

Lara
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92B/13

ASL

CHEMICAL ANALYSIS REPORT

Date: January 11, 1990
File No. 9848A
Report On: Water Analysis - Lara Project
Report To: Minnova Inc.
Box 720
Chemainus, B.C.
V0R 1K0
Attention: Roy Knight cc: Minnova - Vancouver
B. Hallam

DATE OF SUBMISSION: Dec. 15/89

SAMPLE IDENTIFICATION

Labelled as shown in RESULTS section.


METHODOLOGY

Analysed in accordance with "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, 1985.

RESULTS OF ANALYSIS

Results are presented in the table(s) attached.

ASL ANALYTICAL SERVICE LABORATORIES LTD.


Barbara Szczachor, B.Sc.
Supervisor
Water Quality Laboratory


Nelida Parreno, B.Sc.

BS/NP/dmc

.../report/jan/minnova9848



analytical service laboratories ltd.

CONSULTING CHEMISTS & ANALYSTS
1650 Pandora Street
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Fax (604) 253-6700 • Tel. (604) 253-4188

RESULTS OF ANALYSIS

File No. 9848A
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		Ore File Dec 13/89	Monitor Pond Dec 13/89	Upper Solly Crk. Dec 13/89	Lower Solly Crk. Dec 13/89
<u>Physical Tests</u>					
pH		7.60	7.44	7.85	6.81
Alkalinity	CaCO ₃	55.7	136.	5.9	8.5
Sulphate	SO ₄	191.	1890.	2.3	7.2
<u>Total Metals</u>					
Aluminium	T Al	0.20	0.036	0.090	0.048
Arsenic	T As	0.0008	0.0019	<0.0001	<0.0001
Copper	T Cu	0.006	0.043	0.003	0.007
Iron	T Fe	0.10	<0.03	<0.03	<0.03
Lead	T Pb	0.003	0.037	<0.001	<0.001
Zinc	T Zn	10.3	62.8	<0.005	<0.005
<u>Dissolved Metals</u>					
Aluminium	D Al	<0.005	<0.005	0.076	0.039
Arsenic	D As	0.0006	0.0009	<0.0001	<0.0001
Copper	D Cu	0.002	0.009	0.002	<0.001
Iron	D Fe	<0.03	<0.03	<0.03	<0.03
Lead	D Pb	<0.001	0.011	<0.001	<0.001
Zinc	D Zn	9.12	54.0	<0.005	<0.005

< = Less than

Results expressed as milligrams per litre except for pH.

RESULTS OF ANALYSIS

File No. 9848A
Page 2 of 2

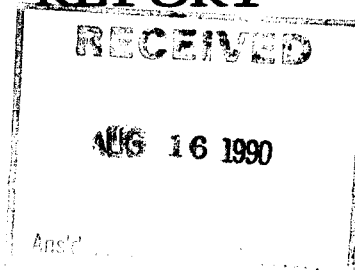
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Zinc	D Zn	9.12	54.0	<0.005	<0.005

< = Less than

Results expressed as milligrams per litre except for pH.

→ Gary
ASL

CHEMICAL ANALYSIS REPORT



Date: Aug. 14, 1990

ASL File No. 2423B

Report On: Lara Project Water Analysis

Report To: Minnova Inc.
P.O. Box 720
Chemainus, BC
V0R 1K0

Attention: Mr. Roy Knight

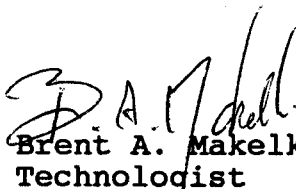
cc: Minnova Inc. - Vancouver, BC

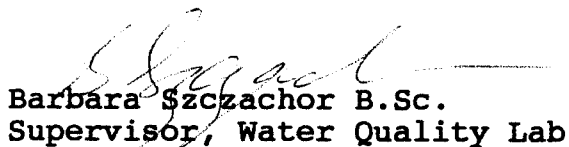
Date Received: Jul. 17, 1990

METHODOLOGY

Analysed in accordance with "Standard Methods for the Examination of Water and Wastewater" Published by the American Public Health Association, 1985.

ASL ANALYTICAL SERVICE LABORATORIES LTD.


Brent A. Makelki B.Sc.
Technologist


Barbara Szczachor B.Sc.
Supervisor, Water Quality Lab



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CONSULTING CHEMISTS & ANALYSTS
1650 Pandora Street
Vancouver, B.C. • V5L 1L6
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RESULTS OF ANALYSIS - Water

File No. 2423B
Page 2

Parameter		Upper Solly	Lower Solly	Adit	Monitor Pond
		Jul16/90	Jul16/90	Jul16/90	Jul16/90
<u>Physical Tests</u>					
pH		7.35	6.72	7.70	8.30
<u>Dissolved Anions</u>					
Alkalinity	CaCO3	11.4	12.4	72.0	35.2
Sulphate	SO4	2.3	10.6	12.8	13.4
<u>Total Metals</u>					
Aluminum	T-Al	0.066	0.080	0.071	0.110
Arsenic	T-As	0.0001	0.0001	0.0010	0.0019
Copper	T-Cu	0.001	<0.001	0.004	0.005
Iron	T-Fe	<0.030	<0.030	<0.030	<0.030
Lead	T-Pb	0.001	<0.001	0.002	0.006
Zinc	T-Zn	<0.005	<0.005	0.100	0.012
<u>Dissolved Metals</u>					
Aluminum	D-Al	0.066	0.056	0.065	0.110
Arsenic	D-As	0.0001	0.0001	0.0005	0.0010
Copper	D-Cu	<0.001	<0.001	<0.001	<0.001
Iron	D-Fe	<0.030	<0.030	<0.030	<0.030
Lead	D-Pb	<0.001	<0.001	<0.001	0.002
Zinc	D-Zn	<0.005	<0.005	0.084	0.012

< = less than

Results are expressed as milligrams per litre except for pH.

