

**EQUINOX OPERATIONS GROUP**

Geological and Mining Technical Services  
A Division of Equinox Resources Ltd.

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LOG NO: 12-31	RD.
ACTION:	
FILE NO:	

**GEOCHEMISTRY AND HYDROLOGY REPORT  
ON CARNES AND McKINNON CREEKS  
REVELSTOKE MINING DIVISION  
BRITISH COLUMBIA**

**SUB-RECORDER  
RECEIVED  
DEC 20 1990**  
M.R. # ..... \$ .....  
VANCOUVER B.C.

**N.T.S. 82 M/8E**

**BY**

**ROBERT WEICKER, B.Sc.  
EQUINOX OPERATIONS GROUP**

**November 1990**

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**20,716**

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## **1.0 SUMMARY**

The J&L property is located approximately 37 air kilometers north of the town of Revelstoke in the Selkirk Mountain Range. The property is held by Pan American Minerals Corp. and is under option to Equinox Resources Ltd. Exploration efforts over the years have uncovered a significant arsenical gold zinc deposit with minor silver and lead credits.

The Main Zone of the J&L deposit comprises a sheet-like massive sulphide body within a highly deformed shear zone in phyllites and limestones of the Cambrian Hamill Group. The current underground workings are located just north of the junction of Carnes and McKinnon Creeks (Figures 2 and 3), which ultimately flow into the Revelstoke dam reservoirs. Mining would be by underground methods with milling and plant facilities located in the narrow valleys draining these two creeks.

A program of stream geochemistry and hydrology was implemented during the period from August 1989 to spring of 1990. This work involved Equinox personnel and several consultants. The program was designed to collect essential baseline data to support a Stage I submission.

This report presents the baseline geochemical data along with a compilation and review of the water level data by M. Miles and Associates (Appendix I). More detailed analysis and additional sampling data will accompany the actual Stage I submission.

## **2.0 INTRODUCTION**

The geochemistry and hydrology of Carnes and McKinnon Creeks is presented in this report. A sampling and monitoring program was completed to collect essential baseline data to support a Stage 1 submission for Equinox Resources Ltd.

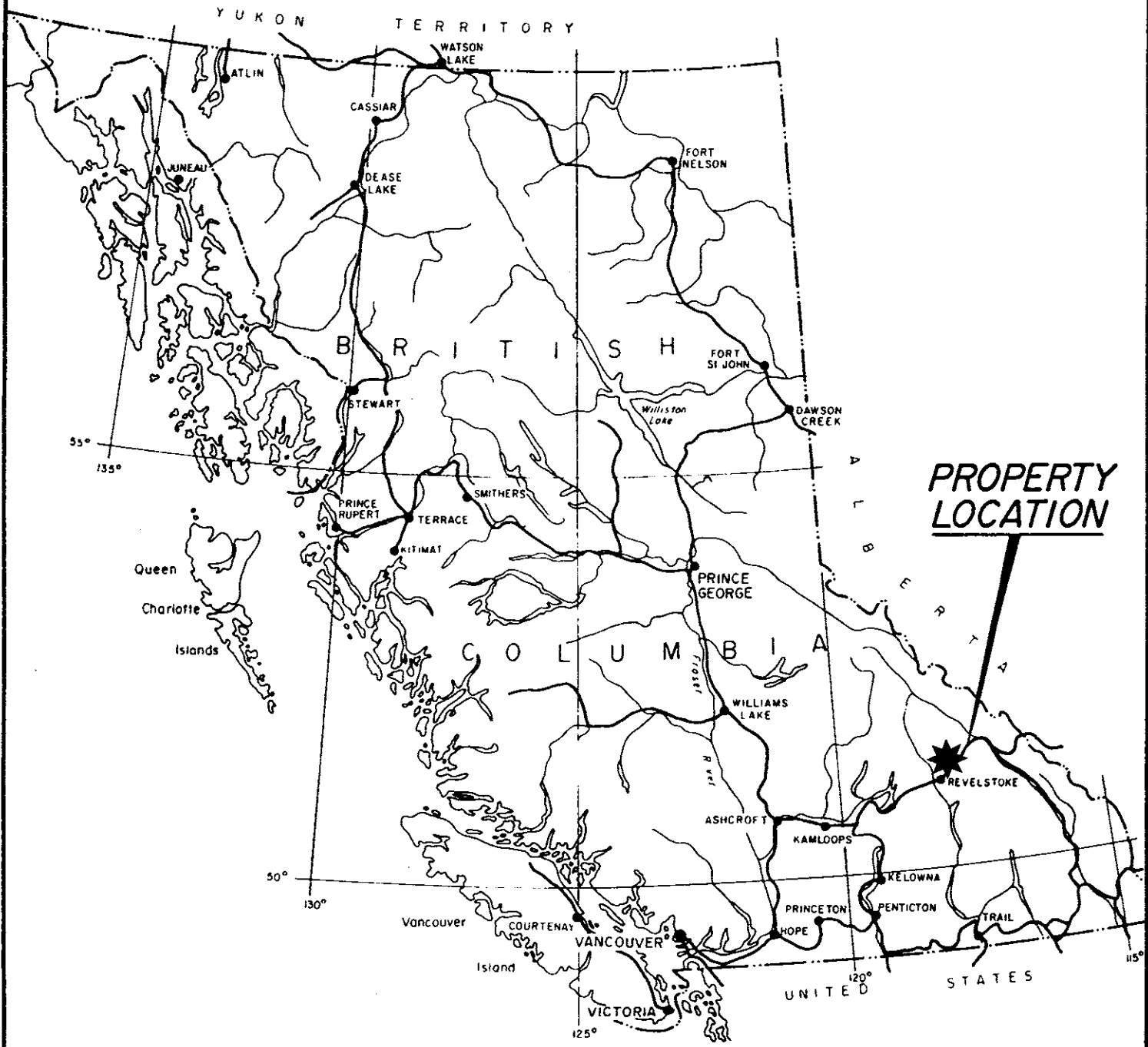
### **3.0 LOCATION, ACCESS AND SETTING**

The property is located along and north of Carnes Creek, approximately 32 air kilometers north of the town of Revelstoke (see Figures 1 and 2), at latitude 51°17'N and longitude 118°08'W.

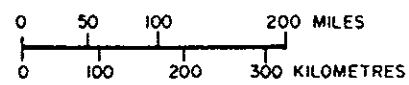
Access is provided by approximately 35 km of paved road (Highway #23), and then a 10 kilometer all-weather road to the property. Helicopter service is also available from Revelstoke. A rough four-wheel drive road and several overgrown walking trails are found within the property.

Maximum relief in the area of the property is 2,349 meters (3,050 to 701 meters). The J&L adits are found at 830 meter elevation and the 986 elevation respectively, and are accessible by road and/or trail. Access throughout most of the property is difficult and slow. The bedrock controlled valley slopes reach 30 to 40 degrees and are densely covered with rotting cedar and hemlock trees. Locally, windfall, deadfall, alders, devils club, stinging nettles and second growth are extensive. Treeline is approximately the 1,980 meter elevation and permanent glaciers are found above 2,286 meters. The property is drained on the south and east by Carnes and McKinnon Creeks and on the west by Kelly Creek.

The winters are long and relatively mild with snowfall from 1 to 4 meters. The summers are moderate with an average rainfall of 65 cm/year and temperatures ranging from 16 to 30 degrees centigrade.



**PROPERTY  
LOCATION**



EQUINOX RESOURCES LTD.	
J & L MINERAL PROJECT REVELSTOKE MD, B.C.	
<b>LOCATION MAP</b>	
SCALE. As shown	DATE.
DRAWN.	FIG. No. 1

#### 4.0 CLAIMS DESCRIPTION AND OWNERSHIP

The J&L property is comprised of (A) 10 crown granted mineral claims, patented claims or lots, whose taxes are assessed by the Vernon Assessment District; (B) eight single unit mineral claims, and (C) 24 multi-unit claim blocks consisting of 349 mineral units. The property totals 367 mineral claim units. All of the claims are located on National Topographic Series map sheet 82M8 - Salmon Arm. The status of these claims was recently reviewed and Figure 2, Claim Map represents the general layout of these claims. Note that one crown grant claim (M-56 L-4815) is currently not part of the property.

The crown granted claims are owned by Mr. T.E. Arnold of New Jersey, U.S.A. and are under lease to Pan American Minerals Corp. subject to 11% net profits royalty after capital, interest and operating costs payback. All other claims are held 100% by Pan American and are subject to the Arnold agreement. The only other agreement in effect on the above mentioned claims is the Equinox-Pan American agreement.

The overall J&L property has been grouped into five groups with the 1989 program located in the Sam and Arty 1 Groups. The Sam Group consists of 83 units and the Arty 1 Group consists of 58 units. The water monitoring stations were located near the junction of Carnes and McKinnon Creek on the Mary claim (refer to Figure 3).

