selenium	Se	L0.001	L0.001	L0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		2540-7	2540-8	2540-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DATE SAMPLED:		15-01-84	14-01-84	14-01-84
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	2.47	4.47	4.52
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	1.36	1.96	1.96
Strontium	Sr	0.042	0.079	0.079
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.068	0.097	0.074
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.021	0.039	0.039
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.010	L0.010	L0.010
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	9.90	16.2	16.3
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.070	0.26	0.24
Lead	Pb	L0.001	L0.001	L0.001
gnesium	Mg	1.41	2.63	2.65
anganese	Mn	0.006	0.011	0.008
Mercury	Hg	0.00005	0.00006	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.40	L0.40	L0.40
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	2.48	4.48	4.52
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	1.37	1.97	1.99
Strontium	Sr	0.042	0.079	0.079
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.030	0.027	L0.02
Ammonia Nitrogen	N	0.046	0.23	0.25
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.070	0.30	0.26

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		2540-10	2540-11	2540-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DATE SAMPLED:		14-01-84	14-01-84	14-01-84
PHYSICAL TESTS				
pH		7.70	7.60	7.60
Conductivity (micromhos/cm)		152.	164.	120.
Turbidity (NTU)		0.90	1.3	1.8
Color (CU)		5.	5.	5.
Hardness (mg/L)	CaC03	71.	75.	62.
SOLIDS (mg/L)				
Total Suspended		1.5	1.0	5.0
Total Dissolved		131.	136.	107.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	77.6	80.6	76.5
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	17.5	18.0	1.0
Nitrates	N	0.19	0.060	0.060
Nitrites	N	L0.002	L0.002	0.005
Total Dissolved Phosphates	P	0.022	0.019	0.009
ortho-Phosphates	P	L0.002	L0.002	L0.002
Silica	Si02	3.20	3.39	3.09
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.014	0.010	0.032
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.070	0.064	0.17
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.010	L0.010	L0.010
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	21.9	22.3	17.5
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	3.94	4.55	4.42
Manganese	Mn	L0.003	0.008	0.003
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.40	L0.40	L0.40
Potassium	K	0.33	0.39	0.24
Selenium	Se	L0.001	L0.001	L0.001

RESULTS OF TESTING: (CON'T)

SAMPLE #		2540-10	2540-11	2540-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DATE SAMPLED:		14-01-84	14-01-84	14-01-84
DISSOLVED METALS (mg/L) (CON'T)				
Silicon	Si02	2.85	2.81	2.67
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.90	3.43	1.82
Strontium	Sr	0.078	0.081	0.059
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.037	0.043	0.042
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.070	0.064	0.17
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.010	L0.010	L0.010
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	22.1	22.4	17.5
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	0.035	L0.030
Lead	Pb	L0.001	L0.001	L0.001
gnesium	Mg	3.97	4.56	4.46
Manganese	Mn	L0.003	0.008	L0.003
Mercury	Hg	L0.00005	0.00010	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.40	L0.40	L0.40
Selenium	Se	L0.001	L0.001	L0.001
Silicon	Si02	2.86	2.81	2.68
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.93	3.44	1.86
Strontium	Sr	0.078	0.081	L0.030
Tin	Sn	L0.030	L0.030	L0.030
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.028	L0.02	L0.02
Ammonia Nitrogen	N	0.028	0.20	0.14
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	L0.05	0.060

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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Report On Analysis of water samples

File No. 2351F

Reported To Crows Nest Resources
P.O. Box 2699, Station "A"
Calgary, Alberta T2P 2M7

Report No. 22372

P.O. #

Date Jan.26/84

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on December 21, 1983 and report as follows:

DISCUSSION:

In discussion with field personal, it was decided that the temperature of the samples can be assumed to be 0 C.

In general, the results obtained for this months samples are consistent with previously generated data. Minor discrepancies between total and dissolved metals appear periodically. Since these differences are minute and have no definite pattern, it is impossible to determine if they can be attributed to field problems or incorrect laboratory procedures.

As discussed, a field prepared blank would be an asset in determining possible sources of error.

SAMPLE IDENTIFICATION:

PROJECT NAME: TELKWA
DATE SAMPLED: DECEMBER 17-19, 1983

CTL#	CLIENT I.D.	DESCRIPTION
2351-F	TH-01	Cabinet Creek
-2	TH-02	Four Creek
-3	TH-03	Tenas Creek
-4	TH-04	Goat Horn Lower
-5	TH-05	Hubert Creek
-6	TH-06	Bulkley Upper
-7	TH-07	Bulkley Upper
-8	TH-08	Telkwa Upper
-9	TH-09	Telkwa Lower
-10	TH-10	Goat Horn Above B.V.C.
-11	TH-11	Goat Horn Below B.V.C.
-12	TH-12	Goat Horn Upper

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AN/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber Glass	Filtered H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure form the 'Annual Book of ASTM Standards", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist
Water Analysis Laboratory

DME/cs

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RESULTS OF TESTING:

SAMPLE #		2351-1	2351-2	2351-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
PHYSICAL TESTS				
pH		7.20	7.55	7.75
Conductivity (micromhos/cm)		137.	317.	207.
Turbidity (JTU)		0.65	40.	0.85
Hardness (mg/L)	CaC03	60.0	150.	94.5
SOLIDS (mg/L)				
Total Suspended		L0.5	130.	L0.5
Total Dissolved		121.	308.	200.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	67.2	159.	136.
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	2.0
Sulfates	SO4	24.5	44.0	12.0
Nitrates	N	0.11	0.15	0.10
Nitrites	N	L0.002	0.003	0.003
Total Dissolved Phosphates	P	0.029	0.042	-*
ortho-Phosphates	P	0.006	0.002	-*
Silica	Si02	5.11	6.59	7.55
DISSOLVED METALS (mg/L)				
Aluminum	Al	L0.005	0.023	L0.005
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.019	0.076	0.037
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	0.040	0.030	0.034 *
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	20.0	33.0	28.3
Chromium	Cr	L0.001	0.003	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.36	16.0	5.65
Manganese	Mn	L0.003	0.004	0.004
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.31	0.52	0.23
Silicon	Si02	4.50	6.49	6.46
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	1.82	8.73 *	3.84

RESULTS OF TESTING: (CON'T)

SAMPLE #		2351-1	2351-2	2351-3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DISSOLVED METALS (mg/L) (CON'T)				
Strontium	Sr	0.070	0.19*	0.13
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	0.010	0.008	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.032	0.25	L0.005
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
B um	Ba	0.020	0.07	0.038
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	0.035	0.034
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	21.2	37.2	29.5
Chromium	Cr	L0.001	0.007	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	0.003	L0.001
Iron	Fe	L0.030	0.19	0.034
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.57	16.3	5.93
Manganese	Mn	L0.003	0.011	0.004
Mercury	Hg	L0.00005	L0.00005	0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
S. .con	Si02	4.81	7.39	6.77
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	1.97	8.73 *	4.03
Strontium	Sr	0.075	0.19 *	0.14
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	0.008	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	0.013	0.006	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.030	0.080	0.050
Ammonia Nitrogen	N	0.38	0.021	0.033
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	0.12	L0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected
* = results unobtainable due to bottle breakage and sample loss upon receipt.

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RESULTS OF TESTING:

SAMPLE #		2351-4	2351-5	2351-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
PHYSICAL TESTS				
pH		7.75	7.55	7.30
Conductivity (micromhos/cm)		185.	320.	81.9
Turbidity (JTU)		0.55	15.	1.0
Hardness (mg/L)	CaCO3	80.0	176.	35.0
SOLIDS (mg/L)				
Total Suspended		L0.5	23.0	L0.5
Total Dissolved		161.	270.	79.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	97.7	223.	45.7
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	0.5	L0.5
Sulfates	SO4	26.4	18.0	8.5
Nitrates	N	0.16	0.053	0.060
Nitrites	N	L0.002	0.007	L0.002
Total Dissolved Phosphates	P	L0.001	L0.001	0.018
ortho-Phosphates	P	L0.001	L0.001	L0.001
Silica	SiO2	5.20	17.5	4.84
DISSOLVED METALS (mg/L)				
Aluminum	Al	L0.005	L0.005	L0.005
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.066	0.074	0.023
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	0.015	0.018	0.018
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	23.6	49.7	11.1
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	0.61	0.038
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	5.00	12.3	1.63
Manganese	Mn	L0.003	0.74	0.004
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	PO4	L0.4	L0.4	L0.4
Potassium	K	0.37	1.18	0.38
Silicon	SiO2	4.62	17.6	4.37
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.27	4.91	1.40

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RESULTS OF TESTING: (CON'T)

SAMPLE #		2351-4	2351-5	2351-6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DISSOLVED METALS (mg/L) (CON'T)				
Strontium	Sr	0.090	0.19 *	0.048
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.021	0.13	0.050
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	0.001	L0.001
Barium	Ba	0.068	0.080	0.024
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	0.029	0.019
Boron	B	0.020	0.029	0.019
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	24.2	49.7	11.5
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	3.17	0.078
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	5.12	12.6	1.66
Manganese	Mn	L0.003	0.74 *	0.005
Mercury	Hg	0.00008	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Silicon	Si02	4.83	17.7	4.64
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.31	4.96	1.44
Strontium	Sr	0.091	0.19 *	0.049
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.020	0.060	L0.020
Ammonia Nitrogen	N	0.033	0.14	0.022
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.086	3.17	0.075

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		2351-7	2351-8	2351-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
PHYSICAL TESTS				
pH		7.25	7.30	7.50
Conductivity (micromhos/cm)		87.0	111.	114.
Turbidity (JTU)		1.1	40.	1.5
Hardness (mg/L)	CaC03	38.0	50.0	157.
SOLIDS (mg/L)				
Total Suspended		L0.5	101.	0.5
Total Dissolved		79.	101.	109.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	49.7	64.1	64.7
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	4.0
Sulfates	S04	9.0	10.0	11.0
Nitrates	N	L0.010	0.067	0.052
Nitrites	N	L0.002	0.003	0.007
Total Dissolved Phosphates	P	L0.001	0.004	L0.001
ortho-Phosphates	P	L0.001	0.004	L0.001
Silica	Si02	5.01	8.24	7.30
DISSOLVED METALS (mg/L)				
Aluminum	Al	L0.005	0.023	0.013
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.024	0.037	0.039
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	0.015	0.019	0.011
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	12.0	15.6	16.7
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.072	0.10	0.11
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	1.88	2.53	2.75
Manganese	Mn	0.023	0.010	0.011
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.40	0.32	0.36
Silicon	Si02	4.62	6.55	6.90
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	1.50	1.76	1.95

RESULTS OF TESTING: (CON'T)

SAMPLE #		2351-7	2351-8	2351-9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DISSOLVED METALS (mg/L) (CON'T)				
Strontium	Sr	0.051	0.076	0.082
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.056	0.61	0.38
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.027	0.044	0.039
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	0.016	0.036	0.013
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	12.6	15.8	16.7
Chromium	Cr	L0.001	0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	0.006	L0.001
Iron	Fe	0.15	0.66	0.16
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	1.96	2.73	2.75
Manganese	Mn	0.023	0.043	0.001
Mercury	Hg	L0.00005	0.00009	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Silicon	Si02	5.01	8.26	6.90
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	1.56	1.86	2.72
Strontium	Sr	0.053	0.078	0.082
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	0.025	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	0.026	L0.003
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.040	0.11	L0.020
Ammonia Nitrogen	N	0.025	0.025	0.023
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	0.19	0.32	0.18

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		2351-10	2351-11	2351-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
PHYSICAL TESTS				
pH		7.30	7.35	7.40
Conductivity (micromhos/cm)		157.	166.	124.
Turbidity (JTU)		0.70	0.55	0.60
Hardness (mg/L)	CaCO3	74.0	77.5	59.0
SOLIDS (mg/L)				
Total Suspended		0.5	L0.5	1.0
Total Dissolved		114.	120.	110.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	79.2	83.7	73.6
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	1.0
Sulfates	SO4	22.3	24.2	8.1
Nitrates	N	0.10	0.18	0.17
Nitrites	N	L0.002	0.007	L0.002
Total Dissolved Phosphates	P	0.006	L0.001	L0.001
ortho-Phosphates	P	0.002	L0.001	L0.001
Silica	SiO2	[4.60]	[4.70]	[3.82]
DISSOLVED METALS (mg/L)				
Aluminum	Al	L0.005	L0.005	L0.005
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.075	0.069	0.17
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	0.012	0.016	0.016
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	22.7	23.1	16.4
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	0.037	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	4.12	4.70	4.22
Manganese	Mn	L0.003	0.008	L0.003
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	PO4	L0.4	L0.4	L0.4
Potassium	K	0.33	0.36	0.26
Silicon	SiO2	[4.43]	[4.46]	[4.02]
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.15	3.39	1.55

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RESULTS OF TESTING: (CON'T)

SAMPLE #		2351-10	2351-11	2351-12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DISSOLVED METALS (mg/L) (CON'T)				
Strontium	Sr	0.084	0.084	0.056
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.021	0.018	0.017
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.075	0.069	0.18
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	0.022	0.016	0.016
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	22.7	23.5	17.2
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	0.039	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	4.16	4.84	4.46
Manganese	Mn	L0.003	0.009	L0.003
Mercury	Hg	0.00010	L0.00005	0.00010
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Silicon	Si02	4.47	4.53	4.25
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.18	3.39	1.64
Strontium	Sr	0.084	0.086	0.059
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	10.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.030	0.030	0.030
Ammonia Nitrogen	N	0.020	0.013	0.034
Total Phenolics as Phenol		L0.001	L0.001	0.003
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	L0.05	L0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detectedg

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Report On: Analysis of water samples

File No.: 2076F

Report No.:

Reported To: Crows Nest Resources
P.O. Box 2699, Station "A"
Calgary, Alberta T2P 2M7

P.O. #: 22372

Date: Dec.19/83

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on November 23, 1983 and report as follows:

DISCUSSION:

The temperature could not be taken for all of the samples due to problems encountered in the field.