JSW

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Ans'd

CHEMICAL ANALYSIS REPORT

Date: Nov. 08, 1990

ASL File No. 3579B

Report On: Water Analysis (Lara Project)

Report To: Minnova Inc.
3 RD. Floor
311 Water St.
Vancouver, BC

cc: Roy Knight -
Minnova Inc., Chemainus, BC

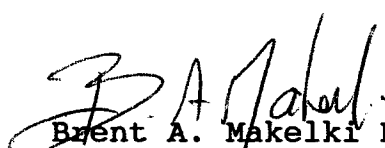
Date Received: Oct. 17, 1990

METHODOLOGY

Conventional Parameters

Analysed in accordance with "Standard Methods for the Examination of Water and Wastewater" Published by the American Public Health Association, 1985.

ASL ANALYTICAL SERVICE LABORATORIES LTD.


Brent A. Makelki B.Sc.
Project Chemist


Barbara Szczachor B.Sc.
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RESULTS OF ANALYSIS - Water

File No. 3579B
Page 2

Parameter		Adit Oct15/90	Monitor Pond Oct15/90	Upper Solly Oct15/90	Lower Solly Oct15/90
<u>Physical Tests</u>					
pH		8.05	7.88	7.25	7.16
<u>Dissolved Anions</u>					
Alkalinity	CaCO3	79.0	44.4	7.6	9.8
Sulphate	SO4	11.5	66.3	<1.0	1.2
<u>Total Metals</u>					
Aluminum	T-Al	0.060	0.150	0.112	0.040
Arsenic	T-As	0.0006	0.0005	<0.0001	<0.0001
Copper	T-Cu	0.001	0.001	<0.001	<0.001
Iron	T-Fe	0.360	<0.030	<0.030	<0.030
Lead	T-Pb	0.003	0.008	<0.001	<0.001
Zinc	T-Zn	0.120	0.110	0.005	<0.005
<u>Dissolved Metals</u>					
Aluminum	D-Al	0.020	0.021	0.096	0.039
Arsenic	D-As	0.0002	0.0003	<0.0001	<0.0001
Copper	D-Cu	<0.001	<0.001	<0.001	<0.001
Iron	D-Fe	0.270	<0.030	<0.030	<0.030
Lead	D-Pb	0.002	0.003	<0.001	<0.001
Zinc	D-Zn	0.061	0.066	<0.005	<0.005

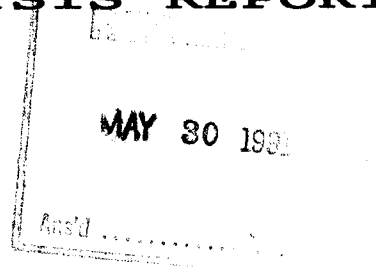
< = less than

Results are expressed as milligrams per litre except for pH.

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CHEMICAL ANALYSIS REPORT

Date: May. 25, 1991
ASL File No. 6195B
Report On: Water Analysis
Report To: Minnova Inc.
3 RD. Floor
311 Water St.
Vancouver, BC



Attention: Mr. John Kapusta
Date Received: May. 14, 1991

METHODOLOGY

Conventional Parameters

These analyses were carried out in accordance with procedures described in "Standard Methods for the Examination of Water and Wastewater" 17th Ed. published by the American Public Health Association, 1989. Further details are available on request.

Metals

These analyses were carried out in accordance with procedures described in "Standard Methods for the Examination of Water and Wastewater" 17th Edition published by the American Public Health Association, 1989. The procedures involve a variety of instrumental analyses involving inductively coupled plasma (ICP) and atomic absorption spectrophotometry (AA) to obtain the required detection limit for each element. Specific details are available on request.

ASL ANALYTICAL SERVICE LABORATORIES LTD.

Robyn Roscoe B.Sc.
Project Chemist

Barbara Szczachor B.Sc.
Supervisor, Water Quality Lab

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RESULTS OF ANALYSIS - Water

File No. 6195B
Page 2

Parameter	Adit May11/91	Waste Pad Runoff May11/91	Monitor Pond May11/91	Upper Solly May11/91	Lower Solly May11/91
<u>Physical Tests</u>					
pH	6.85	6.99	7.49	6.33	6.13
<u>Dissolved Anions</u>					
Alkalinity CaCO3	50.4	147	109	5.4	5.4
Sulphate SO4	9.4	1250	575	1.0	<1.0
<u>Total Metals</u>					
Aluminum T-Al	0.022	0.014	0.009	0.120	0.120
Arsenic T-As	0.0006	0.0009	0.0003	<0.0001	<0.0001
Copper T-Cu	0.007	0.005	<0.001	<0.001	<0.001
Iron T-Fe	0.080	<0.030	0.040	<0.030	<0.030
Lead T-Pb	0.001	0.010	<0.001	<0.001	<0.001
Zinc T-Zn	0.077	73.2	8.72	<0.005	<0.005
<u>Dissolved Metals</u>					
Aluminum D-Al	0.013	0.011	0.008	0.100	0.116
Arsenic D-As	0.0005	0.0009	0.0003	<0.0001	<0.0001
Copper D-Cu	0.007	0.005	<0.001	<0.001	<0.001
Iron D-Fe	0.040	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	<0.001	0.009	<0.001	<0.001	<0.001
Zinc D-Zn	0.073	70.2	8.12	<0.005	<0.005

< = less than detection limit indicated.

Results are expressed as milligrams per litre except for pH.