**Table 1.1**

#### Claim Status

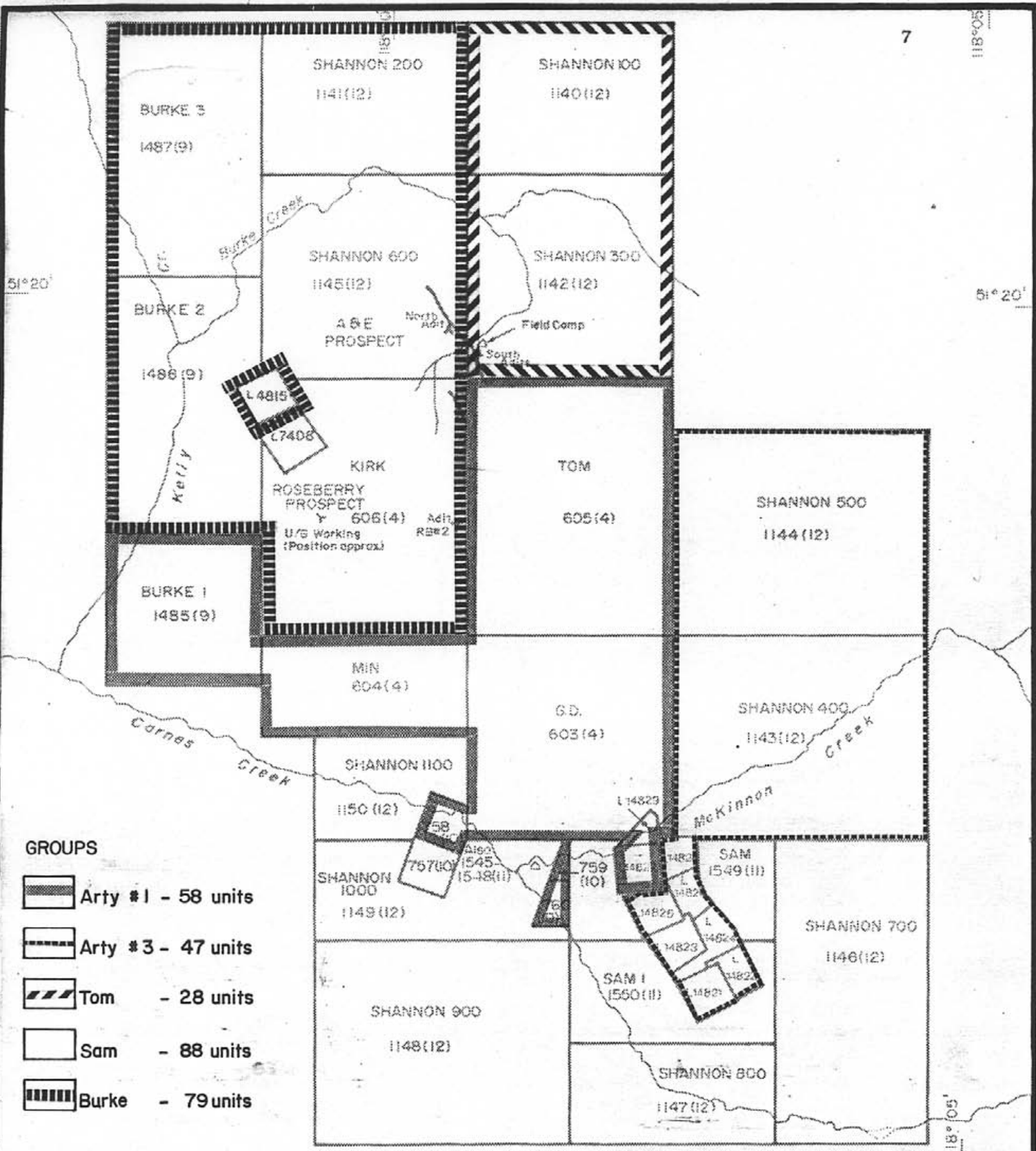
<b>NAME</b>	<b>UNITS</b>	<b>EXPIRY DATE</b>	<b>RECORD NO.</b>
<u>Sam Group</u>			
Sam	8	Nov. 30/94	1549
Sam 1	8	Nov. 30/94	1550
Mary	1	Nov. 30/94	1545
Mary No.1	1	Nov. 30/94	1546
Mary No.2	1	Nv. 30/94	1547
Mary No.3	1	Nov. 30/94	1548
Mary No.4	1	Nov. 30/94	757
Shannon 700	18	Dec. 17/93	1146
Shannon 800	8	Dec. 17/93	1147
Shannon 900	20	Dec. 17/94	1148
Shannon 1000	10	Dec. 17/94	1149
Shannon 1100	6	Dec. 17/94	1150








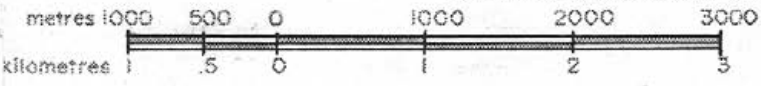
**Table 1.1**

( continued)

<b>NAME</b>	<b>UNITS</b>	<b>EXPIRY DATE</b>	<b>RECORD NO.</b>	<b>LOT NO.</b>
<u>Arty #1 Group</u>				
Creek Fraction	1			L14829
View Fraction	1			L14827
Tom	20	April 17/97	605	
Min	8	April 17/94	604	
G.D.	16	April 17/93	603	
Burke 1	9	Sept. 30/99	1485	
Mary No.5	1	Oct. 10/99	758	
Mary No.6	1	Oct. 10/99	758	
Mary No.7	1	Oct. 10/99	760	



- GROUPS**
-  Art # 1 - 58 units
  -  Art # 3 - 47 units
  -  Tom - 28 units
  -  Sam - 88 units
  -  Burke - 79 units



L 4815 - Hardpan - Not part of J&L property

EQUINOX RESOURCES LTD. - CHENI GOLD MINES INC.	
<b>J &amp; L. PROPERTY</b>	
<b>CLAIM MAP - GROUPING OF TITLES</b>	
EQUINOX OPERATIONS GROUP	
SCALE 1:50000	DATE OCT., 1990
DRAWN RW, GR	FIGURE 2

## **5.0 SCOPE OF PROGRAM - Water Quality Analyses**

### **5.1 Sample Collection, Preservation, and Analyses**

A total of six water quality stations covering two drainage basins were sampled, usually on a monthly basis (refer to Figure 3).

Four bottles (two one-liter, two 250 ml) were filled at each site, following procedures outlined in the field manual. Samples for cyanide analyses were preserved with NaOH to pH of 12 or more and samples collected for general parameters were kept cold. Samples for dissolved metals were returned to the laboratory before being filtered and preserved with HNO<sub>3</sub> to pH of 2 or less and total metal samples were similarly acidified.

Analyses were carried out by Analytical Services Limited of Vancouver using procedures described in "Standard Methods for the Examination of Water and Wastewater", published by the American Public Health Association 1985.

### **5.2 Hydrology**

The hydrology program comprised the installation of automatic water monitoring stations on McKinnon and Carnes Creeks. The instruments were installed in August 1989 with data collected via a portable computer on a monthly basis. Because of the severe cold temperatures the housings for the monitoring equipment required heating by small propane heaters. The discharge data is discussed in Appendix I.

A preliminary investigation into areas of potential flooding was also completed (Appendix II) comprising a field visit, air photo interpretation and data search by a consultant hydrologist.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

The geochemical and hydrological data collected to date and presented in this report form an important component of the information package that is required for a Stage I submission.

The following conclusions are summarized below:

- 1.) Preliminary investigations indicate that most of the areas between Carnes and McKinnon Creeks does not appear to be subject to flooding, channel shifting, or mass washing processes (refer to Appendix II).
- 2.) Monitoring stations on Carnes and McKinnon Creeks indicate substantial changes in discharge over the sample period, due to seasonal variations. Based on the hydrologist's report (Appendix I), only a few additional discharge measurements are required to give reliable estimates of winter conditions. This season represents the period at lowest flow and is an important factor as sufficient flow would be required to ensure dilution of any mine or mill discharge.
- 3.) The water quality analysis of Carnes and McKinnon Creek can be characterized as cold mountain streams typical of glacial runoff. The turbidity and quantity of suspended solids and dissolved substances is lowest during the winter months.

A number of areas require further study and include: ground water movement and hydrogeological investigations, fisheries and wildlife resources. These subjects and continuing stream geochemistry and hydrology will be undertaken if sufficient ore reserves are outlined through underground exploration to justify a mining and milling operation. A more detailed discussion of the water quality geochemistry and hydrology would accompany the Stage 7 submission.

## **7.0 REFERENCES**

Pegg, R. 1983. A Summary Report on the J&L Mineral Option; Lead-Zinc-Gold-Silver Prospect, Revelstoke Mining Division, B.C. Unpublished report for B.P. Selco.

Wright, J.H. and Weicker, R.F. 1989. Completion Report on Phase I Exploration Program J&L Property, B.C. Unpublished report for Equinox Resources Ltd.

**8.0 COST STATEMENT - J&L PROPERTY**

28 September 1990

ENVIRONMENTAL MONITORING AND ANALYSIS

Note: Assessment distribution, based on three stations on the Sam Group and three stations on the Arty #1 Group. Distribution 50 - 50. However, water monitoring stations are both on the Sam Group (equipment costs). distribution of other costs - Sam 60% Arty 40%.

			<u>TOTAL</u>	<u>SAM GROUP PORTION</u>
		PERSONNEL		
Company				
13-Sep-89	14-Sep-89	R. Weicker Report	\$825.00	
18-Sep-89	19-Sep-89	3 days @275/day		
23-Sep-89	1 day	G. Ringwood Drafting	150.00	
		@\$150/day		
		Benefits and Overhead 15%	<u>146.25</u>	
			\$1,121.25	\$673
Consultants				
	25-Sep-89	M. Miles & Assoc.	\$11,406.12	
	30-Sep-89		282.30	
	18-Dec-89	Polster Envir.	1,663.80	
	11-Mar-90	W.K. Enterprises	170.77	
	19-Mar-90	T. Taal	600.00	
	01-Aug-90	M. Miles & Assoc.	<u>3,741.51</u>	
			\$18,534.50	\$11,121.00
SUPPORT				
Expenses				
T. Taal	21-Dec-89	Groceries	\$34.09	
T. Taal	29-Dec-89	Room & Board, Supplies	405.86	
T. Taal	30-Jan-90	Room & Board	113.30	
T. Taal	06-Feb-90	Supplies	17.37	
T. Taal	10-Feb-90	Room & Board, Supplies	207.85	
T. Taal	28-Feb-90	Supplies	8.20	
T. Taal	15-Mar-90	Groceries	17.72	
T. Taal	17-Mar-90	Room & Board	81.00	
28-Nov-89	12-Feb-90	Freight-Greyhound	423.38	
30-Oct-89	10-Feb-90	Field Supplies	160.88	
12-Nov-89	30-Mar-90	Telephone T. Taal	188.71	
31-Oct-89	17-Mar-90	Travel Costs	130.12	
October 89	March 90	Trk rent 20 days @ \$17.07/day	<u>341.40</u>	
			\$2,129.88	\$1,278.00

## EQUIPMENT

M. Miles	25-Sep-89	Water Monitors	\$4,770.00	
M. Miles	25-Sep-89	Water Monitors	<u>8,461.00</u>	
			\$13,231.00	\$13,231.00

## ANALYSIS

	31-Aug-89	Analytical	\$1,005.70	
	31-Aug-89	Analytical	2,772.00	
	25-Sep-89	Analytical	30.00	
	30-Sep-89	Analytical	4,229.27	
	17-Oct-89	Analytical	2,772.00	
	24-Oct-89	Analytical	30.00	
	22-Nov-89	Analytical	30.00	
	29-Nov-89	Analytical	2,772.00	
	14-Dec-89	Analytical	64.00	
	29-Dec-89	Analytical	2,772.00	
	29-Jan-90	Analytical	<u>2,772.00</u>	
			\$19,278.97	\$11,567

TOTAL			\$54,296	\$37,870
PAC Withdrawal @ 30%			\$16,289	\$11,361
			\$70,584	\$49,231

**9.0 STATEMENT OF QUALIFICATIONS**

I, Robert F. Weicker, hereby certify:

1. That I am a practicing geologist employed by Equinox Resources Ltd., #900 - 625 Howe Street, Vancouver, B.C. My position is chief mining geologist.
2. That I am a graduate of the University of Waterloo, Waterloo, Ontario, in Honours Earth Science (B.Sc. 1977).
3. That I have practiced exploration and mining exploration in Canada and the United States since 1977 while employed by Lac Minerals Ltd., Noranda Exploration, Pamour Porcupine Mines and Asarco Exploration.
4. That I have personally supervised the work carried out and the observations and opinions expressed herein are based on my personal examinations of the property and on a review of available data and reports.
5. That I have no interest in the properties included in this report.

Dated at Vancouver, B.C. this 20th day of December, 1990.



Robert F. Weicker, B.Sc.