The samples were collected from each site in bulk and then cut, filtered (if necessary) and preserved accordingly at a more desirable location. This sampling procedure seems to have had no effect upon the final results. Minor changes in various parameters may be due to a change in water chemistry created by the fall in temperature.

SAMPLE IDENTIFICATION:

PROJECT NAME: TELKWA
DATE SAMPLED: November 20-21, 1983

CTL#	CLIENT I.D.	DESCRIPTION	TEMP °C
2076-1	TH-01	Cabinet Creek	-
-2	TH-02	Four Creek	0.5
-3	TH-03	Tenas Creek	-
-4	TH-04	Goat Horn Lower	-
-5	TH-05	Hubert Creek	1.8
-6	TH-06	Bulkley Upper	1.8
-7	TH-07	Bulkley Lower	1.8
-8	TH-08	Telkwa Upper	-
-9	TH-09	Telkwa Lower	0.8
-10	TH-10	Goat Horn Above B.V.C	0.05
-11	TH-11	Goat Horn Below B.V.C.	0.05
-12	TH-12	Goat Horn Upper	0.2

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AND/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level) phosphates)	Amber glass	Filtered H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber Glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$ o-Phenanthroline
Dissolved Metals	Plastic	Filtered, HNO_3
Total Metals	Plastic	HNO_3

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 and 15th Edition, 1980, published by the American Public Health Association.

The metals were determined using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the 'Annual Book of ASTM Standards", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist

DME/cs

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RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
PHYSICAL TESTS				
pH		7.25	7.75	7.80
Conductivity (micromhos/cm)		146.	193.	200.
Turbidity (JTU)		0.55	1.8	1.1
Hardness (mg/L)	CaC03	67.	93.	103.
SOLIDS (mg/L)				
Total Suspended		L0.5	L0.5	1.0
Total Dissolved		117.	169.	182.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	65.3	110.	120.
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	1.00	L0.5
Sulfates	S04	17.9	11.0	10.7
Nitrates	N	0.088	0.025	0.021
Nitrites	N	0.002	L0.002	L0.002
Total Dissolved Phosphates	P	L0.001	0.003	L0.001
ortho-Phosphates	P	L0.001	L0.001	L0.001
Silica	Si02	6.53	9.73	9.30
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.015	0.015	0.092
Antimony	Sb	L0.001	L0.001	L0.001
[illegible]senic	As	L0.001	L0.001	L0.001
[illegible]rium	Ba	0.022	0.052	0.042
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	0.016	0.031
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	22.3	20.4	30.9
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	0.095	0.16
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.76	9.90	6.17
Manganese	Mn	L0.003	0.003	0.010
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.35	0.36	0.24
Silicon	Si02	5.47	6.65	7.70
Silver	Ag	L0.005	L0.005	L0.002
Sodium	Na	2.20	6.98	4.56

RESULTS OF TESTING: (CON'T)

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
Strontium	Sr	0.079	0.12	0.15
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.019	0.20	0.16
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.022	0.053	0.042
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	0.016	0.019
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	22.4	20.5	31.1
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	0.001	0.001
Iron	Fe	L0.030	0.13	0.20
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	2.79	9.91	6.18
Manganese	Mn	L0.003	0.004	0.011
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	0.009	L0.005	0.010
Phosphorus	P04	L0.4	L0.4	L0.4
Silicon	Si02	5.49	6.92	7.73
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.29	7.09	4.66
Strontium	Sr	0.079	0.12	0.15
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.034	0.033	0.030
Ammonia Nitrogen	N	0.073	0.020	0.037
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	0.27	0.50

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
PHYSICAL TESTS				
pH		7.65	7.70	6.65
Conductivity (micromhos/cm)		172.	208.	67.1
Turbidity (JTU)		0.70	2.7	1.1
Hardness (mg/L)	CaC03	82.	112.	31.
SOLIDS (mg/L)				
Total Suspended		1.0	3.5	1.0
Total Dissolved		141.	194.	60.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	82.0	136.	35.9
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	19.2	L1.0	4.8
Nitrates	N	0.11	L0.010	0.029
Nitrites	N	L0.002	L0.002	L0.002
Total Dissolved Phosphates	P	L0.001	0.005	0.010
ortho-Phosphates	P	L0.001	0.005	L0.001
Silica	Si02	6.96	13.6	5.47
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.013	0.010	0.024
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.072	0.047	0.022
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	0.010	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	24.8	30.6	9.98
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	0.68	0.53
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	5.16	8.35	1.44
Manganese	Mn	L0.003	0.21	0.008
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.36	1.25	0.32
Silicon	Si02	5.50	12.8	4.17
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.42	3.96	1.39

RESULTS OF TESTING: (CON'T)

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
Strontium	Sr	0.096	0.12	0.044
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.034	0.033	0.080
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.073	0.050	0.023
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	25.2	31.0	10.1
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	1.19	0.095
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	5.28	8.51	1.45
Manganese	Mn	L0.003	0.21	0.010
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Silicon	Si02	5.38	13.3	4.28
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	3.56	4.13	1.40
Strontium	Sr	0.098	0.12	0.045
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.020	0.066	L0.020
Ammonia Nitrogen	N	0.032	0.058	0.023
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	1.90	0.39

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

CAN TEST LTD.

Name: Crows Nest
File No: 2076F

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
PHYSICAL TESTS				
pH		7.55	7.30	7.55
Conductivity (micromhos/cm)		142.	103.	164.
Turbidity (JTU)		2.2	3.5	3.3
Hardness (mg/L)	CaC03	74.	47.	77.
SOLIDS (mg/L)				
Total Suspended		3.0	10.0	23.0
Total Dissolved		136.	94.	139.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	89.7	58.9	84.5
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	5.0	7.0	14.9
Nitrates	N	L0.010	0.042	0.054
Nitrites	N	L0.002	L0.002	L0.002
Total Dissolved Phosphates	P	L0.001	L0.001	L0.001
ortho-Phosphates	P	L0.001	L0.001	L0.001
Silica	Si02	10.6	9.09	8.03
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.012	0.021	0.015
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.038	0.038	0.054
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	0.010
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	21.1	14.9	23.3
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.43	0.21	0.038
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	5.05	2.38	4.57
Manganese	Mn	0.12	0.038	0.015
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.74	0.26	0.32
Silicon	Si02	8.50	7.66	6.14
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.82	1.69	2.83

RESULTS OF TESTING: (CON'T)

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
Strontium	Sr	0.088	0.075	0.092
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.10	0.11	0.11
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
Barium	Ba	0.039	0.039	0.056
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	21.3	15.0	23.3
Chromium	Cr	L0.001	L0.001	L0.001
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	0.66	0.33	0.11
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	5.06	2.40	4.59
Manganese	Mn	0.12	0.039	0.025
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Silicon	Si02	8.65	7.80	6.31
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.83	1.71	2.90
Strontium	Sr	0.088	0.075	0.092
Tin	Sn	0.03	0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.066	0.071	0.029
Ammonia Nitrogen	N	0.036	0.026	0.032
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	1.37	0.62	0.35

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
PHYSICAL TESTS				
pH		7.65	7.70	7.45
Conductivity (micromhos/cm)		145.	149.	118.
Turbidity (JTU)		0.50	0.69	0.48
Hardness (mg/L)	CaC03	66.	66.	56.
SOLIDS (mg/L)				
Total Suspended		L0.5	L0.5	L0.5
Total Dissolved		118.	125.	104.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HC03	71.7	74.3	71.7
Alkalinity: Carbonate	C03	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	L0.5	L0.5	L0.5
Sulfates	S04	13.6	15.5	4.9
Nitrates	N	0.094	0.073	0.12
Nitrites	N	L0.002	L0.002	L0.002
Total Dissolved Phosphates	P	L0.001	L0.001	L0.001
ortho-Phosphates	P	L0.001	L0.001	L0.001
Silica	Si02	5.89	8.45	6.32
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.010	0.005	0.009
Antimony	Sb	L0.001	L0.001	L0.001
[illegible]senic	As	L0.001	L0.001	L0.001
[illegible]rium	Ba	0.065	0.065	0.16
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	20.2	19.9	15.4
Chromium	Cr	L0.001	L0.001	0.015
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	L0.030
Lead	Pb	L0.001	L0.001	L0.001
Magnesium	Mg	3.58	3.58	4.09
Manganese	Mn	L0.003	L0.003	L0.003
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	L0.005	L0.005
Phosphorus	P04	L0.4	L0.4	L0.4
Potassium	K	0.29	0.29	0.21
Silicon	Si02	5.27	5.27	5.00
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.50	2.59	1.36

RESULTS OF TESTING: (CON'T)

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
Strontium	Sr	0.070	0.069	0.051
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.021	0.021	0.021
Antimony	Sb	L0.001	L0.001	L0.001
Arsenic	As	L0.001	L0.001	L0.001
ium	Ba	0.066	0.065	0.16
Beryllium	Be	L0.003	L0.003	L0.003
Bismuth	Bi	L0.5	L0.5	L0.5
Boron	B	L0.01	L0.01	L0.01
Cadmium	Cd	L0.001	L0.001	L0.001
Calcium	Ca	20.2	20.0	15.4
Chromium	Cr	L0.001	L0.001	0.017
Cobalt	Co	L0.005	L0.005	L0.005
Copper	Cu	L0.001	L0.001	L0.001
Iron	Fe	L0.030	L0.030	L0.030
Lead	Pb	L0.001	0.001	L0.001
Magnesium	Mg	3.60	3.58	4.14
Manganese	Mn	L0.003	L0.003	L0.003
Mercury	Hg	L0.00005	L0.00005	L0.00005
Molybdenum	Mo	L0.005	L0.005	L0.005
Nickel	Ni	L0.005	0.014	L0.005
P sphorus	P04	L0.4	L0.4	L0.4
icon	Si02	5.36	5.34	5.10
Silver	Ag	L0.005	L0.005	L0.005
Sodium	Na	2.59	2.59	1.42
Strontium	Sr	0.070	0.069	0.052
Tin	Sn	L0.03	L0.03	L0.03
Titanium	Ti	L0.006	L0.006	L0.006
Vanadium	V	L0.01	L0.01	L0.01
Zinc	Zn	L0.005	L0.005	L0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	L0.020	L0.020	L0.020
Ammonia Nitrogen	N	0.017	0.021	0.012
Total Phenolics as Phenol		L0.001	L0.001	L0.001
OTHERS (mg/L)				
Ferrous Iron	Fe	L0.05	L0.05	L0.05

mg/L = milligrams per liter (= ppm, parts per million)
L = Less than = Not Detected

can test ltd.

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Report On: Analysis of Water Samples

File No.: 1661F

Report No.:

Reported To: Crows Nest Resources

P.O. #: 22372

P.O. Box 2699, Station "A"

Date: Nov. 21/83

Calgary, Alberta T2P 2M7

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on October 18, 1983 and report as follows:

DISCUSSION:

Due to an acid spill that occurred in the field during sampling, dissolved and total metals aliquots were not submitted. Instead, a cut was taken from the raw sample and then prepared in the laboratory in order to produce metal results.