**APPENDIX I**

**COMPILATION AND REVIEW OF J&L MINESITE LEVEL DATA  
August 25, 1989 to March 16, 1990  
M. Miles and Associates Ltd.**

**COMPILATION AND REVIEW OF  
J AND L MINE SITE  
WATER LEVEL DATA**

**AUGUST 25, 1989 to MARCH 16, 1990**

Prepared for:

**EQUINOX RESOURCES LTD.**  
Suite 900, 625 Howe Street  
Vancouver, B.C., V6C 2T6

Prepared by:

**M. MILES AND ASSOCIATES LTD.**  
645 Island Road  
Victoria, B.C. V8S 2T7

Phone: 604-595-0653

May, 1990

John Wright, P.Eng.,  
Manager, Operations  
Equinox Resources Ltd.,  
Suite 900,  
625 Howe Street  
Vancouver, B.C.  
V6C 2T6

May 8, 1990

Dear John:

**RE: REVIEW OF J AND L HYDROMETRIC DATA**

As requested, I have reviewed the water level and discharge data collected at the J and L mine site by Toivo Taal. I have the following technical comments.

- 1: Complete water level records exist at both sites for the period of August 25, 1989 to March 16, 1990. Summary graphs showing the maximum, average and minimum daily values are attached. Carnes Creek shows a trend of decreasing water level over the period of record. The data from McKinnon Creek exhibit a similar pattern, however "step" increases in water level occur following a sizeable flood in late-September and again in late-November (possibly as a result of the onset of ice conditions in the channel). These changes are not unexpected given the small size and unstable nature of McKinnon Creek. The apparent changes in channel configuration will however affect the relationship between stage and discharge and thus make interpretation of the water level data somewhat more difficult than for Carnes Creek. Toivo and I should discuss these data and verify the causes for the "step" changes in water level.

- 2: Data from the McKinnon Creek gauge show minor time inconsistencies at the September 23/24th down-loading. This may result from a drift in the internal clock in the gauge or from an incorrect time setting on the down-loading computer (and an incorrect down-loading procedure). I need to discuss this with Toivo to determine the cause. The time inconsistencies are however sufficiently small that they do not represent a significant problem, given the intended use of the data.
- 3: Toivo has undertaken 4 discharge measurements on Carnes Creek and 5 on McKinnon Creek. These data are summarized on the attached tables. Some of the gauging notes are missing (e.g. time, staff gauge readings, etc.) and increased efforts should be made in the future to ensure this information is collected.
- 4: The relationship between river stage and discharge on Carnes Creek is summarized on 2 graphs, one based on staff gauge readings and the other on water level as measured by the recorder. On the basis of the available data this relationship appears to be well behaved. Discharge measurements have been undertaken for water levels (on the recorder) ranging between 42 and 80 cm, which is quite similar to the observed extremes in recorded values of 38 and 100 cm. It would however be desirable to obtain discharge measurements corresponding to water level recorder depths of approximately 60 and 70 cm. [This corresponds to staff gauge readings of approximately 45 and 55 cm, respectively.] Given the diurnal variability in discharge which occurred in August and September, it is possible that this range in water level could occur within a 24-hour period during the

snow-melt freshet. Some measurements of discharges at water levels previously sampled would also be desirable in order to ensure that a shift in the stage-discharge curve has not occurred and to define the accuracy of the developed stage-discharge relationship. Discharge measurements for recorder water depths of greater than 90 cm would allow the calibration of the stage-discharge relationship for high flows. However, this was not the original intention of the monitoring program and can likely only be safely accomplished using equipment which Equinox does not presently own.

- 5:           The relationship between water depth and discharge on McKinnon Creek is presently not well defined. Discharge has been measured for recorder water depths ranging between 49 and 77 cm. Recorded water levels have a somewhat larger range of 37 to 89 cm and additional measurements at recorder water depths of approximately 60, 70, 80 and 90 cm are desirable. This corresponds to staff gauge readings of approximately 40, 50, 60 and 70 cm, respectively. Given the range in diurnal water level variation observed in August and September, it is unlikely that this range in flows would occur during a single site visit.

As previously mentioned, the stage-discharge rating curve appears to have shifted substantially as a result of the late-September storm and to a smaller degree in late-November, possibly due to the development of ice in the river channel. The collection of additional discharge measurements must be conducted in order to better define these effects.

6:           Graphs showing the relationship between water level readings on the staff gauge and those on the recorder are also enclosed. The data from Carnes Creek show a linear relationship as does the post-August data on McKinnon Creek. The August data from McKinnon Creek is anomalous and provides further evidence for a change in channel geometry as a result of the late-September storm.

In summary, Toivo has collected a good data set under what must have been difficult conditions. With a few additional discharge measurements we will have sufficient information to give reliable estimates of winter discharges on Carnes Creek and reasonably good estimates on McKinnon Creek.

I suggest that whatever data Toivo obtains on his next field trip be sent to me for compilation and review. After this has been undertaken we should make a decision on whether to continue the gauging program over the summer.

Please contact me if you have any questions. With best personal wishes.

Respectfully,

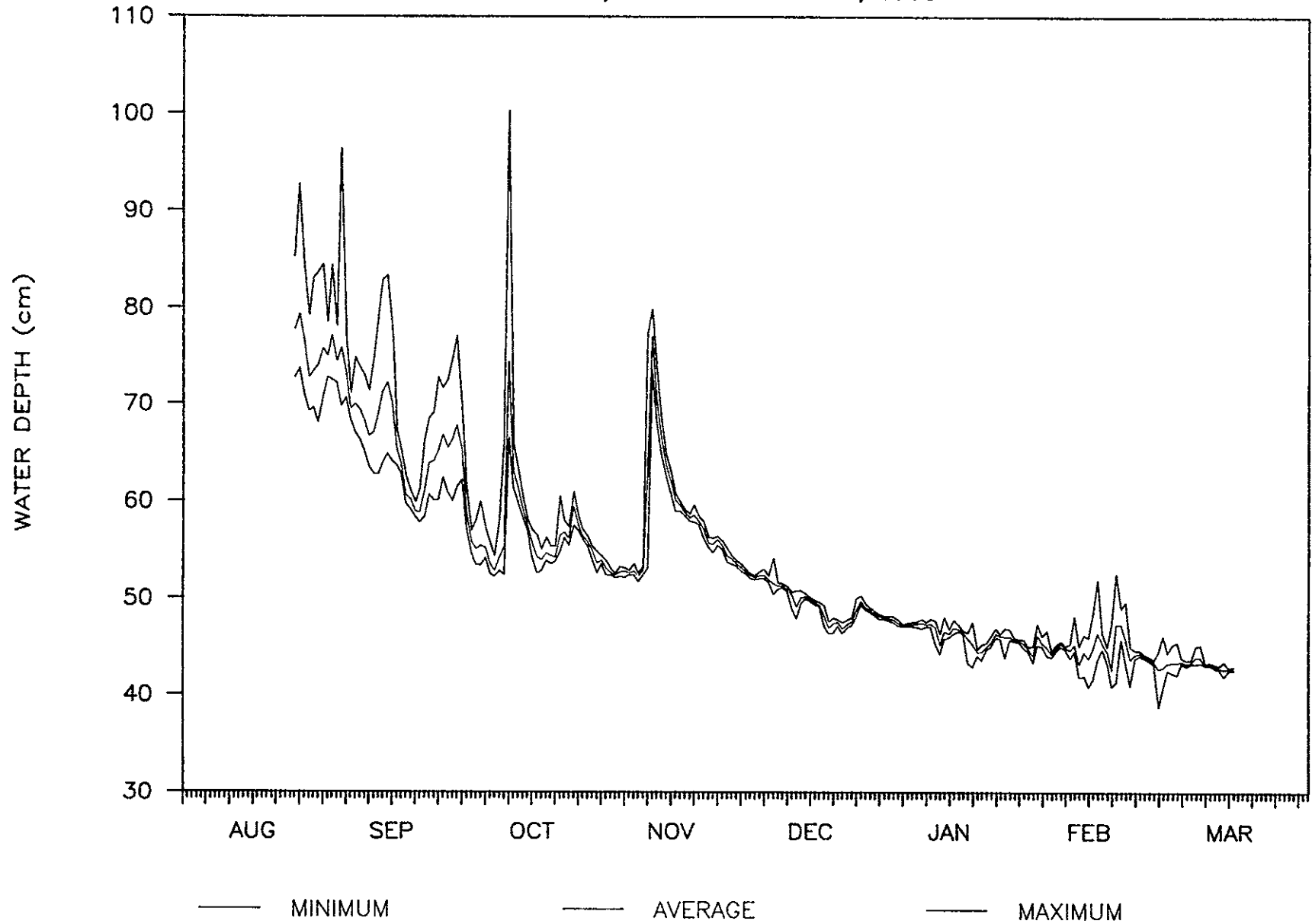
Mike Miles, M.Sc.

MM/lg

COMPILATION AND REVIEW OF  
WATER LEVEL DATA  
CARNES CREEK ABOVE MCKINNON CREEK  
AUGUST 25, 1989 to MARCH 16, 1990

# CARNES CREEK WATER LEVELS

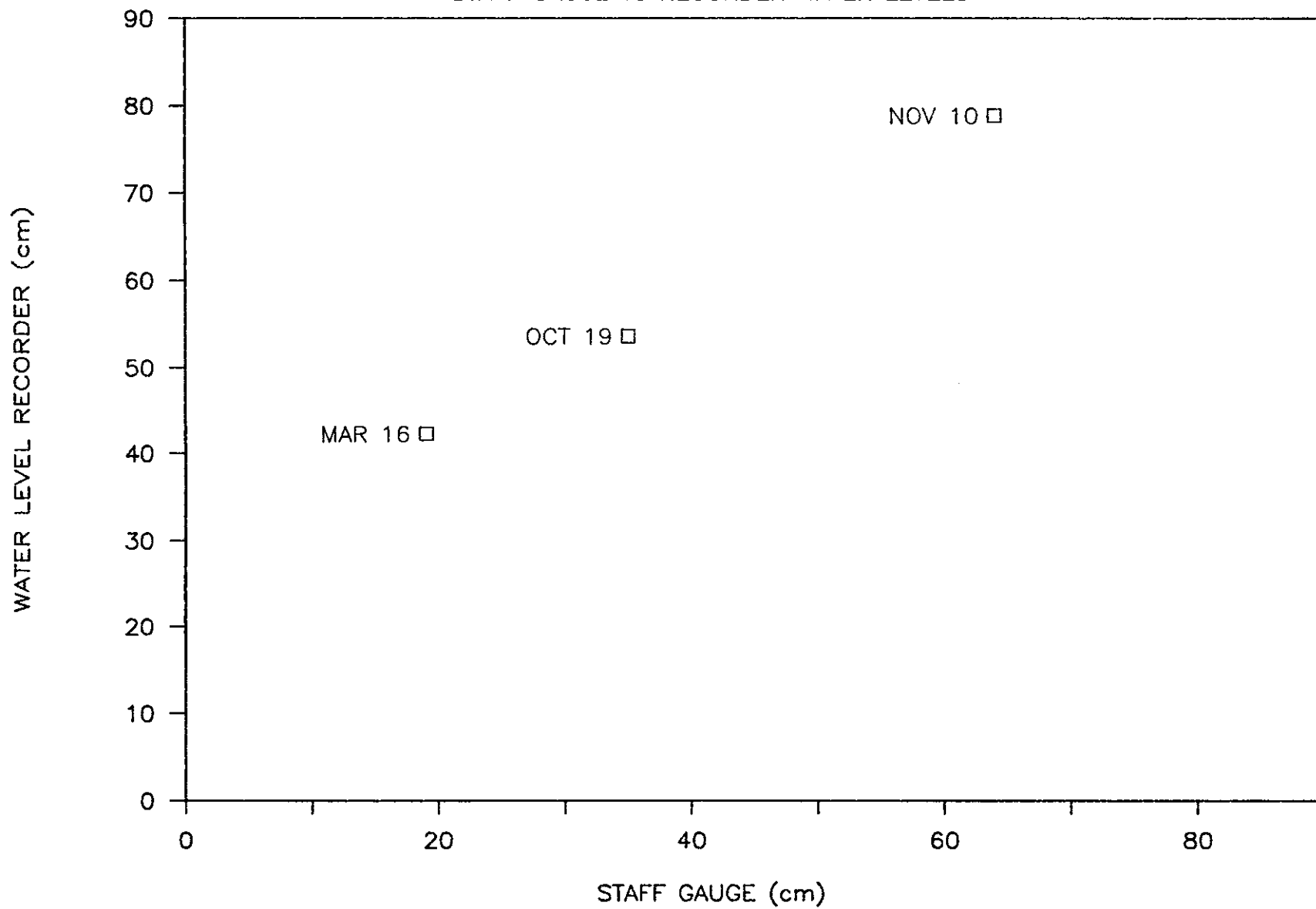
AUGUST 25, 1989 TO MARCH 16, 1990





# CARNES CREEK ABOVE McKINNON CREEK

STAFF GAUGE vs RECORDER WATER LEVELS

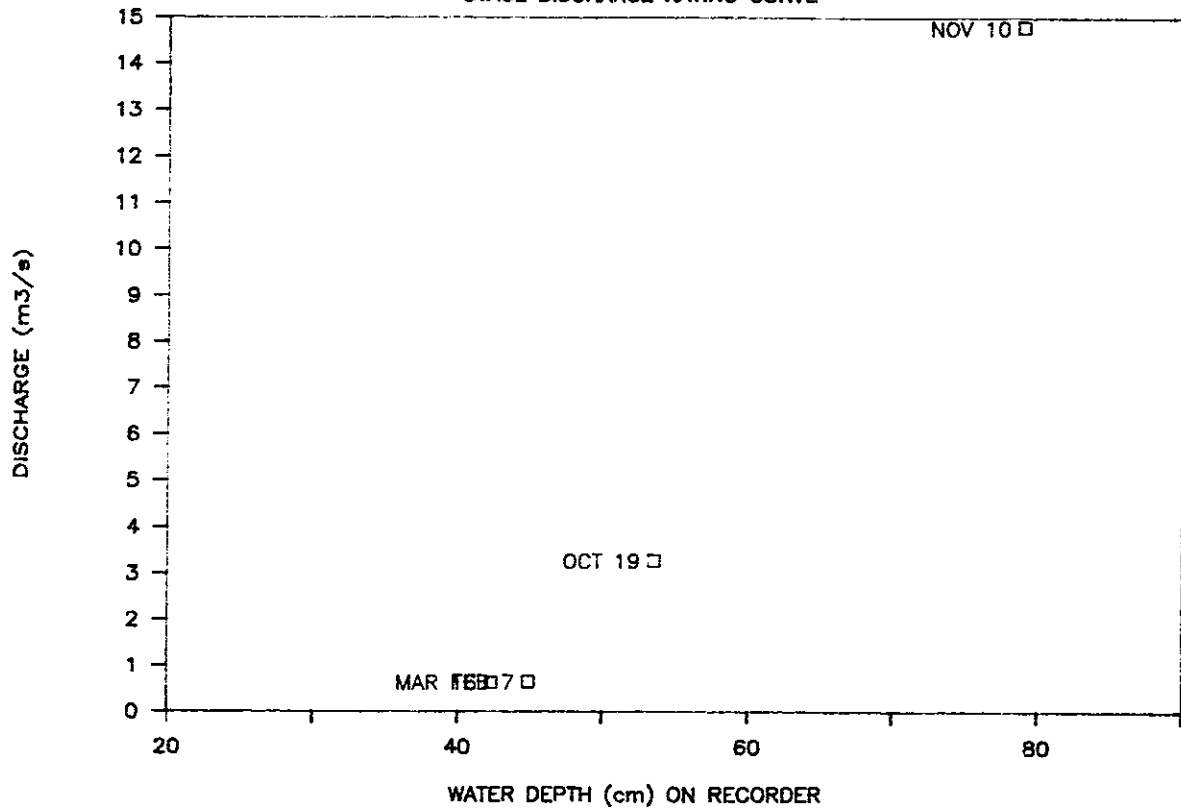


## DISCHARGE DATA SUMMARY FOR CARNES CREEK ABOVE McKINNON CREEK

DATE	YEAR	TIME (PST)	WATER DEPTH (cm)		DISCHARGE (m <sup>3</sup> /s)	COMMENT
			STAFF GAUGE	RECORDER		
OCT 19	1989	12.00	35	53.59	3.289	recorder depth from printout
NOV 10	1989	13.00	64	78.9	14.790	time and staff gauge readings not taken, time estimated from metering notes
FEB 7	1990	13.30	NA	44.88	0.658	
MAR 16	1990	12.50	19	42.28	0.641	