In summary, the results are very comparable to results from previous months. The traces of phenol that were present in some of the samples taken in September were not found in this months' samples.

SAMPLE IDENTIFICATION:

PROJECT NAME: TELKWA
DATE SAMPLED: OCTOBER 15-16, 1983

CTL#	CLIENT I.D.	DESCRIPTION	TEMP. C
1661-1	TH-01	Cabinet Creek	1.
-2	TH-02	Four Creek	2.
-3	TH-03	Tenas Creek	1.
-4	TH-04	Goat Horn Lower	2.
-5	TH-05	Hubert Creek	4.
-6	TH-06	Bulkley Upper	5.
-7	TH-07	Bulkley Lower	5.
-8	TH-08	Telkwa Upper	1
-9	TH-09	Telkwa Lower	-
-10	TH-10	Goat Horn Above B.V.C.	4.
-11	TH-11	Goat Horn Below B.V.C.	2.
-12	TH-12	Goat Horn Upper	3.

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AND/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber glass	Filtered H_2SO_4
Nutrients	Plastic	H_2SO_4
Phenols	Amber glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$, o-Phenanthroline

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministryof the Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 15th Edition, 1980 and 14th Edition, 1975, published by the American Public Health Association.

The metals were determined by using Inductively Coupled Plasma Spectrographic Analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the 'Annual Book of ASTM Standard", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.,

Don M. Enns, B.Sc.,
Chemist

DME/tw

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
PHYSICAL TESTS				
pH		7.75	7.80	7.75
Conductivity(micromhos/cm)		120.	264.	161.
Turbidity(JTU)		0.27	1.0	0.88
Hardness(mg/L)	CaCO3	55.3	130.	75.9
SOLIDS(mg/L)				
Total Suspended		< 0.5	< 0.5	< 0.5
Total Dissolved		99.	234.	143.
DISSOLVED ANIONS(mg/L)				
Alkalinity: Bicarbonate	HCO3	47.4	170.	102.
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	1.49	< 0.50	< 0.50
Sulfates	SO4	20.0	11.8	1.8
Nitrates	N	0.077	1.36	0.081
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Dissolved Phosphates	P	0.009	0.060	0.009
Ortho Phosphates	P	0.002	0.003	0.003
Silica	SiO2	7.76	7.12	8.61
DISSOLVED METALS(mg/L)				
Aluminum	Al	0.007	0.010	< 0.005
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.017	0.066	0.030
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.01	0.020	0.022
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	18.6	28.6	22.8
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	< 0.03	< 0.03	< 0.03
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	2.10	13.8	4.49
Manganese	Mn	< 0.003	< 0.003	< 0.003
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Silicon	SiO2	4.66	4.90	6.19
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.92	8.14	3.25
Strontium	Sr	0.064	0.17	0.11
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005
TOTAL METALS(mg/L)				
Aluminum	Al	0.023	0.034	0.082
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.018	0.070	0.032
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.01	0.024	0.045
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	19.2	29.6	24.2
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	< 0.030	0.034	0.078
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	2.15	14.6	4.71
Manganese	Mn	< 0.003	< 0.003	0.004
Mercury	Hg	<.00005	<.00005	<.00005
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Silicon	SiO2	4.82	5.82	7.06
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.66	8.34	3.34
Strontium	Sr	0.065	0.17	0.12
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	0.005	0.017	< 0.005
POLLUTANT TESTS(mg/L)				
Total Phosphate	P	< 0.01	< 0.01	< 0.01
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
		< 0.05	< 0.05	< 0.05

mg/L = milligrams per liter (= ppm , parts per million)
< = less than = not detected

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
PHYSICAL TESTS				
pH		7.80	7.75	7.40
Conductivity (micromhos/cm)		138.	251.	61.
Turbidity (JTU)		0.43	1.6	1.0
Hardness (mg/L)	CaCO3	60.6	127.	24.9
SOLIDS (mg/L)				
Total Suspended		< 0.5	< 0.5	4.5
Total Dissolved		110.	245.	53.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	61.5	171.	32.0
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	17.4	5.6	5.4
Nitrates	N	0.066	0.015	0.061
Nitrites	N	< 0.002	0.002	< 0.002
Total Dissolved Phosphates	P	0.022	0.026	0.030
Ortho Phosphates	P	0.007	0.013	0.014
Silica	SiO2	7.13	20.0	5.22
DISSOLVED METALS (mg/L)				
Aluminum	Al	< 0.005	0.010	0.006
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.052	0.041	0.019
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.014	0.014	0.022
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	18.4	35.3	8.26
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	0.002	0.001
Iron	Fe	< 0.03	0.31	< 0.03
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	3.47	9.23	1.00
Manganese	Mn	< 0.003	0.004	0.005
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Silicon	SiO2	5.15	12.8	3.38
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	2.24	4.07	0.98
Strontium	Sr	0.069	0.14	0.035
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.014	0.055	0.20
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.057	0.045	0.022
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.014	0.043	0.023
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	19.9	38.0	8.88
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	0.002	0.001
Iron	Fe	< 0.030	0.67	0.11
Lead	Pb	< 0.001	0.001	< 0.001
Magnesium	Mg	3.76	9.88	1.08
Manganese	Mn	< 0.003	0.030	0.011
Mercury	Hg	<.00005	<.00005	<.00005
Molybdenum	Mo	< 0.005	< 0.005	0.017
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Silicon	SiO2	5.52	14.3	4.82
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	2.31	4.45	1.10
Strontium	Sr	0.075	0.15	0.038
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	0.008	< 0.005	0.006
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.028	0.037	< 0.01
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
		0.15	0.84	< 0.05

mg/L = milligrams per liter (=ppm, parts per million)
< = less than = not detected

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
PHYSICAL TESTS				
pH		7.60	7.70	7.75
Conductivity (micromhos/cm)		80.	95.	104.
Turbidity (JTU)		0.95	0.95	1.0
Hardness (mg/L)	CaCO3	35.7	41.9	46.8
SOLIDS (mg/L)				
Total Suspended		2.0	< 0.5	1.0
Total Dissolved		71.	83.	88.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	46.1	51.9	56.4
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	3.6	5.5	6.4
Nitrates	N	< 0.010	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Dissolved Phosphates	P	0.009	0.034	0.019
Ortho Phosphates	P	0.003	0.006	0.007
Silica	SiO2	6.49	8.40	9.04
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.050	< 0.005	< 0.005
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.026	0.038	0.040
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.016	0.012	0.014
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	11.3	13.5	14.9
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	0.12	0.097	0.090
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	1.78	1.93	2.27
Manganese	Mn	0.030	0.023	0.021
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.5	< 0.4
Silicon	SiO2	4.57	5.52	5.97
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.33	1.51	1.76
Strontium	Sr	0.047	0.069	0.072
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005
TOTAL METALS (mg/L)				
Aluminum	Al	0.053	0.10	0.059
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.027	0.042	0.042
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.043	0.019	0.030
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	11.9	14.4	15.8
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	0.24	0.22	0.16
Lead	Pb	< 0.001	0.003	< 0.001
Magnesium	Mg	1.87	2.07	2.41
Manganese	Mn	0.043	0.028	0.023
Mercury	Hg	<.00005	<.00005	<.00005
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Silicon	SiO2	5.03	6.62	6.66
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.40	1.61	1.82
Strontium	Sr	0.049	0.074	0.076
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.012	0.019	0.024
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
		0.22	0.17	0.12

mg/L = milligrams per liter (=ppm, parts per billion)
< = less than = not detected

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
PHYSICAL TESTS				
pH		7.85	7.80	7.85
Conductivity(micromhos/cm)		131.	131.	110.
Turbidity(JTU)		0.55	0.55	0.22
Hardness(mg/L)	CaCO3	58.3	59.4	50.5
SOLIDS(mg/L)				
Total Suspended		< 0.5	2.5	< 0.5
Total Dissolved		109.	115.	98.
DISSOLVED ANIONS(mg/L)				
Alkalinity: Bicarbonate	HCO3	58.9	60.2	65.3
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	2.00	< 0.50	1.49
Sulfates	SO4	17.4	23.0	3.7
Nitrates	N	0.068	0.069	0.061
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Dissolved Phosphates	P	0.005	0.005	0.009
Ortho Phosphates	P	0.003	0.005	0.002
Silica	SiO2	6.91	7.98	7.98
DISSOLVED METALS(mg/L)				
Aluminum	Al	< 0.005	0.011	< 0.005
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.055	0.055	0.15
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.013	0.013	0.013
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	18.4	18.3	14.2
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	< 0.030	< 0.030	< 0.030
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	2.92	3.26	3.57
Manganese	Mn	< 0.003	0.005	< 0.003
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Silicon	SiO2	5.42	5.40	5.08
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	2.32	2.08	1.29
Strontium	Sr	0.065	0.066	0.049
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005
TOTAL METALS(mg/L)				
Aluminum	Al	< 0.005	0.14	0.14
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.059	0.057	0.16
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.027	0.021	0.038
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	19.7	19.3	14.9
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.001	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	< 0.030	< 0.030	< 0.030
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	3.13	3.42	3.79
Manganese	Mn	< 0.003	0.005	< 0.003
Mercury	Hg	<.00005	<.00005	<.00005
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Silicon	SiO2	6.12	6.22	5.57
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	2.48	2.18	1.38
Strontium	Sr	0.069	0.070	0.052
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS(mg/L)				
Total Phosphate	P	< 0.01	0.016	< 0.01
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
		< 0.05	< 0.05	< 0.05

mg/L = milligrams per liter (=ppm, parts per million)
< = less than = not detected

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Report On Analysis of water samples

File No. 9948F

Report No.

Reported To Crows Nest Resources

P.O. #

P.O. Box 2699, Station "M"

Date October 19, 1983

Calgary, Alberta T2P 2M7

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on September 20, 1983 and report as follows:

SUMMARY:

In general, the parameters being tested have remained quite stable and very little fluctuation has been observed. The surface waters appear to be stable and have not changed appreciably since the baseline study was initiated. As with the previous set of samples, minute traces of phenol were found in various samples. The quantity of phenol detected is in the parts per billion range and is not considered abnormal.

The ground waters are considered moderatly low with respect to hardness but extremely high in respect to dissolved solids. This is not unusual considering where the same is taken from. The only problem encountered in the analysis of these water samples was the reactive silica could not be determined for sample number fifteen (15) because of an unknown interference. It should be noted that sample number thirteen (13) exhibited relatively high concentrations of phenol in comparison to the other ground waters.

SAMPLE IDENTIFICATION:

Project Name: Telkwa
Date Sampled: September 16-18, 1983

CTL#	Client I.D.
9948-1	TH-01 Cabinet Creek
2	TH-02 Four Creek
3	TH-03 Tenas Creek
4	TH-04 Goat Horn Lower
5	TH-05 Hubert Creek
6	TH-06 Bulkley Upper
7	TH-07 Bulkley Lower
8	TH-08 Telkwa Upper
9	TH-09 Telkwa Lower
10	TH-10 Goat Horn Above B.V.C.
11	TH-11 Goat Horn Below B.V.C.
12	TH-12 Goat Horn Upper
13	#255 -
14	#257 -

SAMPLE IDENTIFICATION: (CON'T)

CTL#	CLIENT I.D.
9948-15	#258
16	Kerr
17	Dehoog

With further identification in "Results of Testing".

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by CAN TEST LTD.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AND/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber glass	Filtered H_2SO_4
Nutrients	Plastic	H_2SO_4
Total Metals	Plastic, acid washed	HNO_3
Dissolved Metals	Plastic, acid washed	HNO_3, field filtration
Phenols	Amber glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$, o-Phenanthroline

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of the Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 15th Edition, 1980 and 14th Edition, 1975, published by the American Public Health Association.

The metals were determined by using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the 'Annual book of ASTM Standard", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

Don M. Enns, B.Sc.,
Chemist

/cs

CAN TEST LTD.

Crows Nest Resources
File No: 9948E

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DATE SAMPLED		09/17/83	09/17/83	09/18/83
PHYSICAL TESTS				
pH		7.70	8.10	8.00
Conductivity(micromhos/cm)		111.	246.	162.
Turbidity(JTU)		0.25	6.2	0.72
Hardness(mg/L)	CaCO3	49.5	118.	80.5
SOLIDS(mg/L)				
Total Suspended		< 0.5	7.0	< 0.5
Total Dissolved		96.	234.	154.
DISSOLVED ANIONS(mg/L)				
Alkalinity: Bicarbonate	HCO3	43.7	167.	108.
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	27.2	20.8	7.0
Nitrates	N	< 0.010	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	P	0.008	0.007	< 0.001
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	7.53	10.5	9.00
DISSOLVED METALS(mg/L)				
Aluminum	Al	0.017	0.051	0.009
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.014	0.070	0.032
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.50	< 0.50	< 0.50
Boron	B	< 0.010	< 0.010	0.020
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	16.8	26.0	24.3
Chromium	Cr	< 0.001	< 0.001	0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	< 0.030	0.035	< 0.030
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	1.84	12.7	4.68
Manganese	Mn	< 0.003	< 0.003	< 0.003
Molybdenum	Mo	< 0.005	< 0.005	0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.29	0.51	0.22
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.99	6.53	6.61
Silver	Ag	< 0.005	< 0.005	0.005
Sodium	Na	1.24	0.16	3.04
Strontium	Sr	0.056	0.16	0.11
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005

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RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
DATE SAMPLED		09/17/83	09/17/83	09/18/83
TOTAL METALS (mg/L)				
Aluminum	Al	0.031	0.77	0.085
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.014	0.071	0.032
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.019	0.022	0.029
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	16.9	26.3	24.3
Chromium	Cr	0.004	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.009	0.004	0.004
Iron	Fe	0.081	0.45	0.058
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	1.86	12.9	4.69
Manganese	Mn	< 0.003	0.016	0.003
Mercury	Hg	0.00008	0.00010	0.00010
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.49	9.68	6.63
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.24	6.65	3.07
Strontium	Sr	0.056	0.16	0.11
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.014	0.047	0.013
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	< 0.020	< 0.020	< 0.020
Ammonia Nitrogen	N	< 0.01	0.055	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001	0.005
OTHERS				
Ferrous Iron	Fe	< 0.05	1.04	< 0.05

mg/L = milligrams per liter
< = Less than = Not detected

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DATE SAMPLED		09/18/83	09/17/83	09/17/83
PHYSICAL TESTS				
pH		7.90	7.85	7.40
Conductivity (micromhos/cm)		134.	269.	58.2
Turbidity (JTU)		0.44	2.3	0.70
Hardness (mg/L)	CaCO3	59.0	137.	25.0
SOLIDS (mg/L)				
Total Suspended		< 0.5	3.0	< 0.5
Total Dissolved		117.	269.	53.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	61.5	189.	32.8
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	27.0	10.4	6.8
Nitrates	N	< 0.010	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	P	< 0.001	0.002	0.030
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	7.22	22.3	4.93
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.009	0.013	0.005
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	0.001	< 0.001
Barium	Ba	0.055	0.066	0.019
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.50	< 0.50	< 0.50
Boron	B	< 0.010	< 0.010	< 0.010
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	18.1	38.9	8.37
Chromium	Cr	0.056	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	0.036	0.95	< 0.030
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	3.31	9.37	0.99
Manganese	Mn	< 0.003	0.32	0.004
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.33	1.42	0.28
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.19	15.5	3.00
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.78	3.03	0.91
Strontium	Sr	0.068	0.15	0.034
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005

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RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
DATE SAMPLED		09/18/83	09/17/83	09/17/83
TOTAL METALS (mg/L)				
Aluminum	Al	0.024	0.048	0.071
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	0.002	< 0.001
Barium	Ba	0.055	0.066	0.020
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.012	0.011	0.015
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	18.4	39.1	8.42
Chromium	Cr	0.001	< 0.001	0.014
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.004	0.004	0.004
Iron	Fe	0.037	1.89	0.092
Lead	Pb	< 0.001	< 0.005	0.006
Magnesium	Mg	3.39	9.85	0.99
Manganese	Mn	< 0.003	0.32	0.008
Mercury	Hg	0.00008	0.00010	0.00010
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.32	15.5	3.40
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.85	3.80	0.91
Strontium	Sr	0.068	0.15	0.034
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.011	0.019	0.012
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	< 0.020	0.058	< 0.020
Ammonia Nitrogen	N	0.016	0.11	< 0.01
Total Phenolics as Phenol		< 0.001	0.003	< 0.001
OTHERS				
Ferrous Iron	Fe	< 0.05	1.55	< 0.05

mg/L = milligrams per liter
< = Less than = Not detected

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DATE SAMPLED		09/17/83	09/17/83	09/17/83
PHYSICAL TESTS				
pH		7.40	7.60	7.50
Conductivity (micromhos/cm)		63.3	75.8	90.7
Turbidity (JTU)		0.85	2.0	1.7
Hardness (mg/L)	CaCO3	28.0	35.5	42.0
SOLIDS (mg/L)				
Total Suspended		< 0.5	4.5	7.5
Total Dissolved		59.	71.	85.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	37.1	42.4	51.9
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	6.8	8.5	11.7
Nitrates	N	< 0.010	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	P	< 0.001	0.003	< 0.001
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	5.44	7.48	7.22
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.009	0.029	0.026
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.022	0.036	0.038
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.50	< 0.50	< 0.50
Boron	B	< 0.010	< 0.010	< 0.010
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	9.12	11.5	13.4
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	0.073	0.11	0.095
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	1.29	1.65	2.00
Manganese	Mn	0.023	0.015	0.013
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.31	0.31	0.30
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	3.56	5.06	5.18
Silver	Ag	0.005	0.005	0.005
Sodium	Na	1.00	1.05	1.34
Strontium	Sr	0.039	0.063	0.065
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
DATE SAMPLED		09/17/83	09/17/83	09/17/83
TOTAL METALS (mg/L)				
Aluminum	Al	0.090	0.17	0.17
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.023	0.038	0.040
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.010	< 0.010	0.015
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	9.79	11.9	13.5
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.004	0.003	0.004
Iron	Fe	0.17	0.39	0.30
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	1.36	1.65	2.01
Manganese	Mn	0.027	0.023	0.020
Mercury	Hg	0.00008	0.00010	0.00010
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	3.87	5.63	5.81
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.01	1.15	1.38
Strontium	Sr	0.039	0.063	0.065
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.012	0.020	0.019
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	0.045	< 0.020	< 0.020
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		0.007	< 0.001	< 0.001
OTHERS				
Ferrous Iron	Fe	< 0.05	0.19	0.16

mg/L = milligrams per liter
< = Less than = Not detected

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DATE SAMLLED		09/18/83	09/18/83	09/17/83
PHYSICAL TESTS				
pH		7.70	7.70	7.80
Conductivity(micromhos/cm)		117.	122.	125.
Turbidity(JTU)		0.35	0.37	0.50
Hardness(mg/L)	CaCO3	54.0	56.5	52.0
SOLIDS(mg/L)				
Total Suspended		< 0.5	< 0.5	1.5
Total Dissolved		108.	111.	104.
DISSOLVED ANIONS(mg/L)				
Alkalinity: Bicarbonate	HCO3	57.4	60.1	72.4
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	23.6	23.6	6.2
Nitrates	N	< 0.010	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	P	0.001	< 0.001	< 0.001
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	7.48	7.48	6.97
DISSOLVED METALS(mg/L)				
Aluminum	Al	0.013	0.022	0.009
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.056	0.055	0.17
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.50	< 0.50	< 0.50
Boron	B	< 0.010	< 0.010	< 0.010
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	17.2	17.5	14.5
Chromium	Cr	0.001	0.022	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	0.001	< 0.001
Iron	Fe	< 0.030	0.032	< 0.030
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	2.69	3.01	3.82
Manganese	Mn	< 0.003	< 0.003	< 0.003
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.32	0.32	0.26
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.21	5.23	5.25
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.76	1.69	1.27
Strontium	Sr	0.056	0.054	0.050
Tin	Sn	< 0.010	< 0.010	< 0.030
Titanium	Ti	< 0.006	< 0.006	< 0.006
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005

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RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
DATE SAMLLED		09/18/83	09/18/83	09/17/83
TOTAL METALS (mg/L)				
Aluminum	Al	0.024	0.024	0.022
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.056	0.055	0.17
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.012	0.017	0.011
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	17.3	17.8	15.1
Chromium	Cr	< 0.001	0.002	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.004	0.005	0.004
Iron	Fe	< 0.030	0.042	0.034
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	2.70	3.02	3.82
Manganese	Mn	< 0.003	< 0.003	< 0.003
Mercury	Hg	0.00010	0.00008	0.00010
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	0.016	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.36	5.29	5.29
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.77	1.76	1.29
Strontium	Sr	0.058	0.061	0.050
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.008	0.009	0.010
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	< 0.020	< 0.020	< 0.020
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
Ferrous Iron	Fe	1.08	< 0.05	< 0.05

mg/L = milligrams per liter
< = Less than = Not detected

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Crows Nest Resources
File No: 9948E

RESULTS OF TESTING:

SAMPLE #		13	14	15
CLIENT SAMPLE I.D.		#255	#257	#258
DATE SAMPLE		09/18/83	09/16/83	09/18/83
PHYSICAL TESTS				
pH		8.00	8.65	10.20
Conductivity (micromhos/cm)		960.	1780.	1830.
Turbidity (JTU)		5.2	35.	66.
Hardness (mg/L)	CaCO3	100.	46.5	11.5
SOLIDS (mg/L)				
Total Suspended		25.5	54.5	98.5
Total Dissolved		606.	1700.	1040.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	157.	1040.	137.
Alkalinity: Carbonate	CO3	-	159.	370.
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	205.	2.20	81.0
Sulfates	SO4	55.0	40.0	84.0
Nitrates	N	0.011	< 0.010	0.016
Nitrites	N	< 0.002	< 0.002	0.012
Total Phosphates	P	0.069	0.11	0.17
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	14.4	13.1	-
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.022	0.11	0.31
Antimony	Sb	0.001	< 0.001	< 0.001
Arsenic	As	0.001	0.002	0.003
Barium	Ba	0.038	0.096	0.093
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.50	< 0.50	< 0.50
Boron	B	0.031	0.18	0.19
Cadmium	Cd	0.066	< 0.001	< 0.001
Calcium	Ca	31.2	13.8	3.93
Chromium	Cr	< 0.001	0.007	< 0.001
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.041	0.007	0.058
Iron	Fe	0.19	0.040	0.084
Lead	Pb	0.029	< 0.001	< 0.001
Magnesium	Mg	5.26	2.90	0.36
Manganese	Mn	0.054	0.17	0.005
Molybdenum	Mo	0.022	0.015	0.037
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	3.94	5.35	11.5
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	6.92	9.41	12.3
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	141.	428.	338.
Strontium	Sr	0.12	0.20	0.34
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	< 0.006	< 0.006	0.006
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	0.38	0.056	0.024

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File No: 9948E

RESULTS OF TESTING:

SAMPLE #		13	14	15
CLIENT SAMPLE I.D.		#255	#257	#258
DATE SAMPLE		09/18/83	09/16/83	09/18/83
TOTAL METALS (mg/L)				
Aluminum	Al	0.33	5.71	12.7
Antimony	Sb	0.001	< 0.001	< 0.001
Arsenic	As	0.001	0.003	0.004
Barium	Ba	0.038	0.13	0.15
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.039	0.19	0.19
Cadmium	Cd	0.078	< 0.001	< 0.001
Calcium	Ca	31.4	14.1	4.86
Chromium	Cr	0.003	0.007	0.013
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.26	0.17	0.20
Iron	Fe	0.52	2.23	3.10
Lead	Pb	0.032	0.010	0.008
Magnesium	Mg	5.28	3.35	1.86
Manganese	Mn	0.058	0.22	0.042
Mercury	Hg	0.00038	0.00013	0.00018
Molybdenum	Mo	0.027	0.017	0.037
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	7.69	31.9	55.8
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	147.	431.	344.
Strontium	Sr	0.12	0.20	0.38
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.028	0.25	0.50
Vanadium	V	< 0.010	< 0.010	0.023
Zinc	Zn	0.62	0.20	0.13
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	< 0.020	0.20	0.091
Ammonia Nitrogen	N	1.82	0.66	0.093
Total Phenolics as Phenol		3.04	0.003	0.003
OTHERS				
Ferrous Iron	Fe	0.31	1.30	1.93

mg/L = milligrams per liter
< = Less than = Not detected

RESULTS OF TESTING:

SAMPLE #		16	17
CLIENT SAMPLE I.D.		KERR	DEHOOG
DATE SAMPLED		09/16/83	09/16/83
PHYSICAL TESTS			
pH		8.10	8.00
Conductivity(micromhos/cm)		822.	655.
Turbidity(JTU)		0.39	0.37
Hardness(mg/L)	CaCO3	418.	265.
SOLIDS(mg/L)			
Total Suspended		2.0	3.5
Total Dissolved		726.	509.
DISSOLVED ANIONS(mg/L)			
Alkalinity: Bicarbonate	HCO3	536.	266.
Alkalinity: Carbonate	CO3	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil
Chlorides	Cl	6.50	71.5
Sulfates	SO4	10.8	14.0
Nitrates	N	0.30	7.01
Nitrites	N	0.006	0.019
Total Phosphates	P	< 0.001	< 0.001
Ortho Phosphates	P	< 0.001	< 0.001
Silica	SiO2	22.3	19.7
DISSOLVED METALS(mg/L)			
Aluminum	Al	0.013	< 0.005
Antimony	Sb	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001
Barium	Ba	0.19	0.17
Beryllium	Be	< 0.003	< 0.003
Bismuth	Bi	< 0.50	< 0.50
Boron	B	0.012	0.014
Cadmium	Cd	< 0.001	< 0.001
Calcium	Ca	115.	76.1
Chromium	Cr	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005
Copper	Cu	0.004	0.003
Iron	Fe	< 0.030	< 0.030
Lead	Pb	< 0.001	< 0.001
Magnesium	Mg	31.1	17.9
Manganese	Mn	0.005	0.041
Molybdenum	Mo	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4
Potassium	K	0.84	1.21
Selenium	Se	< 0.001	< 0.001
Silicon	SiO2	12.9	12.1
Silver	Ag	< 0.005	< 0.005
Sodium	Na	13.0	30.2
Strontium	Sr	0.50	0.50
Tin	Sn	< 0.030	< 0.030
Titanium	Ti	< 0.006	< 0.006
Vanadium	V	< 0.010	< 0.010
Zinc	Zn	0.093	0.53

RESULTS OF TESTING:

SAMPLE #		16	17
CLIENT SAMPLE I.D.		KERR	DEHOOG
DATE SAMPLED		09/16/83	09/16/83
TOTAL METALS (mg/L)			
Aluminum	Al	0.029	0.022
Antimony	Sb	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001
Barium	Ba	0.19	0.17
Beryllium	Be	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5
Boron	B	0.020	0.057
Cadmium	Cd	< 0.001	< 0.001
Calcium	Ca	116.	76.1
Chromium	Cr	< 0.001	< 0.001
Cobalt	Co	< 0.005	< 0.005
Copper	Cu	0.008	0.010
Iron	Fe	0.15	0.16
Lead	Pb	< 0.001	< 0.001
Magnesium	Mg	31.1	18.2
Manganese	Mn	0.005	0.041
Mercury	Hg	0.00013	0.00008
Molybdenum	Mo	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001
Silicon	SiO2	13.5	12.1
Silver	Ag	< 0.005	< 0.005
Sodium	Na	13.0	30.6
Strontium	Sr	0.50	0.51
Tin	Sn	< 0.030	< 0.030
Titanium	Ti	< 0.006	0.011
Vanadium	V	< 0.010	< 0.010
Zinc	Zn	0.11	0.54
POLLUTANT TESTS (mg/L)			
Total Phosphate	P	0.091	0.90
Ammonia Nitrogen	N	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001
OTHERS			
Ferrous Iron	Fe	< 0.05	< 0.05

mg/L = milligrams per liter
< = Less than = Not detected

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Report On Analysis of water samples

File No. 9610F

Report No.

Reported To Crows Nest Resources

P.O. # 22372

P.O. Box 2699, Station "M"

Date Sept. 6, 1983

Calgary, Alberta T2P 2M7

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on August 16, 1983 and report as follows:

SUMMARY:

As in previous reports, very little variation has been observed in the parameters tested on a monthly basis. It was noted that there were minor discrepancies in the phosphate analysis for most samples. In general, the total dissolved phosphate was higher than the total phosphate. All phosphate results were rechecked and verified. It is possible that the filter apparatus was slightly contaminated in the field. It should also be noted that small quantities of phenol were detected at certain locations. Although it is impossible to determine the source for this phenol contamination, the minute quantities that were detected would seem to indicate a natural source. For example, certain types of plants release phenol as a by-product of natural processes, however; further research would be required to confirm this.

SAMPLE IDENTIFICATION:

PROJECT NAME: TELKWA
DATE SAMPLED: AUGUST 13-14, 1983

CTL#	IDENTIFICATION	DATE	TEMP. °C
1	TH-01 Cabinet Cr.	August 14/83	6.1
2	TH-02 Four Cr.	August 14/83	9.4
3	TH-03 Tenas Cr.	August 13/83	9.5
4	TH-04 Goat Horn Lower	August 13/83	7.4
5	TH-05 Hubert Cr.	August 13/83	14.2
6	TH-06 Bulkley Upper	August 13/83	-
7	TH-07 Bulkley Lower	August 13/83	14.2
8	TH-08 Telkwa Upper	August 13/83	7.4
9	TH-09 Telkwa Lower	August 13/83	7.5
10	TH-10 Goat Horn above B.V.C.	August 14/83	9.3
11	TH-11 Goat Horn below B.V.C.	August 14/83	10.0
12	TH-12 Goat Horn Upper	August 14/83	8.2

...../2

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by Can Test Ltd.) preserved as required for testing.

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AND/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber glass	Filtered H_2SO_4
Nutrients	Plastic	H_2SO_4
Total Metals	Plastic, acid washed	HNO_3
Dissolved Metals	Plastic, acid washed	HNO_3, field filtration
Phenols	Amber glass	$CuSO_4$, H_3PO_4
Ferrous Iron	Plastic	$NH_4C_2N_3O_2$, o-Phenanthroline

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of the Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 15th Edition, 1980 and 14th Edition, 1975, published by the American Public Health Association.

The metals were determined by using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the "Annual Book of ASTM Standards", May 1982.

RESULTS OF TESTING:

(on the following page)

CAN TEST LTD.

Don Enns

Don M. Enns, B.Sc.,
Chemist

/cs

CAN TEST LTD.

Crows Nest Resources
File No: 9610E
Page No: 3

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
PHYSICAL TESTS				
pH		7.35	7.90	7.95
Conductivity (micromhos/cm)		95.2	160.	136.
Turbidity (JTU)		0.45	1.5	0.60
Hardness (mg/L)	CaCO3	43.5	86.0	72.0
SOLIDS (mg/L)				
Total Suspended		1.0	1.0	1.0
Total Dissolved		77.	156.	136.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	38.9	109.	96.6
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	14.8	6.5	3.4
Nitrates	N	0.020	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	P	0.053	0.044	0.047
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	5.03	5.40	7.38
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.010	0.10	0.024
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.012	0.056	0.031
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.01	< 0.01	0.011
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	14.8	19.4	21.9
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.001	< 0.001	< 0.001
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	< 0.030	0.064	< 0.030
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	1.57	8.94	4.16
Manganese	Mn	< 0.003	< 0.003	< 0.003
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.35	0.47	0.26
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.63	7.20	6.58
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.17	4.78	2.93
Strontium	Sr	0.050	0.12	0.11
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.008	0.011	0.008
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005

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RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
TOTAL METALS (mg/L)				
Aluminum	Al	0.036	0.14	0.066
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.013	0.056	0.032
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.01	< 0.01	0.011
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	14.9	19.4	22.0
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.001	< 0.001	< 0.001
Copper	Cu	0.001	0.004	< 0.001
Iron	Fe	< 0.030	0.095	0.049
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	1.57	8.99	4.17
Manganese	Mn	< 0.003	< 0.003	0.003
Mercury	Hg	<.00005	<.00005	<.00005
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.63	7.24	6.70
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.17	4.83	2.93
Strontium	Sr	0.050	0.12	0.11
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.010	0.014	0.008
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	< 0.020	< 0.020	< 0.020
Ammonia Nitrogen	N	0.077	0.052	< 0.01
Total Phenolics as Phenol		0.004	< 0.001	0.002
OTHERS				
Ferrous Iron	Fe	< 0.05	< 0.05	0.39

mg/L = milligrams per liter
< = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
PHYSICAL TESTS				
pH		7.70	7.75	6.80
Conductivity (micromhos/cm)		107.	224.	50.2
Turbidity (JTU)		0.90	2.5	1.0
Hardness (mg/L)	CaCO3	52.0	128.	24.0
SOLIDS (mg/L)				
Total Suspended		1.0	5.0	2.0
Total Dissolved		94.	220.	48.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	52.3	164.	29.5
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	15.9	< 1.0	4.7
Nitrates	N	< 0.010	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	P	0.053	0.081	0.044
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	5.40	13.1	3.60
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.022	0.016	0.019
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.050	0.084	0.020
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.01	< 0.01	< 0.01
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	16.0	36.0	7.97
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.001	< 0.001	< 0.001
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	< 0.030	1.44	0.031
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	2.85	9.11	1.00
Manganese	Mn	< 0.003	0.40	< 0.003
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.39	0.78	0.37
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.89	13.6	3.31
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.59	3.77	0.80
Strontium	Sr	0.060	0.16	0.036
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.008	0.008	0.009
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
TOTAL METALS (mg/L)				
Aluminum	Al	0.062	0.079	0.054
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	0.003	< 0.001
Barium	Ba	0.051	0.088	0.021
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.01	< 0.01	< 0.01
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	16.0	36.5	7.98
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.001	< 0.001	< 0.001
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	0.039	1.88	0.10
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	2.85	9.38	1.00
Manganese	Mn	0.004	0.42	0.008
Mercury	Hg	<.00005	<.00005	0.000(
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.99	14.2	3.55
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.59	3.91	0.80
Strontium	Sr	0.060	0.16	0.036
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.010	0.009	0.10
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	0.010	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	< 0.020	< 0.020	< 0.020
Ammonia Nitrogen	N	< 0.01	0.085	< 0.01
Total Phenolics as Phenol		< 0.001	0.004	< 0.001
OTHERS				
Ferrous Iron	Fe	< 0.05	2.44	< 0.05

mg/L = milligrams per liter
< = Less than = Not Detected

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RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
PHYSICAL TESTS				
pH		7.40	7.40	7.65
Conductivity(micromhos/cm)		55.8	50.9	67.8
Turbidity(JTU)		1.3	11.	7.6
Hardness(mg/L)	CaCO3	27.0	25.0	33.0
SOLIDS(mg/L)				
Total Suspended		2.5	43.0	36.0
Total Dissolved		54.	48.	60.
DISSOLVED ANIONS(mg/L)				
Alkalinity: Bicarbonate	HCO3	33.6	30.9	37.6
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	4.9	3.7	5.5
Nitrates	N	< 0.010	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	P	0.046	0.041	0.041
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	3.96	3.78	3.96
DISSOLVED METALS(mg/L)				
Aluminum	Al	0.017	0.070	0.070
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.022	0.026	0.031
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.01	< 0.01	< 0.01
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	8.80	8.20	10.6
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.001	< 0.001	< 0.001
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	0.069	0.058	0.049
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	1.20	1.02	1.56
Manganese	Mn	0.012	0.012	0.010
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.34	0.32	0.32
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	3.64	3.22	3.76
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	0.93	0.82	1.05
Strontium	Sr	0.039	0.044	0.051
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.007	0.014	0.011
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
TOTAL METALS (mg/L)				
Aluminum	Al	0.090	0.92	0.66
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.023	0.045	0.045
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.01	< 0.01	< 0.01
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	8.90	8.52	11.1
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.001	< 0.001	< 0.001
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	0.15	0.72	0.52
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	1.23	1.33	1.84
Manganese	Mn	0.018	0.038	0.028
Mercury	Hg	<.00005	<.00005	<.000
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	3.93	6.42	6.11
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	0.93	0.90	1.20
Strontium	Sr	0.039	0.047	0.053
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.011	0.075	0.049
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	< 0.020	0.026	< 0.020
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		0.003	< 0.001	< 0.001
OTHERS				
Ferrous Iron	Fe	0.39	0.41	0.46

mg/L = milligrams per liter
< = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
PHYSICAL TESTS				
pH		7.60	7.80	7.85
Conductivity(micromhos/cm)		102.	106.	99.8
Turbidity(JTU)		0.55	0.80	0.50
Hardness(mg/L)	CaCO3	50.0	52.0	53.0
SOLIDS(mg/L)				
Total Suspended		1.0	10.0	1.0
Total Dissolved		86.	88.	94.
DISSOLVED ANIONS(mg/L)				
Alkalinity: Bicarbonate	HCO3	48.3	51.0	68.4
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	12.5	11.4	< 1.0
Nitrates	N	0.017	0.015	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	P	0.041	0.042	0.044
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	4.68	4.86	5.58
DISSOLVED METALS(mg/L)				
Aluminum	Al	0.014	0.015	0.012
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.049	0.051	0.18
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.01	< 0.01	< 0.01
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	15.7	16.1	14.8
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.001	< 0.001	< 0.001
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	< 0.030	< 0.030	< 0.030
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	2.45	2.70	3.85
Manganese	Mn	< 0.003	< 0.003	< 0.003
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.34	0.37	0.30
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.80	4.93	5.23
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.68	1.63	1.37
Strontium	Sr	0.056	0.059	0.052
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.010	0.008	0.008
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005

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Crows Nest Resources
File No: 9610E

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
TOTAL METALS (mg/L)				
Aluminum	Al	0.059	0.044	0.027
Antimony	Sb	< 0.001	< 0.001	< 0.001
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.050	0.052	0.18
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.01	< 0.01	< 0.01
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	15.8	16.2	14.8
Chromium	Cr	< 0.001	< 0.001	< 0.001
Cobalt	Co	< 0.001	< 0.001	< 0.001
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	< 0.030	0.034	< 0.030
Lead	Pb	< 0.001	< 0.001	< 0.001
Magnesium	Mg	2.45	2.76	3.85
Manganese	Mn	< 0.003	0.004	< 0.003
Mercury	Hg	<.00005	<.00005	<.0000
Molybdenum	Mo	< 0.005	< 0.005	< 0.005
Nickel	Ni	0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.87	5.01	5.25
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.68	1.65	1.37
Strontium	Sr	0.056	0.059	0.052
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.010	0.008	0.010
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	P	< 0.020	< 0.020	< 0.020
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	0.002	< 0.001
OTHERS				
Ferrous Iron	Fe	< 0.05	< 0.05	< 0.05

mg/L = milligrams per liter
< = Less than = Not Detected

can test ltd.