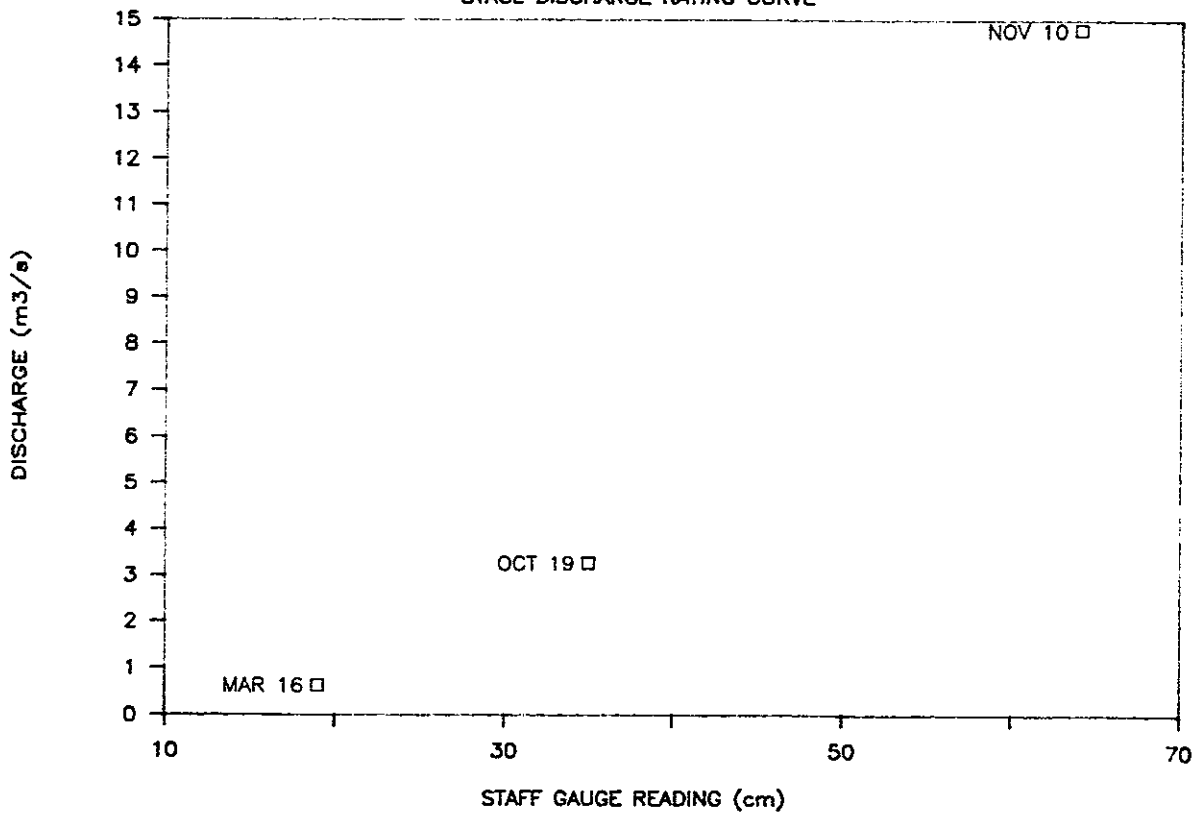
# CARNES CREEK ABOVE MCKINNON CREEK

STAGE DISCHARGE RATING CURVE



# CARNES CREEK ABOVE MCKINNON CREEK

STAGE DISCHARGE RATING CURVE

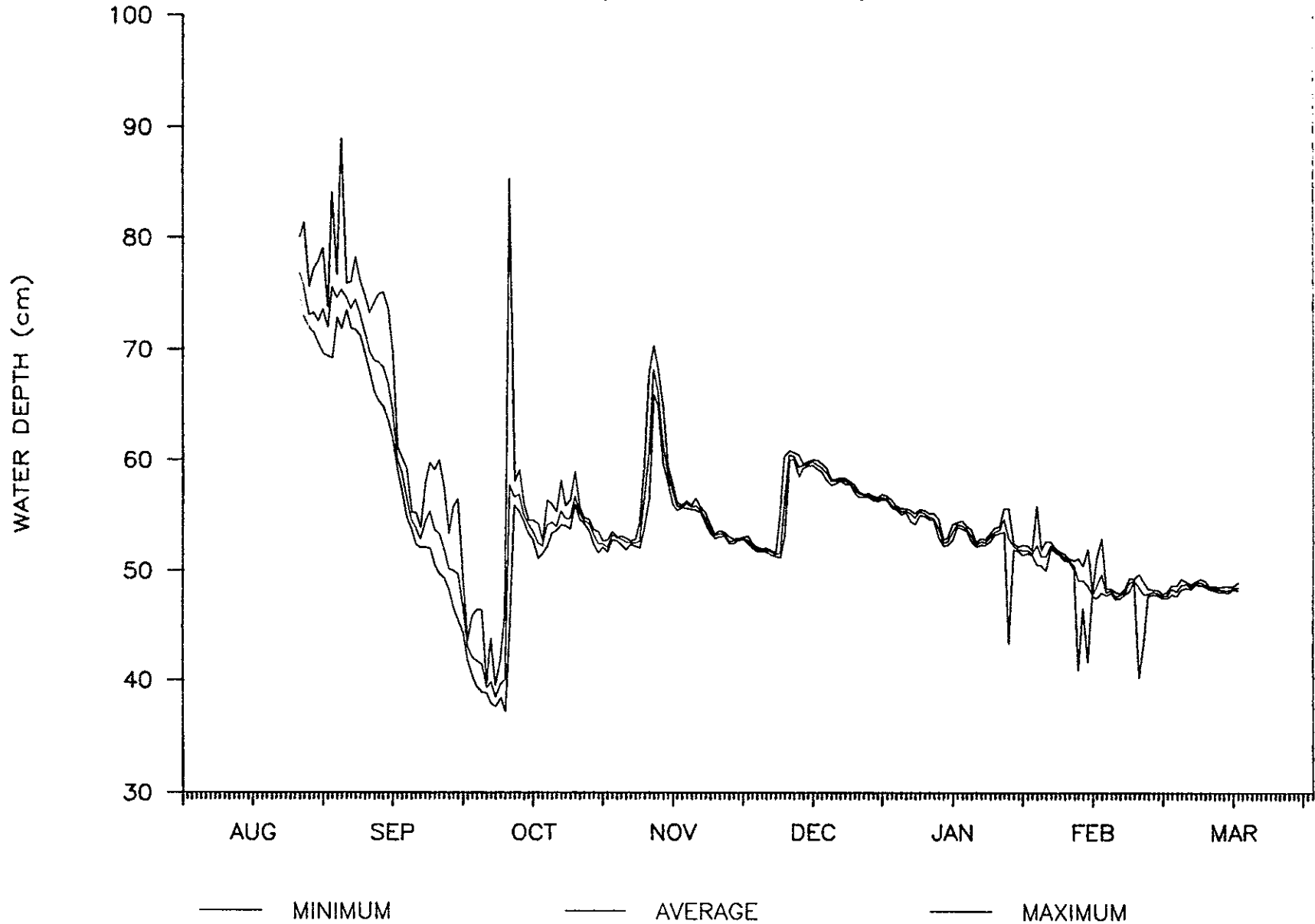


COMPILATION AND REVIEW OF  
WATER LEVEL DATA  
MCKINNON CREEK BY CAMP

AUGUST 25, 1989 to MARCH 16, 1990

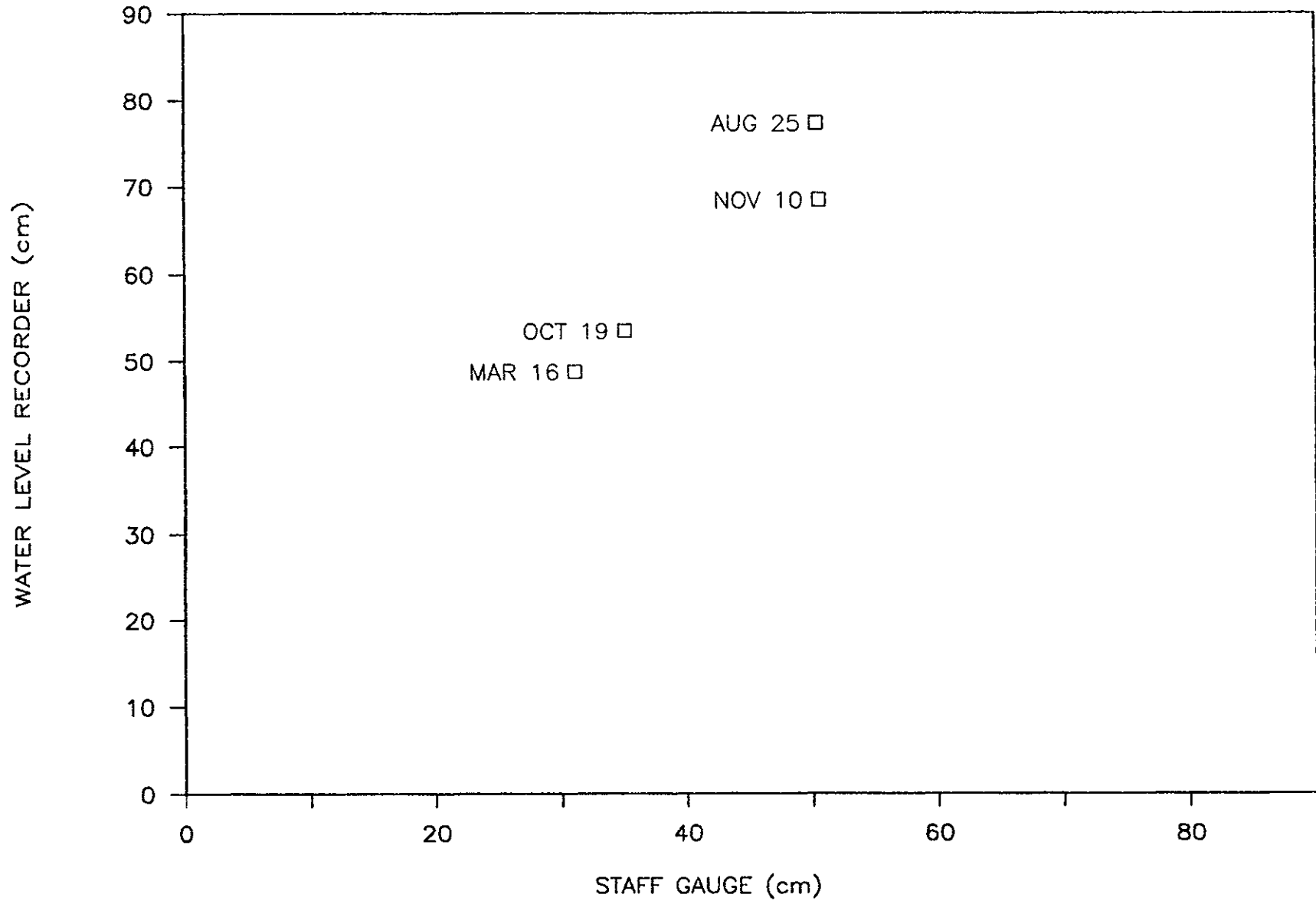
# McKINNON CREEK WATER LEVELS

AUGUST 25, 1989 TO MARCH 16, 1990



# MCKINNON CREEK BY CAMP

STAFF GAUGE vs RECORDER WATER LEVELS

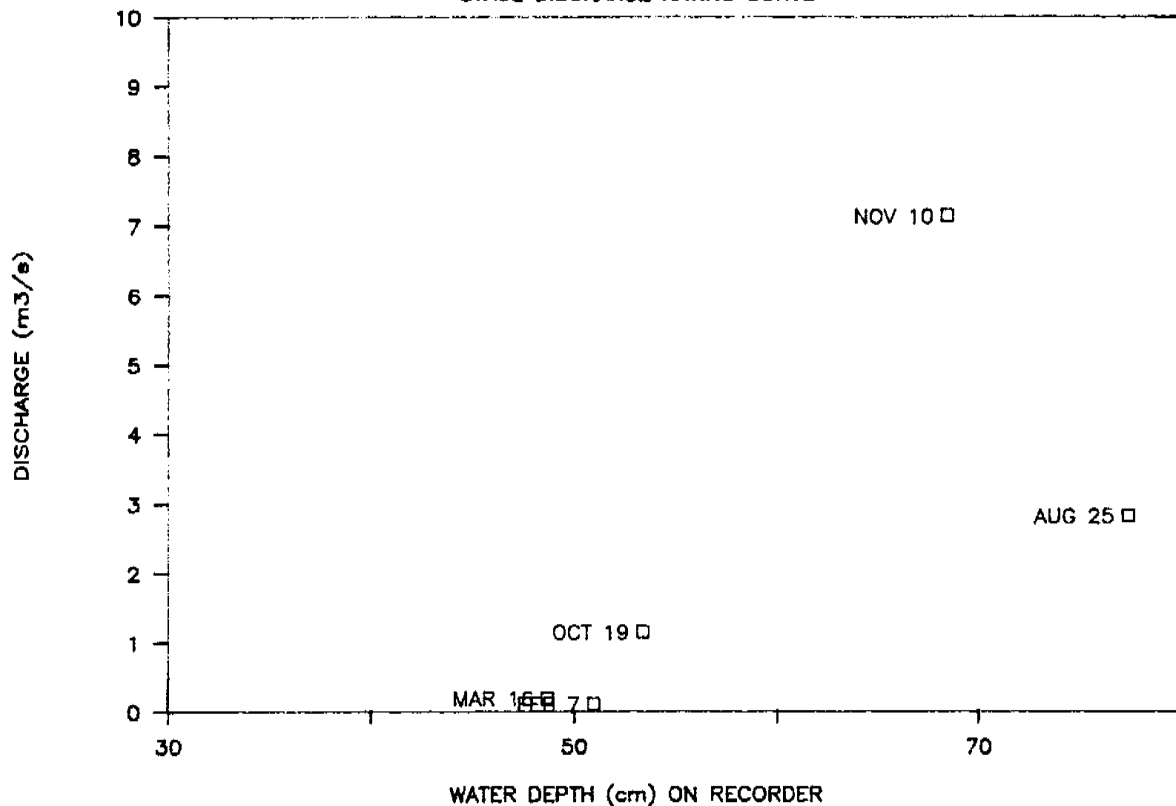


## DISCHARGE DATA SUMMARY FOR MCKINNON CREEK BY CAMP

DATE	YEAR	TIME (PST)	WATER DEPTH (cm):		DISCHARGE (m <sup>3</sup> /s)	COMMENT
			STAFF GAUGE	RECORDER:		
AUG 25	1989	12.00	50.3	77.3	2.817	
OCT 19	1989	10.15	35	53.44	1.154	recorder depth from printout
NOV 10	1989	9.45	50.5	68.4	7.132	" , time of staff gauge reading not taken, time estimated from metering notes
FEB 7	1990	12.00	NA	50.99	0.112	staff gauge reading not available
MAR 16	1990	10.15	31	48.68	0.193	