1523 WEST 3rd AVENUE, VANCOUVER, B.C. V6J 1J8 • TELEPHONE (604) 734-7276 • TELEX 04-54210

Report On Analysis of water samples

File No. 1413F

Report No.

Reported To Crows Nest Resources

P.O. #

P.O. Box 2699, Station "M"

Date August 26, 1983

Calgary, Alberta T2P 2M7

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on July 28, 1983 and report as follows:

SUMMARY:

Although the oil and grease level was essentially zero, a small amount of total organic carbon was detected. Because of the low level of organic carbon found in the water sample, it is virtually impossible to determine if the source was due to oil leaching from the shale, industrial discharge, or biological degradation. An infrared scan could not be run on the sample. If future analyses are required on this sample, a greater volume of the organic layer will have to be collected.

METHOD OF TESTING:

The oil and grease was conducted according to references used in previous reports. The total organic carbon was determined by means of a Dohrman Carbon Analyzer, model DC-80.

RESULTS OF TESTING:

The water sample was submitted in a glass jar. The results of testing are as follows:

CTL#	CL I.D.	DATE SAMPLED	TOTAL ORGANIC CARBON	OIL & GREASE
1413	Pit H_2O	07/28/83	29 mg/L	L2. mg/L

L = Less than = Not Detected
mg/L = Milligrams per liter

CAN TEST LTD.

per

Don M. Enns, B.Sc.,
Chemist

/tw

Form No. 7 L

rec. Aug 24/83

file: Telkwa Water Quality 12.4.5.5.

can test ltd.

1523 WEST 3rd AVENUE, VANCOUVER, B.C. V6J 1J8 • TELEPHONE (604) 734-7276 • TELEX 04-54210

Report On: Analysis of water samples

File No.: 1308F

Report No.:

Reported To: Crows Nest Resources

P.O. Box 2699, Station "M"

Calgary, Alberta T2P 2M7

P.O. #:

Date: August 18, 1983

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on July 19, 1983 and report as follows:

SUMMARY:

There has been very little variation in the parameters tested on a month to month basis. It was noted that there were minor discrepancies in the metals analysis for sample 1308-3. For this sample, the dissolved metal concentration is higher than the total metal in some cases (i.e. copper and zinc). The sample was rechecked and verified in the laboratory. It is felt that the sample could have been subject to slight contamination in the field. It was noted that the total mercury in sample 9, was higher than usual. This result was also rechecked and verified.

SAMPLE IDENTIFICATION:

PROJECT NAME: Telkwa
DATE SAMPLED: July 15-17, 1983

CTL#	STATION	DESCRIPTION	DATE SAMPLED	TEMPERATURE °C
1308-1	TH-01	Cabinet Creek	07/16/83	4.8
-2	TH-02	Four Creek	07/16/83	8.5
-3	TH-03	Tenas Creek	07/15/83	9.4
-4	TH-04	Goathorn	07/15/83	8.0
-5	TH-05	Hubert Creek	07/15/83	15.1
-6	TH-06	Bulkley Upper	07/15/83	14.0
=7	TH-07	Bulkley Lower	07/15/83	14.6
-8	TH-08	Telkwa Upper	07/17/83	10.8
-9	TH-09	Telkwa Lower	07/17/83	9.6
-10	TH-10	Goathorn above BVC	07/16/83	7.7
-11	TH-11	Goathorn below BVC	07/16/83	9.2
-12	TH-12	Goathorn Upper	07/16/83	7.3

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by Can Test Ltd.) preserved as required for testing.

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SAMPLE BOTTLES AND PRESERVATION CHEMICALS

TESTS	TYPE OF BOTTLE	SAMPLE PREPARATION AND/OR PRESERVATION
Physical Tests and Anions	Plastic	Keep Cool
Nutrients (low-level phosphates)	Amber glass	Filtered H2S04
		H2S04
Nutrients	Plastic	HN03
Total Metals	Plastic, acid washed	HN03
Dissolved Metals	Plastic, acid washed	HN03, field filtration
Phenols	Amber glass	CuS04, H3P04
Ferrous Iron	Plastic	NN4C2N302, o-Phenanthroline

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of the Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 15th Edition, 1980 and 14th Edition, 1975, published by the American Public Health Association.

The metals were determined by using Inductively Coupled Plasma Spectroraphic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the "Annual Book of ASTM Standards", May 1982.

RESULTS OF TESTING:

(on the following pages)

CAN TEST LTD.

per Don M. Enns, B.Sc.,
Chemist

/cs

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
PHYSICAL TESTS				
pH		7.40	7.30	7.60
Conductivity(micromhos/cm)		90.2	95.0	108.
Turbidity(JTU)		0.56	3.3	2.2
Hardness(mg/L)	CaC03	44.0	44.5	54.0
SOLIDS(mg/L)				
Total Suspended		1.0	5.0	6.0
Total Dissolved		80.	88.	102.
DISSOLVED ANIONS(mg/L)				
Alkalinity: Bicarbonate	HCO3	36.8	57.8	66.2
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	1.45	0.50	< 0.50
Sulfates	SO4	17.0	< 1.0	6.9
Nitrates	N	0.018	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	PO4	< 0.001	0.002	< 0.001
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	5.33	10.9	7.30
DISSOLVED METALS(mg/L)				
Aluminum	Al	0.016	0.66	0.094
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.012	0.047	0.026
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.029	0.029	0.026
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	14.6	12.5	16.2
Chromium	Cr	< 0.005	< 0.005	0.037
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	0.063
Iron	Fe	< 0.030	0.25	0.40
Lead	Pb	< 0.001	< 0.001	0.004
Magnesium	Mg	1.58	5.45	3.02
Manganese	Mn	< 0.003	< 0.003	0.006
Molybdenum	Mo	< 0.04	< 0.04	< 0.04
Nickel	Ni	< 0.005	< 0.005	0.007
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.26	0.25	0.16
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.52	9.17	7.55
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.09	3.02	2.16
Strontium	Sr	0.049	0.078	0.079
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.008	0.016	0.011
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	0.030

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
TOTAL METALS (mg/L)				
Aluminum	Al	0.064	0.66	0.43
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.012	0.049	0.028
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.046	0.053	0.050
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	14.6	12.5	16.2
Chromium	Cr	< 0.005	0.016	0.028
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	0.034
Iron	Fe	0.055	0.52	0.40
Lead	Pb	0.018	0.020	0.004
Magnesium	Mg	1.60	5.45	3.02
Manganese	Mn	< 0.003	0.008	0.010
Mercury	Hg	<.00005	0.0011	0.00057
Molybdenum	Mo	< 0.04	< 0.04	< 0.04
Nickel	Ni	< 0.005	< 0.005	0.007
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	-	-	-
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.56	10.4	9.27
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.09	3.02	2.20
Strontium	Sr	0.049	0.078	0.079
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.029	0.050	0.043
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	0.007	0.006	0.011
POLLUTANT TESTS (mg/L)				
Total Phosphate	PO4	0.021	< 0.020	< 0.020
Ammonia Nitrogen	N	0.042	0.054	< 0.010
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
Ferrous Iron		0.06	0.68	0.14

mg/L = milligrams per liter
< = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-5	TH-06
PHYSICAL TESTS				
pH		7.60	7.75	7.45
Conductivity(micromhos/cm)		94.2	158.	59.0
Turbidity(JTU)		2.8	1.5	2.0
Hardness(mg/L)	CaCO3	46.0	87.0	27.0
SOLIDS(mg/L)				
Total Suspended		5.0	2.0	11.0
Total Dissolved		87.	157.	56.
DISSOLVED ANIONS(mg/L)				
Alkalinity: Bicarbonate	HCO3	45.6	101.	32.6
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil.
Chlorides	Cl	0.50	0.50	< 0.50
Sulfates	SO4	17.4	12.4	7.0
Nitrates	N	0.010	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	PO4	< 0.001	0.018	< 0.001
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	5.52	10.9	5.41
DISSOLVED METALS(mg/L)				
Aluminum	Al	0.058	0.037	0.042
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.051	0.045	0.020
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.017	0.040	0.024
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	13.9	23.8	8.59
Chromium	Cr	< 0.005	0.010	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.003	0.018	< 0.001
Iron	Fe	0.048	0.58	0.056
Lead	Pb	< 0.001	< 0.001	0.002
Magnesium	Mg	2.56	6.48	1.33
Manganese	Mn	< 0.003	0.072	0.005
Molybdenum	Mo	< 0.04	< 0.04	< 0.04
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.26	0.32	0.32
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.89	10.6	5.30
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.43	2.91	1.19
Strontium	Sr	0.051	0.099	0.040
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.008	0.009	0.009
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	0.006

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-5	TH-06
TOTAL METALS (mg/L)				
Aluminum	Al	0.36	0.094	0.48
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.052	0.045	0.027
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.043	0.056	0.047
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	13.9	23.8	8.72
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.019	0.018	< 0.001
Iron	Fe	0.32	0.73	0.47
Lead	Pb	0.012	0.006	0.004
Magnesium	Mg	2.56	6.47	1.44
Manganese	Mn	0.011	0.078	0.024
Mercury	Hg	<.00005	0.00013	<.00005
Molybdenum	Mo	< 0.04	< 0.04	< 0.04
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	-	-	-
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	7.10	11.1	7.23
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.43	2.91	1.26
Strontium	Sr	0.051	0.099	0.042
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.047	0.036	0.045
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	0.017	0.013	0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	PO4	< 0.020	0.027	0.026
Ammonia Nitrogen	N	< 0.010	0.11	0.029
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
Ferrous Iron		1.14	0.84	0.37

mg/L = milligrams per liter
< = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
PHYSICAL TESTS				
pH		7.60	7.30	7.40
Conductivity (micromhos/cm)		69.0	64.0	74.3
Turbidity (JTU)		2.0	5.2	3.8
Hardness (mg/L)	CaCO3	46.5	30.0	37.5
SOLIDS (mg/L)				
Total Suspended		8.5	18.0	14.5
Total Dissolved		67.	60.	71.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	39.8	34.8	41.5
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	5.0	8.9	9.3
Nitrates	N	< 0.010	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	PO4	0.010	< 0.001	< 0.001
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	6.16	5.16	5.41
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.026	0.040	0.048
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.029	0.024	0.032
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.023	0.016	0.018
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	13.3	9.62	11.7
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	0.16	0.045	0.076
Lead	Pb	0.003	0.004	0.003
Magnesium	Mg	2.95	1.39	1.91
Manganese	Mn	0.024	0.007	0.005
Molybdenum	Mo	< 0.04	< 0.04	< 0.04
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.32	0.23	0.24
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	7.06	4.95	5.44
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.71	1.07	1.29
Strontium	Sr	0.059	0.049	0.053
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.009	0.007	0.009
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	< 0.005

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
TOTAL METALS (mg/L)				
Aluminum	Al	0.31	1.22	0.88
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.031	0.040	0.043
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.047	0.040	0.036
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	13.3	9.94	11.7
Chromium	Cr	< 0.005	0.020	0.10
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.002	0.020	0.046
Iron	Fe	0.52	1.05	1.10
Lead	Pb	0.012	0.004	0.005
Magnesium	Mg	2.95	1.77	2.14
Manganese	Mn	0.037	0.037	0.27
Mercury	Hg	0.00005	0.0016	0.003
Molybdenum	Mo	< 0.04	< 0.04	< 0.04
Nickel	Ni	< 0.005	0.009	0.026
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	-	-	-
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	8.65	11.2	9.81
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.80	1.45	1.53
Strontium	Sr	0.059	0.054	0.056
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.042	0.10	0.054
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	0.021	0.020
POLLUTANT TESTS (mg/L)				
Total Phosphate	PO4	0.021	0.023	0.021
Ammonia Nitrogen	N	0.051	0.052	0.093
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
Ferrous Iron		0.60	0.30	0.22

mg/L = milligrams per liter
< = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-12	TH-12
PHYSICAL TESTS				
pH		7.45	7.65	7.50
Conductivity (micromhos/cm)		90.6	90.2	77.0
Turbidity (JTU)		0.94	1.0	1.2
Hardness (mg/L)	CaCO3	45.0	46.0	40.0
SOLIDS (mg/L)				
Total Suspended		1.0	4.0	< 0.5
Total Dissolved		82.	84.	75.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	43.9	45.1	48.6
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	0.50	< 0.50
Sulfates	SO4	14.8	15.4	5.5
Nitrates	N	< 0.010	< 0.010	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	PO4	< 0.001	0.001	< 0.001
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	5.52	5.92	6.23
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.023	0.053	0.041
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.050	0.049	0.14
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.012	0.012	< 0.01
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	13.7	13.8	10.8
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	< 0.001	< 0.001
Iron	Fe	< 0.030	0.040	0.049
Lead	Pb	< 0.001	< 0.001	0.003
Magnesium	Mg	2.24	2.42	2.84
Manganese	Mn	< 0.003	< 0.003	< 0.003
Molybdenum	Mo	< 0.04	< 0.04	< 0.04
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.26	0.27	0.19
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.48	5.68	5.62
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.46	1.38	1.02
Strontium	Sr	0.048	0.049	0.037
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.012	0.008	0.009
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	< 0.005	< 0.005	0.005

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-12	TH-12
TOTAL METALS (mg/L)				
Aluminum	Al	0.11	0.14	0.094
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.050	0.049	0.14
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.031	0.028	0.032
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	13.7	13.8	10.8
Chromium	Cr	0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.011	0.004	0.004
Iron	Fe	0.11	0.14	0.14
Lead	Pb	0.004	0.006	0.005
Magnesium	Mg	2.24	2.42	2.84
Manganese	Mn	0.004	0.005	0.006
Mercury	Hg	0.00005	0.00020	<.00005
Molybdenum	Mo	< 0.04	< 0.04	< 0.04
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	-	-	-
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.76	6.22	5.91
Silver	Ag	< 0.005	< 0.005	< 0.005
Sodium	Na	1.50	1.48	1.14
Strontium	Sr	0.048	0.049	0.037
Tin	Sn	< 0.03	< 0.03	< 0.03
Titanium	Ti	0.029	0.028	0.030
Vanadium	V	< 0.01	< 0.01	< 0.01
Zinc	Zn	0.005	0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	PO4	< 0.020	< 0.020	< 0.020
Ammonia Nitrogen	N	0.011	0.024	0.023
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001

mg/L = milligrams per liter
< = Less than = Not Detected

test ltd.

1523 WEST 3rd AVENUE, VANCOUVER, B.C. V6J 1J8 • TELEPHONE (604) 734-7276 • TELEX 04-54210

File 1045.5
Telkwa Water Quality
(contract sample)

Report On: Analysis of water samples

File No.: 0970F

Report No.:

Reported To: Crows Nest Resources
P.O. Box 2699, Station "M"
Calgary, Alberta T2P 2M7

P.O. #: CN22372

Date: July 5, 1983

Attention: Mr. Dave Urso

We have tested the samples of water submitted by you on June 14, 1983 and report as follows:

SUMMARY:

The samples were collected and preserved by Don Enns of Can Test Ltd. A total of twelve surface waters and three ground waters were collected. The ground waters were collected by means of a metal-lined, hand-held pump. In order to determine if the hand pump had a positive effect upon actual metal results, a distilled water sample was put through the pump and the water was then analyzed for total metals only. This water sample appears as 0970-16 in this report.

Because ferrous iron oxidizes so readily to ferric iron in the presence of oxygen, it was impossible to detect below 0.10 milligrams per liter. In the future, if ferrous iron determinations are required, a separate sample bottle with special preservations chemicals will be provided.

SAMPLE IDENTIFICATION:

PROJECT NAME: Telkwa
DATE SAMPLED: June 9-11, 1983

CTL#	Station	Date Sampled
0970-1	TH-01	06/11/83
-2	TH-02	06/10/83
-3	TH-03	06/09/83
-4	TH-04	06/09/83
-5	TH-05	06/10/83
-6	TH-06	06/10/83
-7	TH-07	06/10/83
-8	TH-08	06/10/83
-9	TH-09	06/10/83
-10	TH-10	06/09/83

...../2

SAMPLE IDENTIFICATION: CON'T

CTL#	Station	Date Sampled
0970-11	TH-11	06/10/83
-12	TH-12	06/11/83
-13	255	06/09/83
-14	257	06/10/83
-15	258	06/10/83
-16	Blank	06/10/83

with further identification in "Results of Testing".

SAMPLE BOTTLES AND PRESERVATION CHEMICALS:

The samples were received in plastic and glass bottles (provided by Can Test Ltd.) preserved as required for testing.

Tests	Type of Bottle	Sample Preparation and/or Preservation
Physical Tests and Anions	Plastic	Keep cool
Nutrients (low-level phosphates)	Amber glass	Filtered, H_2SO_4
Nutrients	Plastic	H_2SO_4
Total Metals	Plastic, acid washed	HNO_3
Dissolved Metals	Plastic, acid washed	HNO_3, field filtration
Phenols	Amber glass	$CuSO_4$, H_3PO_4

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewaters, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of the Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 15th Edition, 1980 and 14th Edition, 1975, and 13th Edition, 1971, published by the American Public Health Association.

The metals were determined by using Inductively Coupled Plasma Spectrographic analysis, direct or graphite furnace atomic absorption spectrophotometry, or hydride generation. Mercury was determined using a Pharmacia Mercury Monitor (flameless atomic absorption spectrophotometry) after controlled digestion of the sample.

The ferrous iron determination was carried out in accordance with a procedure from the "Annual Book of ASTM Standards", May 1982.

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Don M. Enns, B.Sc.,
Chemist

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Crows Nest Resources
File No: 0970F

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
PHYSICAL TESTS				
pH		7.65	7.95	7.95
Conductivity (micromhos/cm)		88.0	134.	100.
Turbidity (JTU)		0.75	1.6	3.0
Hardness (mg/L)	CaCO3	40.0	68.5	49.5
SOLIDS (mg/L)				
Total Suspended		< 0.5	1.5	4.5
Total Dissolved		81.	130.	100.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	37.9	87.1	67.7
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	19.3	17.0	8.0
Nitrates	N	0.14	0.012	0.014
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	PO4	< 0.001	0.006	0.011
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	7.84	15.6	11.7
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.007	0.050	0.026
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.011	0.044	0.021
Beryllium	Be	< 0.003	< 0.003	< 0.003
ismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.010	0.014	0.011
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	13.3	15.1	14.8
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.007	0.005	< 0.001
Iron	Fe	< 0.030	0.071	0.035
Lead	Pb	0.001	< 0.001	< 0.001
Magnesium	Mg	1.45	6.99	2.77
Manganese	Mn	< 0.003	< 0.003	< 0.003
Molybdenum	Mo	< 0.040	< 0.040	< 0.040
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.27	0.41	0.18
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.31	6.47	5.91
Silver	Ag	< 0.001	< 0.001	< 0.001
Sodium	Na	0.90	3.72	1.94
Strontium	Sr	0.045	0.090	0.074
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	< 0.006	0.011	0.015
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005

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File No: 0970F

RESULTS OF TESTING:

SAMPLE #		1	2	3
CLIENT SAMPLE I.D.		TH-01	TH-02	TH-03
TOTAL METALS (mg/L)				
Aluminum	Al	0.012	0.26	0.37
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.012	0.044	0.026
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.023	0.037	0.019
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	13.3	15.1	14.8
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.007	0.007	0.002
Iron	Fe	0.071	0.18	0.23
Lead	Pb	0.007	0.005	0.018
Magnesium	Mg	1.45	6.99	2.78
Manganese	Mn	0.004	0.004	0.009
Mercury	Hg	<.00005	0.00005	0.00011
Molybdenum	Mo	< 0.040	< 0.040	< 0.040
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.51	11.0	7.57
Silver	Ag	< 0.001	< 0.001	< 0.001
Sodium	Na	0.90	3.72	1.94
Strontium	Sr	0.045	0.090	0.074
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.036	0.044	0.055
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	PO4	< 0.020	< 0.020	0.027
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
Ferrous Iron (mg/L)	Fe	< 0.10	< 0.10	< 0.10
Temperature* C		-	-	9.3

mg/L = milligrams per liter
< = Less than = Not Detected
* = The temperature was only taken at four locations because the themometer was later broken in transit.

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
PHYSICAL TESTS				
pH		7.80	7.90	7.80
Conductivity (micromhos/cm)		85.0	194.	81.5
Turbidity (JTU)		1.5	3.0	9.5
Hardness (mg/L)	CaCO3	41.5	109.	41.0
SOLIDS (mg/L)				
Total Suspended		1.5	3.5	16.5
Total Dissolved		82.	194.	82.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	44.5	133.	50.9
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	17.0	17.4	9.8
Nitrates	N	0.028	0.024	0.027
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	PO4	< 0.001	0.011	0.005
Ortho Phosphates	P	< 0.001	0.008	< 0.001
Silica	SiO2	8.16	15.1	10.4
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.018	0.005	0.009
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.045	0.063	0.028
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.010	< 0.010	< 0.010
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	12.7	28.9	12.3
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	0.005	0.003
Iron	Fe	< 0.030	0.79	0.21
Lead	Pb	0.004	0.001	0.002
Magnesium	Mg	2.27	7.49	2.40
Manganese	Mn	< 0.003	0.26	0.060
Molybdenum	Mo	< 0.040	< 0.040	< 0.040
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.29	0.46	0.34
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.16	8.35	4.65
Silver	Ag	< 0.001	< 0.001	< 0.001
Sodium	Na	1.13	2.82	1.29
Strontium	Sr	0.046	0.12	0.054
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.019	< 0.006	< 0.006
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005

RESULTS OF TESTING:

SAMPLE #		4	5	6
CLIENT SAMPLE I.D.		TH-04	TH-05	TH-06
TOTAL METALS (mg/L)				
Aluminum	Al	0.24	0.21	1.03
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.045	0.067	0.036
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.010	0.028	0.012
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	12.7	28.9	12.6
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.002	0.006	0.007
Iron	Fe	0.17	1.27	1.03
Lead	Pb	0.004	0.004	0.006
Magnesium	Mg	2.28	7.49	2.58
Manganese	Mn	0.007	0.26	0.085
Mercury	Hg	0.00008	<.00005	0.00010
Molybdenum	Mo	< 0.040	< 0.040	< 0.040
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	5.75	9.67	8.86
Silver	Ag	< 0.001	< 0.001	< 0.001
Sodium	Na	1.14	2.82	1.30
Strontium	Sr	0.046	0.12	0.054
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.036	0.028	0.066
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	PO4	< 0.020	0.055	0.036
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
Ferrous Oxide (mg/L)	Fe	< 0.10	< 0.10	< 0.10
Temperature C		7.7	-	-

mg/L = milligrams per liter
< = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
PHYSICAL TESTS				
pH		7.75	7.60	7.85
Conductivity (micromhos/cm)		78.5	54.3	89.6
Turbidity (JTU)		14.	13.	3.2
Hardness (mg/L)	CaCO3	40.0	26.5	42.5
SOLIDS (mg/L)				
Total Suspended		19.0	18.5	3.5
Total Dissolved		79.	55.	85.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	48.9	32.5	49.6
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	9.8	7.5	13.2
Nitrates	N	0.023	< 0.010	0.032
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	PO4	0.005	< 0.001	0.002
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	10.1	8.47	9.18
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.011	0.026	0.026
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.026	0.022	0.039
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.010	< 0.010	0.012
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	12.1	8.33	12.7
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.003	0.001	0.004
Iron	Fe	0.18	0.045	0.034
Lead	Pb	0.002	0.001	< 0.001
Magnesium	Mg	2.35	1.23	2.32
Manganese	Mn	0.052	0.007	0.003
Molybdenum	Mo	< 0.040	< 0.040	< 0.040
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.33	0.24	0.26
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.52	4.16	4.74
Silver	Ag	< 0.001	< 0.001	< 0.001
Sodium	Na	1.19	0.86	1.46
Strontium	Sr	0.051	0.045	0.052
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.015	0.007	0.006
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005