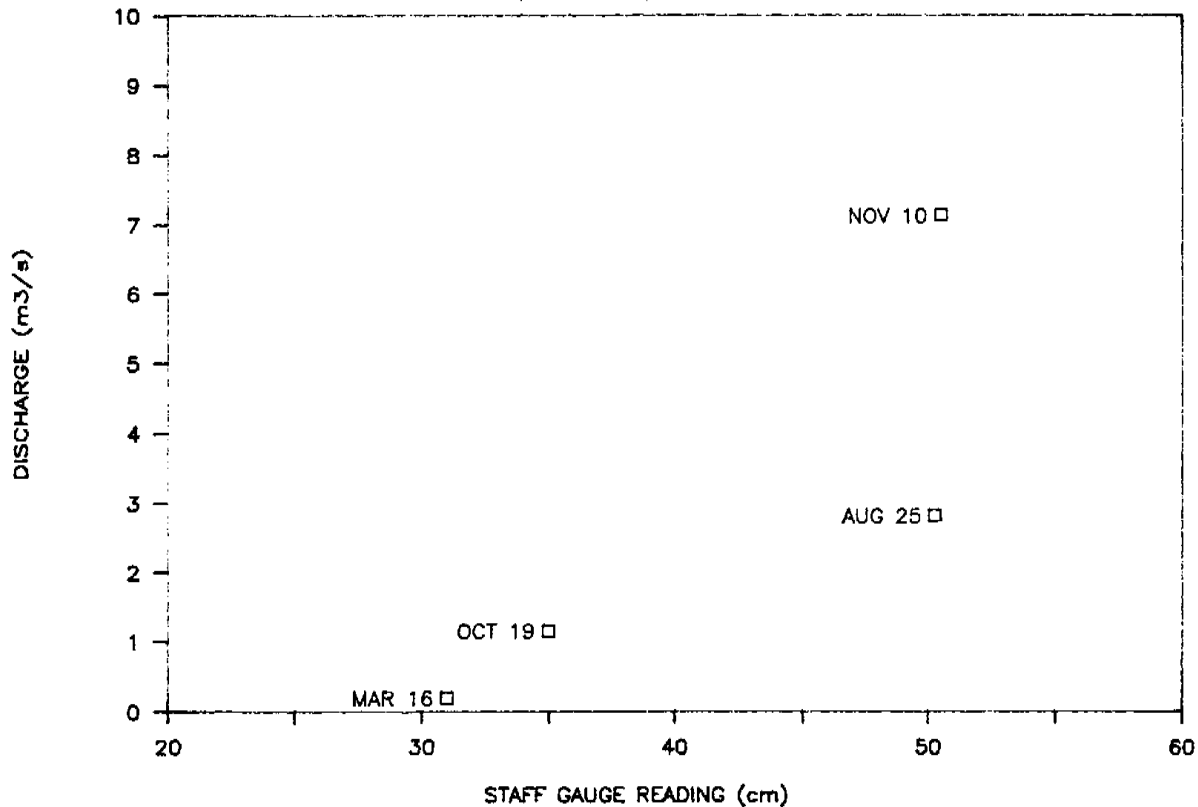
# McKINNON CREEK BY CAMP

STAGE DISCHARGE RATING CURVE



# McKINNON CREEK BY CAMP

STAGE DISCHARGE RATING CURVE





**APPENDIX II**

**MEMO FROM M. MILES**

**RE: J&L Minesite - Areas Potentially Subject to Flooding  
June 7, 1989**

SEND TO

JOHN WRIGHT  
EQUINOX

FROM

MIKE MILES

DEPT.

DATE

JUNE 7/89

SUBJECT

RE: J+L MINESITE - AREAS POTENTIALLY SUBJECT TO FLOODING

Dear John:

I have taken ~~to~~ a few minutes to delineate those areas in the vicinity of the J+L minesite which appear to be subject to flooding. The enclosed annotated air photo is a very rough estimate and needs to be field checked, preferably after re-interpreting 1:5000 to 1:10,000 scale recent air photos.

Most of the area between Carnos and McKinnon Creek does not appear to be subject to flooding, channel shifting or mass wasting processes. The approximate area is 0.21 km<sup>2</sup>. Is this enough for the mine infrastructure. <sup>Portions of</sup> The area on the right bank of McKinnon Creek [looking downstream] appears to be potentially subject to avalanches and other forms of mass wasting. June Ryder or I should spend some time in this area if there is any requirement for development in this area.

I hope the enclosed "map" is of some use. With best personal wishes.

Mike Miles

REPLY FROM

REPLY DATE

**APPENDIX III**

**CHEMICAL ANALYSIS REPORTS**  
**Analytical Services Laboratories Ltd.**

*file 220  
prints*  
AUG 8 1989

# ASL

## CHEMICAL ANALYSIS REPORT

Date: August 2, 1989  
File No. 8415A  
Report On: Water Analysis  
Report To: Equinox Resource Limited  
900 - 625 Howe Street  
Vancouver, BC  
V6C 2T6  
Attention: John Wright c.c. T. Higgs

DATE OF SUBMISSION:

July 17, 1989

SAMPLE IDENTIFICATION

Labelled as noted 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.

*(per)* *AS*  
A. W. Maynard, M.Sc.  
Senior Partner

AWM/BS/dmc

*B. Szczachor*  
Barbara Szczachor, B.Sc.  
Supervisor  
Water Quality Laboratory

.../report/aug/equinox8415



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## CHEMICAL ANALYSIS REPORT

Date: August 23, 1989  
File No. 8557A  
Report On: Water Analysis  
Report To: Equinox Resource Limited  
900 - 625 Howe Street  
Vancouver, BC  
V6C 2T6  
Attention: John Wright c.c. T. Higgs

DATE OF SUBMISSION:

August 3, 1989

SAMPLE IDENTIFICATION

Labelled as noted 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.

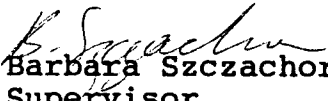
RESULTS OF ANALYSIS

Results are presented in the table(s) attached.

ASL ANALYTICAL SERVICE LABORATORIES LTD.

*(pm)*   
A. W. Maynard, M.Sc.  
Senior Partner

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.../report/aug/equinox8557



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## RESULTS OF ANALYSIS

File No. 8557A  
Page 2 of 2

		Site #1 Aug 2/89	Site #2 Aug 2/89	Site #3 Aug 2/89
<b><u>Physical Tests</u></b>				
pH		7.17	7.48	7.55
Conductivity		97.9	106.	124.
Turbidity	NTU	18.1	70.3	190.
Suspended Solids		49.3	153.	373.
Dissolved Solids		83.6	89.3	99.6
Hardness	CaCO3	53.2	61.2	71.9
<b><u>Anions and Nutrients</u></b>				
Alkalinity	CaCO3	47.0	59.0	69.0
Sulphate	SO4	7.3	4.9	6.0
Chloride	Cl	<0.5	<0.5	<0.5
Fluoride	F	<0.02	<0.02	<0.02
O-Phosphate	P	0.063	0.044	0.088
D-Phosphorous	P	0.10	0.63	0.31
T-Phosphorous	P	0.39	0.39	0.31
Nitrate	N	0.082	0.10	0.15
Nitrite	N	0.003	0.003	0.003
Ammonia	N	0.013	0.013	0.029
<b><u>Total Metals</u></b>				
Aluminium	T Al	0.80	0.91	2.48
Antimony	T Sb	<0.0001	<0.0001	<0.0001
Arsenic	T As	0.0011	0.0007	0.0016
Barium	T Ba	0.010	0.045	25.0
Cadmium	T Cd	0.0005	<0.0002	0.0003
Cobalt	T Co	0.001	0.002	0.006
Chromium	T Cr	0.002	0.001	0.015
Copper	T Cu	0.002	0.001	0.005
Iron	T Fe	0.85	1.33	3.80
Lead	T Pb	0.005	0.003	0.009
Manganese	T Mn	0.020	0.020	0.13
Mercury	T Hg	<0.00005	<0.00005	0.00006
Molybdenum	T Mo	<0.001	<0.001	<0.001
Nickel	T Ni	0.001	<0.001	0.002
Selenium	T Se	<0.0005	<0.0005	<0.0005
Silver	T Ag	<0.0001	<0.0001	<0.0001
Zinc	T Zn	0.011	0.014	0.032
<b><u>Dissolved Metals</u></b>				
Aluminium	D Al	0.24	0.043	0.040
Antimony	D Sb	<0.0001	<0.0001	<0.0001
Arsenic	D As	0.0005	0.0003	0.0004
Barium	D Ba	<0.010	<0.010	2.24
Cadmium	D Cd	<0.0002	<0.0002	<0.0002
Cobalt	D Co	<0.001	<0.001	0.002
Chromium	D Cr	<0.001	<0.001	<0.001
Copper	D Cu	<0.001	<0.001	<0.001
Iron	D Fe	<0.030	<0.030	<0.030
Lead	D Pb	<0.001	<0.001	<0.001
Manganese	D Mn	<0.005	<0.005	<0.005
Molybdenum	D Mo	<0.001	<0.001	<0.001
Nickel	D Ni	<0.001	<0.001	<0.001
Selenium	D Se	<0.0005	<0.0005	<0.0005
Silver	D Ag	<0.0001	<0.0001	<0.0001
Zinc	D Zn	<0.005	0.008	0.005
Calcium	D Ca	17.3	20.9	25.0
Magnesium	D Mg	2.38	2.14	2.24
Potassium	D K	1.18	0.21	0.25
Sodium	D Na	0.47	0.15	0.12

< = Less than      O = Ortho      T = Total      D = Dissolved  
 Results expressed as milligrams per litre except for pH,  
 Conductivity ( $\mu$ mhos/cm), and Turbidity (NTU).

*220  
Permit A*

# ASL

## CHEMICAL ANALYSIS REPORT

Date: September 1, 1989  
File No. 8652A  
Report On: Water Analysis  
Report To: Equinox Resource Limited  
900 - 625 Howe Street  
Vancouver, BC  
V6C 2T6  
Attention: John Wright c.c. T. Higgs

DATE OF SUBMISSION:

August 15, 1989

SAMPLE IDENTIFICATION

Labelled as noted 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.

*B. Szczechor*  
Barbara Szczechor, B.Sc.  
Supervisor/  
Water Quality Laboratory

BS/mm

.../aug/equinox8652



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## RESULTS OF ANALYSIS

File No. 8652A  
Page 2 of 2

	Total Suspended Solids
Site #1 Aug 13/89	526.
Site #2 Aug 13/89	621.
Site #3 Aug 13/89	947.

---

Results expressed as milligrams per litre



220  
JSL  
Pumps

# ASL

## CHEMICAL ANALYSIS REPORT

Date: September 5, 1989  
File No. 8687A  
Report On: Water Analysis  
Report To: Equinox Resource Limited  
900 - 625 Howe Street  
Vancouver, BC  
V6C 2T6  
Attention: John Wright c.c. T. Higgs

DATE OF SUBMISSION:

August 18/89

SAMPLE IDENTIFICATION

Labelled as noted 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.

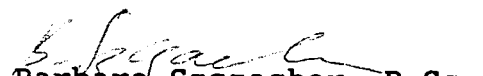
RESULTS OF ANALYSIS

Results are presented in the table(s) attached.

ASL ANALYTICAL SERVICE LABORATORIES LTD.