RESULTS OF TESTING:

SAMPLE #		7	8	9
CLIENT SAMPLE I.D.		TH-07	TH-08	TH-09
TOTAL METALS (mg/L)				
Aluminum	Al	1.11	1.17	0.37
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.037	0.033	0.046
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.010	0.010	0.018
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	12.5	8.33	12.7
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.007	0.007	0.007
Iron	Fe	1.22	0.85	0.28
Lead	Pb	0.005	0.005	0.006
Magnesium	Mg	2.68	1.46	2.34
Manganese	Mn	0.090	0.036	0.011
Mercury	Hg	<.00005	0.00007	<.00005
Molybdenum	Mo	< 0.040	< 0.040	< 0.040
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	8.94	9.61	5.89
Silver	Ag	< 0.001	< 0.001	< 0.001
Sodium	Na	1.31	0.97	1.46
Strontium	Sr	0.053	0.046	0.052
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.064	0.070	0.036
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	PO4	0.042	0.038	< 0.020
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
Ferrous Oxide (mg/L)	Fe	< 0.10	< 0.10	< 0.10

mg/L = milligrams per liter
< = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
PHYSICAL TESTS				
pH		7.75	7.75	7.65
Conductivity(micromhos/cm)		83.9	83.9	62.2
Turbidity(JTU)		1.5	2.5	1.4
Hardness(mg/L)	CaCO3	39.2	40.0	32.5
SOLIDS(mg/L)				
Total Suspended		0.5	3.5	0.5
Total Dissolved		79.	78.	62.
DISSOLVED ANIONS(mg/L)				
Alkalinity: Bicarbonate	HCO3	41.6	40.9	40.2
Alkalinity: Carbonate	CO3	Nil	Nil	Nil
Alkalinity: Hydroxide	OH	Nil	Nil	Nil
Chlorides	Cl	< 0.50	< 0.50	< 0.50
Sulfates	SO4	17.1	16.9	7.5
Nitrates	N	0.051	0.044	< 0.010
Nitrites	N	< 0.002	< 0.002	< 0.002
Total Phosphates	PO4	0.002	0.003	< 0.001
Ortho Phosphates	P	< 0.001	< 0.001	< 0.001
Silica	SiO2	7.26	8.54	9.75
DISSOLVED METALS(mg/L)				
Aluminum	Al	0.018	0.030	0.031
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.044	0.045	0.12
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	< 0.010	< 0.010	< 0.010
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	12.4	12.3	8.83
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	< 0.001	0.003	0.003
Iron	Fe	< 0.030	< 0.030	0.084
Lead	Pb	0.002	0.001	< 0.001
Magnesium	Mg	1.96	2.12	2.33
Manganese	Mn	< 0.003	0.004	< 0.003
Molybdenum	Mo	< 0.040	< 0.040	< 0.040
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	0.28	0.28	0.22
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.12	4.19	4.41
Silver	Ag	< 0.001	< 0.001	< 0.001
Sodium	Na	1.27	1.07	0.81
Strontium	Sr	0.043	0.043	0.031
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.018	< 0.006	< 0.006
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005

RESULTS OF TESTING:

SAMPLE #		10	11	12
CLIENT SAMPLE I.D.		TH-10	TH-11	TH-12
TOTAL METALS (mg/L)				
Aluminum	Al	0.042	0.31	0.055
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	< 0.001	< 0.001	< 0.001
Barium	Ba	0.046	0.050	0.12
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.023	0.056	0.013
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	12.5	12.3	8.83
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.005	0.006	0.007
Iron	Fe	0.095	0.30	0.12
Lead	Pb	0.007	0.004	0.003
Magnesium	Mg	2.00	2.16	2.33
Manganese	Mn	0.005	0.013	0.006
Mercury	Hg	0.00008	0.00005	0.00010
Molybdenum	Mo	< 0.040	< 0.040	< 0.040
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	4.57	5.64	4.59
Silver	Ag	< 0.001	< 0.001	< 0.001
Sodium	Na	1.31	1.13	0.81
Strontium	Sr	0.044	0.043	0.031
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.030	0.045	< 0.006
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	< 0.005	< 0.005	< 0.005
POLLUTANT TESTS (mg/L)				
Total Phosphate	PO4	0.084	0.022	< 0.020
Ammonia Nitrogen	N	< 0.01	< 0.01	< 0.01
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
Ferrous Oxide (mg/L)	Fe	< 0.10	< 0.10	< 0.10
Temperature C		7.4	-	-

mg/L = milligrams per liter
< = Less than = Not Detected

CAN TEST LTD.

Crows Nest Resources
File No: 0970F

RESULTS OF TESTING:

SAMPLE #		13	14	15
CLIENT SAMPLE I.D.		255	257	258
PHYSICAL TESTS				
pH		8.00	8.55	11.20
Conductivity (micromhos/cm)		401.	668.	1150.
Turbidity (JTU)		4.5	11.	5.0
Hardness (mg/L)	CaCO3	85.0	56.0	6.0
SOLIDS (mg/L)				
Total Suspended		16.5	135.	10.
Total Dissolved		312.	668.	550.
DISSOLVED ANIONS (mg/L)				
Alkalinity: Bicarbonate	HCO3	95.2	440.	Nil
Alkalinity: Carbonate	CO3	Nil	10.6	92.4
Alkalinity: Hydroxide	OH	Nil	Nil	53.0
Chlorides	Cl	57.7	3.42	36.2
Sulfates	SO4	55.2	30.0	55.0
Nitrates	N	0.032	0.032	0.10
Nitrites	N	0.005	0.003	0.009
Total Phosphates	PO4	0.022	0.011	0.008
Ortho Phosphates	P	0.004	0.008	0.003
Silica	SiO2	11.0	12.0	14.4
DISSOLVED METALS (mg/L)				
Aluminum	Al	0.028	0.23	0.29
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	0.001	0.002	0.001
Barium	Ba	0.035	0.081	0.051
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.027	0.080	0.068
Cadmium	Cd	< 0.001	< 0.001	< 0.001
Calcium	Ca	25.2	15.3	2.28
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.016	0.016	0.042
Iron	Fe	0.12	0.045	0.032
Lead	Pb	0.024	0.004	0.030
Magnesium	Mg	5.16	3.65	0.021
Manganese	Mn	0.049	0.22	< 0.003
Molybdenum	Mo	< 0.040	0.076	< 0.040
Nickel	Ni	< 0.005	< 0.005	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Potassium	K	2.41	3.06	8.72
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	7.09	7.13	8.42
Silver	Ag	< 0.001	< 0.001	< 0.001
Sodium	Na	63.6	174.	167.
Strontium	Sr	0.11	0.14	0.29
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	< 0.006	0.017	0.008
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	0.093	0.062	0.062

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RESULTS OF TESTING:

SAMPLE #		13	14	15
CLIENT SAMPLE I.D.		255	257	258
TOTAL METALS (mg/L)				
Aluminum	Al	0.30	10.8	0.68
Antimony	Sb	< 0.15	< 0.15	< 0.15
Arsenic	As	0.001	0.004	0.003
Barium	Ba	0.038	0.13	0.059
Beryllium	Be	< 0.003	< 0.003	< 0.003
Bismuth	Bi	< 0.5	< 0.5	< 0.5
Boron	B	0.033	0.080	0.068
Cadmium	Cd	< 0.001	0.005	< 0.001
Calcium	Ca	25.2	15.3	3.17
Chromium	Cr	< 0.005	< 0.005	< 0.005
Cobalt	Co	< 0.005	< 0.005	< 0.005
Copper	Cu	0.092	0.17	0.46
Iron	Fe	0.55	3.42	0.32
Lead	Pb	0.033	0.040	0.096
Magnesium	Mg	5.24	4.27	0.099
Manganese	Mn	0.053	0.26	0.008
Mercury	Hg	0.00010	<.00005	0.00015
Molybdenum	Mo	< 0.040	0.076	< 0.040
Nickel	Ni	0.005	0.015	< 0.005
Phosphorus	PO4	< 0.4	< 0.4	< 0.4
Selenium	Se	< 0.001	< 0.001	< 0.001
Silicon	SiO2	9.82	39.0	11.3
Silver	Ag	< 0.001	< 0.001	< 0.001
Sodium	Na	63.6	174.	167.
Strontium	Sr	0.11	0.15	0.30
Tin	Sn	< 0.030	< 0.030	< 0.030
Titanium	Ti	0.038	0.43	0.048
Vanadium	V	< 0.010	< 0.010	< 0.010
Zinc	Zn	0.14	0.24	0.24
POLLUTANT TESTS (mg/L)				
Total Phosphate	PO4	0.16	0.10	0.051
Ammonia Nitrogen	N	1.79	0.22	2.03
Total Phenolics as Phenol		< 0.001	< 0.001	< 0.001
OTHERS				
Ferrous Iron (mg/L)	Fe	< 0.10	< 0.10	< 0.10
Temperature C		7.2	-	-

mg/L = milligrams per liter
< = Less than = Not Detected

RESULTS OF TESTING:

SAMPLE #		16
CLIENT SAMPLE I.D.		BLANK
PHYSICAL TESTS		
pH		-
Conductivity(micromhos/cm)		-
Turbidity(JTU)		-
Hardness(mg/L)	CaCO3	-
SOLIDS(mg/L)		
Total Suspended		-
Total Dissolved		-
DISSOLVED ANIONS(mg/L)		
Alkalinity: Bicarbonate	HCO3	-
Alkalinity: Carbonate	CO3	-
Alkalinity: Hydroxide	OH	-
Chlorides	Cl	-
Sulfates	SO4	-
Nitrates	N	-
Nitrites	N	-
Total Phosphates	PO4	-
Ortho Phosphates	P	-
Silica	SiO2	-
DISSOLVED METALS(mg/L)		
Aluminum	Al	-
Antimony	Sb	-
Arsenic	As	-
Barium	Ba	-
Beryllium	Be	-
ismuth	Bi	-
Boron	B	-
Cadmium	Cd	-
Calcium	Ca	-
Chromium	Cr	-
Cobalt	Co	-
Copper	Cu	-
Iron	Fe	-
Lead	Pb	-
Magnesium	Mg	-
Manganese	Mn	-
Molybdenum	Mo	-
Nickel	Ni	-
Phosphorus	PO4	-
Potassium	K	-
Selenium	Se	-
Silicon	SiO2	-
Silver	Ag	-
Sodium	Na	-
Strontium	Sr	-
Tin	Sn	-
Titanium	Ti	-
Uranium	U	-
Vanadium	V	-
Zinc	Zn	-

RESULTS OF TESTING:

SAMPLE #		16
CLIENT SAMPLE I.D.		BLANK
TOTAL METALS (mg/L)		
Aluminum	Al	0.022
Antimony	Sb	< 0.15
Arsenic	As	< 0.001
Barium	Ba	0.006
Beryllium	Be	< 0.003
Bismuth	Bi	< 0.5
Boron	B	0.015
Cadmium	Cd	< 0.001
Calcium	Ca	0.070
Chromium	Cr	< 0.005
Cobalt	Co	< 0.005
Copper	Cu	0.051
Iron	Fe	< 0.030
Lead	Pb	0.009
Magnesium	Mg	0.020
Manganese	Mn	< 0.003
Mercury	Hg	0.00010
Molybdenum	Mo	< 0.040
Nickel	Ni	< 0.005
Phosphorus	PO4	< 0.4
Selenium	Se	< 0.001
Silicon	SiO2	1.14
Silver	Ag	< 0.001
Sodium	Na	0.69
Strontium	Sr	0.002
Tin	Sn	< 0.030
Titanium	Ti	0.025
Vanadium	V	< 0.010
Zinc	Zn	< 0.005
POLLUTANT TESTS (mg/L)		
Total Phosphate	PO4	-
Ammonia Nitrogen	N	-
Total Phenolics as Phenol		-
OTHERS		
Ferrous Iron (mg/L)	Fe	-

mg/L = milligrams per liter
< = Less than = Not Detected