  
A. W. Maynard, M.Sc.  
Senior Partner

AWM/BS/dmc

  
Barbara Szczachor, B.Sc.  
Supervisor  
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.../report/sep/equinox8687



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RESULTS OF ANALYSIS



	Site #1	Site #2	Site #3	Site #4	Site #5	Site #6
	Aug 16/89	Aug 16/89	Aug 16/89	Aug 16/89	Aug 16/89	Aug 16/89
<b>Physical Tests</b>						
pH	7.96	8.04	7.96	7.94	7.93	7.92
Conductivity	116.	123.	131.	430.	136.	115.
Turbidity NTU	98.4	102.	171.	<1.0	157.	104.
Suspended Solids	161.	183.	311.	<1.0	279.	189.
Dissolved Solids	89.9	91.0	95.9	315.	99.9	87.5
Hardness CaCO3	65.4	63.1	67.6	227.	70.3	57.5
<b>Anions and Nutrients</b>						
Alkalinity CaCO3	53.0	58.0	66.0	178.	70.0	53.0
Sulphate SO4	10.8	4.8	<1.0	44.4	<1.0	4.0
Chloride Cl	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoride F	<0.02	<0.02	<0.02	0.13	0.02	<0.02
O-Phosphate P	0.011	0.012	0.010	0.010	0.011	0.018
D-Phosphorous P	0.014	0.018	0.017	0.011	0.017	0.018
T-Phosphorous P	0.23	0.020	0.034	0.028	0.020	0.018
Nitrate N	0.12	0.13	0.16	0.049	0.16	<0.005
Nitrite N	0.002	0.001	0.016	0.001	0.007	0.007
Ammonia N	0.005	0.011	0.054	<0.005	0.007	0.014
<b>Cyanide</b>						
Tot. Cyanide CN	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
<b>Total Metals</b>						
Aluminium T Al	1.20	1.55	1.30	0.006	1.00	0.75
Antimony T Sb	<0.0001	<0.0001	<0.0001	0.12	<0.0001	<0.0001
Arsenic T As	0.0009	0.0009	0.0010	0.099	0.0011	0.0012
Barium T Ba	0.031	0.029	0.064	0.026	0.052	0.030
Beryllium T Be	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron T B	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium T Cd	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	0.0002
Cobalt T Co	0.006	0.004	0.006	<0.001	0.003	0.004
Chromium T Cr	0.009	0.008	0.007	0.002	0.004	0.005
Copper T Cu	0.006	0.005	0.006	0.002	0.003	0.005
Iron T Fe	2.46	2.55	4.27	0.040	2.79	3.19
Lead T Pb	0.008	0.006	0.007	0.003	0.006	0.013
Manganese T Mn	0.15	0.14	0.18	0.010	0.17	0.17
Mercury T Hg	<0.00005	<0.00005	<0.00005	<0.00005	0.00013	<0.00005
Molybdenum T Mo	<0.001	0.001	<0.001	0.002	<0.001	<0.001
Nickel T Ni	0.006	0.007	0.006	0.006	0.008	0.007
Selenium T Se	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Silver T Ag	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Vanadium T V	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Zinc T Zn	0.019	0.016	0.025	0.53	0.023	0.025
<b>Dissolved Metals</b>						
Aluminium D Al	0.11	0.043	0.070	<0.005	0.030	0.025
Antimony D Sb	<0.0001	<0.0001	<0.0001	0.058	<0.0001	<0.0001
Arsenic D As	0.0001	0.0007	0.0005	0.088	0.0006	0.0003
Barium D Ba	0.009	0.006	0.018	0.025	0.012	0.007
Beryllium D Be	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Boron D B	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium D Cd	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002
Cobalt D Co	0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium D Cr	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper D Cu	0.006	0.005	0.006	0.002	0.003	0.005
Iron D Fe	0.07	<0.03	<0.03	<0.03	<0.03	<0.03
Lead D Pb	0.002	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese D Mn	<0.005	<0.005	<0.005	0.008	<0.005	<0.005
Molybdenum D Mo	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel D Ni	<0.001	<0.001	<0.001	0.006	<0.001	<0.001
Selenium D Se	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Silver D Ag	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Vanadium T V	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Zinc D Zn	<0.005	<0.005	<0.005	0.48	0.007	<0.005
Calcium D Ca	21.4	20.8	22.6	66.7	23.5	18.8
Magnesium D Mg	2.83	2.63	2.63	14.4	2.75	2.49
Potassium D K	0.59	0.67	0.56	1.18	0.60	0.45
Sodium D Na	0.20	0.19	0.13	2.81	0.13	0.17

< = Less than      O = Ortho      T = Total      D = Dissolved  
 Results expressed as milligrams per litre except for pH,  
 Conductivity (µmhos/cm), and Turbidity (NTU).

220 permits

**ASL****CHEMICAL ANALYSIS REPORT**

Date: September 25, 1989  
File No. 8833A  
Report On: Water Analysis  
Report To: Equinox Resource Limited  
900 - 625 Howe Street  
Vancouver, BC  
V6C 2T6  
Attention: John Wright c.c. T. Higgs

**DATE OF SUBMISSION:**

September 6/89

**SAMPLE IDENTIFICATION**

Labelled as noted in RESULTS section.

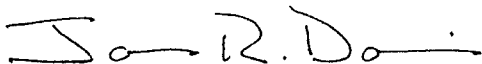
**METHODOLOGY**

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.



James R. Downie  
Supervisor  
Trace Metals Laboratory

JRD/BS/dmc

.../report/sep/equinox8833



Barbara Szczachor, B.Sc.  
Supervisor  
Water Quality Laboratory

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## RESULTS OF ANALYSIS

File No. 8833A  
Page 2 of 2

	Site #1	Site #2	Site #3
	Sept 4/89	Sept 4/89	Sept 4/89
Suspended Solids	607.	573.	459.

Results are expressed as milligrams per litre

**ASL****CHEMICAL ANALYSIS REPORT**

**Date:** October 18, 1989  
**File No.** 8939A  
**Report On:** Water Analysis  
**Report To:** Equinox Resource Limited  
900 - 625 Howe Street  
Vancouver, BC  
V6C 2T6  
**Attention:** John Wright c.c. T. Higgs

**DATE OF SUBMISSION:**

September 15, 1989

**SAMPLE IDENTIFICATION**

Labelled as noted in RESULTS section.

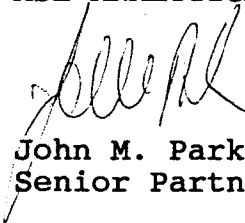
**METHODOLOGY**

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.



John M. Park, B.Sc.  
Senior Partner



Barbara Szczachor, B.Sc.  
Supervisor  
Water Quality Laboratory

JMP/BS/dmc

.../report/oct/equinox8939

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**RESULTS OF ANALYSIS**

File No. 8939A  
Page 2 of 3

	Site 1 Sep 14/89	Site 2 Sep 14/89	Site 3 Sep 14/89
<b>Physical Tests</b>			
pH	7.57	7.99	7.95
Conductivity	111.	115.	136.
Turbidity NTU	107.	285.	1590.
Suspended Solids	211.	450.	1380.
Dissolved Solids	73.9	84.7	102.
Hardness CaCO3	47.8	50.9	60.4
<b>Anions</b>			
Alkalinity CaCO3	47.5	59.3	74.9
Sulphate SO4	8.3	5.9	3.6
Chloride Cl	<0.5	<0.5	<0.5
Fluoride F	0.02	<0.02	<0.02
<b>Nutrients</b>			
O-Phosphate P	0.004	0.022	0.016
D-Phosphorous P	0.025	0.023	0.017
T-Phosphorous P	0.040	0.037	0.027
Nitrate N	0.096	0.11	0.12
Nitrite N	0.004	0.004	0.003
Ammonia N	0.044	0.019	0.024
<b>Cyanide</b>			
Tot. Cyanide CN	<0.005	<0.005	<0.005
<b>Total Metals</b>			
Aluminium T Al	4.02	4.69	7.88
Antimony T Sb	<0.0001	<0.0001	<0.0001
Arsenic T As	<0.0001	0.0003	0.0010
Barium T Ba	0.050	0.079	0.22
Cadmium T Cd	<0.0002	<0.0002	0.0004
Cobalt T Co	0.003	0.004	0.006
Chromium T Cr	0.008	0.008	0.011
Copper T Cu	0.007	0.008	0.013
Iron T Fe	6.14	7.60	12.7
Lead T Pb	0.005	0.007	0.018
Manganese T Mn	0.13	0.18	0.40
Mercury T Hg	<0.00005	<0.00005	<0.00005
Molybdenum T Mo	<0.001	<0.001	<0.001
Nickel T Ni	0.008	0.009	0.015
Selenium T Se	<0.0005	<0.0005	0.0016
Silver T Ag	<0.0001	<0.0001	<0.0001
Zinc T Zn	0.010	0.017	0.042
<b>Dissolved Metals</b>			
Aluminium D Al	0.039	0.038	0.034
Antimony D Sb	<0.0001	<0.0001	<0.0001
Arsenic D As	<0.0001	<0.0001	<0.0001
Barium D Ba	<0.010	<0.010	0.022
Cadmium D Cd	<0.0002	<0.0002	<0.0002
Cobalt D Co	<0.001	<0.001	<0.001
Chromium D Cr	<0.001	<0.001	<0.001
Copper D Cu	0.001	<0.001	<0.001
Iron D Fe	0.04	<0.03	<0.03
Lead D Pb	<0.001	<0.001	<0.001
Manganese D Mn	<0.005	<0.005	<0.005
Molybdenum D Mo	<0.001	<0.001	<0.001
Nickel D Ni	<0.001	<0.001	0.004
Selenium D Se	<0.0005	<0.0005	<0.0005
Silver D Ag	<0.0001	<0.0001	<0.0001
Zinc D Zn	<0.005	<0.005	<0.005
Calcium D Ca	15.5	17.1	21.1
Magnesium D Mg	2.15	1.95	1.83
Potassium D K	0.24	0.28	0.32
Sodium D Na	0.25	0.20	0.13

< = Less than      O = Ortho      D = Dissolved      T = Total  
Results expressed as milligrams per litre except for pH,  
Conductivity (µmhos/cm), and Turbidity (NTU).

**RESULTS OF ANALYSIS**

File No. 8939A  
Page 3 of 3

	Site 4 Sep 14/89	Site 5 Sep 14/89	Site 6 Sep 14/89
<b>Physical Tests</b>			
pH	7.91	7.84	7.15
Conductivity	439.	137.	102.
Turbidity NTU	<1.0	1030.	98.6
Suspended Solids	11.0	1080.	181.
Dissolved Solids	325.	100.	71.1
Hardness CaCO3	223.	61.4	47.1
<b>Anions</b>			
Alkalinity CaCO3	184.	72.8	46.4
Sulphate SO4	56.7	3.9	6.8
Chloride Cl	<0.5	<0.5	<0.5
Fluoride F	0.14	<0.02	<0.02
<b>Nutrients</b>			
O-Phosphate P	0.009	0.014	0.016
D-Phosphorous P	0.026	0.016	0.023
T-Phosphorous P	0.035	0.023	0.025
Nitrate N	0.045	0.11	0.093
Nitrite N	<0.001	0.001	0.005
Ammonia N	<0.005	0.007	0.017
<b>Cyanide</b>			
Tot. Cyanide CN	<0.005	<0.005	<0.005
<b>Total Metals</b>			
Aluminium T Al	0.010	6.96	3.47
Antimony T Sb	0.11	0.0001	<0.0001
Arsenic T As	0.098	0.0009	0.0004
Barium T Ba	0.030	0.21	0.050
Cadmium T Cd	0.0010	0.0009	<0.0002
Cobalt T Co	<0.001	0.005	0.003
Chromium T Cr	<0.001	0.008	0.006
Copper T Cu	0.001	0.010	0.006
Iron T Fe	0.04	9.13	5.21
Lead T Pb	0.009	0.015	0.005
Manganese T Mn	0.007	0.32	0.12
Mercury T Hg	<0.00005	0.00008	0.00010
Molybdenum T Mo	0.002	<0.001	0.001
Nickel T Ni	0.009	0.014	0.008
Selenium T Se	<0.0005	<0.0005	<0.0005
Silver T Ag	<0.0001	<0.0001	<0.0001
Zinc T Zn	0.57	0.029	0.009
<b>Dissolved Metals</b>			
Aluminium D Al	0.006	0.028	0.042
Antimony D Sb	0.10	0.0001	<0.0001
Arsenic D As	0.078	0.0002	<0.0001
Barium D Ba	0.020	0.030	<0.010
Cadmium D Cd	0.0010	<0.0002	<0.0002
Cobalt D Co	<0.001	<0.001	<0.001
Chromium D Cr	<0.001	<0.001	<0.001
Copper D Cu	<0.001	<0.001	<0.001
Iron D Fe	<0.03	<0.03	0.04
Lead D Pb	0.002	<0.002	<0.002
Manganese D Mn	0.007	<0.005	<0.005
Molybdenum D Mo	0.002	<0.001	<0.001
Nickel D Ni	0.008	<0.001	<0.001
Selenium D Se	<0.0005	<0.0005	<0.0005
Silver D Ag	<0.0001	<0.0001	<0.0001
Zinc D Zn	0.52	<0.005	<0.005
Calcium D Ca	66.7	21.4	15.4
Magnesium D Mg	13.5	1.89	2.06
Potassium D K	1.03	0.24	0.26
Sodium D Na	3.05	0.14	0.21

< = Less than      O = Ortho      D = Dissolved      T = Total  
Results expressed as milligrams per litre except for pH,  
Conductivity (µmhos/cm), and Turbidity (NTU).



## CHEMICAL ANALYSIS REPORT

Date: October 26, 1989  
File No. 9106A  
Report On: Water Analysis - J & L Property  
Report To: Equinox Resource Limited  
900 - 625 Howe Street  
Vancouver, BC  
V6C 2T6  
Attention: John Wright c.c. T. Higgs

DATE OF SUBMISSION: October 4, 1989

### SAMPLE IDENTIFICATION

Labelled as noted 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

BS/dmc

.../report/oct/equinox9106



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1650 Pandora Street  
Vancouver, B.C. • V5L 1L6  
Fax (604) 253-6700 • Tel. (604) 253-4188



## RESULTS OF ANALYSIS

File No. 9106A  
Page 2 of 2

	Site 1	Site 2	Site 5
	Oct 3/89	Oct 3/89	Oct 3/89
Suspended Solids	6.0	9.3	18.7

Results are expressed as milligrams per litre.

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**CHEMICAL ANALYSIS REPORT**

**Date:** November 23, 1989  
**File No.** 9395A  
**Report On:** Water Analysis - J & L Property  
**Report To:** Equinox Resource Limited  
 900 - 625 Howe Street  
 Vancouver, BC  
 V6C 2T6  
**Attention:** John Wright c.c. T. Higgs  
**DATE OF SUBMISSION:** Nov. 3/89

**SAMPLE IDENTIFICATION**

Labelled as noted 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.

*B. Szczech*  
 Barbara Szczechor, B.Sc.  
 Supervisor  
 Water Quality Laboratory

*N. Parreno*  
 Nelida Parreno, B.Sc.

BS/NP/dmc

.../report/nov/equinox9395



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## RESULTS OF ANALYSIS

File No. 9395A  
Page 2 of 2

	Site # 1 Nov 2/89	Site # 2 Nov 2/89	Site # 5 Nov 2/89
Suspended Solids	1.3	<1.0	<1.0

< = Less than  
Results expressed as milligrams per litre



## CHEMICAL ANALYSIS REPORT

Date: November 30, 1989  
File No. 9277A  
Report On: Water Analysis  
Report To: Equinox Resource Limited  
900 - 625 Howe Street  
Vancouver, BC  
V6C 2T6  
Attention: John Wright c.c. T. Higgs  
DATE OF SUBMISSION: Oct. 20/89

### SAMPLE IDENTIFICATION

Labelled as noted 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.

A. W. Maynard, M.Sc.  
Senior Partner

AWM/BS/dmc

.../report/nov/equinox9277

Barbara Szczachor, B.Sc.  
Supervisor  
Water Quality Laboratory



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1650 Pandora Street  
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**RESULTS OF ANALYSIS**

File No. 9277A  
Page 2 of 3

		Site 1 Oct 16/89	Site 2 Oct 16/89	Site 3 Oct 16/89
<b>Physical Tests</b>				
pH		7.41	7.66	7.39
Conductivity		192.	185.	188.
Turbidity	NTU	1.3	1.1	1.7
Suspended Solids		2.0	4.0	3.3
Dissolved Solids		145.	150.	150.
Hardness	CaCO3	98.0	101.	102.
<b>Anions</b>				
Alkalinity	CaCO3	88.0	92.3	98.7
Sulphate	SO4	10.5	10.8	8.3
Chloride	Cl	<0.5	<0.5	<0.5
Fluoride	F	0.03	0.03	0.03
<b>Nutrients</b>				
O-Phosphate	P	<0.001	<0.001	<0.001
D-Phosphorous	P	0.003	0.003	0.004
T-Phosphorous	P	0.039	0.037	0.063
Nitrate	N	0.24	0.29	0.43
Nitrite	N	<0.001	<0.001	<0.001
Ammonia	N	<0.005	<0.005	<0.005
<b>Cyanide</b>				
Tot. Cyanide	CN	<0.005	<0.005	<0.005
<b>Total Metals</b>				
Aluminum	T Al	0.083	0.022	0.024
Antimony	T Sb	<0.0001	<0.0001	<0.0001
Arsenic	T As	0.0002	0.0003	<0.0001
Barium	T Ba	0.016	0.025	0.032
Cadmium	T Cd	<0.0002	<0.0002	<0.0002
Cobalt	T Co	<0.001	<0.001	<0.001
Chromium	T Cr	<0.001	<0.001	<0.001
Copper	T Cu	<0.001	<0.001	<0.001
Iron	T Fe	0.03	0.05	0.03
Lead	T Pb	<0.001	<0.001	<0.001
Manganese	T Mn	0.005	<0.005	<0.005
Mercury	T Hg	<0.00005	<0.00005	<0.00005
Molybdenum	T Mo	<0.001	<0.001	<0.001
Nickel	T Ni	<0.001	<0.001	0.003
Selenium	T Se	<0.0005	<0.0005	<0.0005
Silver	T Ag	<0.0001	<0.0001	<0.0001
Zinc	T Zn	0.007	0.005	0.005
<b>Dissolved Metals</b>				
Aluminum	D Al	0.007	0.010	0.010
Antimony	D Sb	<0.0001	<0.0001	<0.0001
Arsenic	D As	0.0002	0.0003	<0.0001
Barium	D Ba	0.010	0.022	0.031
Cadmium	D Cd	<0.0002	<0.0002	<0.0002
Cobalt	D Co	<0.001	<0.001	<0.001
Chromium	D Cr	<0.001	<0.001	<0.001
Copper	D Cu	<0.001	<0.001	<0.001
Iron	D Fe	<0.03	<0.03	<0.03
Lead	D Pb	<0.001	<0.001	<0.001
Manganese	D Mn	<0.005	<0.005	<0.005
Molybdenum	D Mo	<0.001	<0.001	<0.001
Nickel	D Ni	<0.001	<0.001	0.001
Selenium	D Se	<0.0005	<0.0005	<0.0005
Silver	D Ag	<0.0001	<0.0001	<0.0001
Zinc	D Zn	<0.005	<0.005	<0.005
Calcium	D Ca	30.9	32.0	32.9
Magnesium	D Mg	4.93	4.93	4.83
Potassium	D K	0.19	0.21	0.20
Sodium	D Na	0.56	0.52	0.62

< = Less than      O = Ortho      D = Dissolved      T = Total  
Results expressed as milligrams per litre except for pH,  
Conductivity (µmhos/cm), and Turbidity (NTU).

**RESULTS OF ANALYSIS**

File No. 9277A  
Page 3 of 3

	Site 4 Oct 16/89	Site 5 Oct 16/89	Site 6 Oct 16/89
<b>Physical Tests</b>			
pH	7.69	7.49	7.20
Conductivity	442.	198.	179.
Turbidity NTU	<1.0	1.6	<1.0
Suspended Solids	1.3	4.0	2.0
Dissolved Solids	350.	160.	140.
Hardness CaCO3	245.	106.	97.2
<b>Anions</b>			
Alkalinity CaCO3	195.	107.	88.0
Sulphate SO4	61.3	8.9	11.1
Chloride Cl	<0.5	<0.5	<0.5
Fluoride F	0.16	0.03	0.03
<b>Nutrients</b>			
O-Phosphate P	0.011	<0.001	<0.001
D-Phosphorous P	0.015	0.004	0.011
T-Phosphorous P	0.24	0.058	0.035
Nitrate N	0.060	0.41	0.25
Nitrite N	<0.001	<0.001	<0.001
Ammonia N	<0.005	<0.005	<0.005
<b>Cyanide</b>			
Tot. Cyanide CN	<0.005	<0.005	<0.005
<b>Total Metals</b>			
Aluminum T Al	<0.005	0.023	0.018
Antimony T Sb	0.10	0.0002	<0.0001
Arsenic T As	0.075	0.0009	0.0002
Barium T Ba	0.025	0.038	0.020
Cadmium T Cd	<0.0002	<0.0002	0.0003
Cobalt T Co	0.001	<0.001	<0.001
Chromium T Cr	<0.001	<0.001	<0.001
Copper T Cu	0.001	<0.001	<0.001
Iron T Fe	<0.03	0.05	0.03
Lead T Pb	<0.001	<0.001	<0.001
Manganese T Mn	0.007	<0.005	<0.005
Mercury T Hg	<0.00005	<0.00005	0.00027
Molybdenum T Mo	0.002	<0.001	<0.001
Nickel T Ni	0.008	<0.001	<0.001
Selenium T Se	<0.0005	<0.0005	<0.0005
Silver T Ag	<0.0001	<0.0001	<0.0001
Zinc T Zn	0.62	0.007	0.005
<b>Dissolved Metals</b>			
Aluminium D Al	<0.005	0.016	0.009
Antimony D Sb	0.10	0.0002	<0.0001
Arsenic D As	0.072	0.0009	0.0002
Barium D Ba	0.025	0.034	0.011
Cadmium D Cd	<0.0002	<0.0002	<0.0002
Cobalt D Co	<0.001	<0.001	<0.001
Chromium D Cr	<0.001	<0.001	<0.001
Copper D Cu	<0.001	<0.001	<0.001
Iron D Fe	<0.03	<0.03	<0.03
Lead D Pb	<0.001	<0.001	<0.001
Manganese D Mn	0.005	<0.005	<0.005
Molybdenum D Mo	0.002	<0.001	<0.001
Nickel D Ni	0.008	<0.001	<0.001
Selenium D Se	<0.0005	<0.0005	<0.0005
Silver D Ag	<0.0001	<0.0001	<0.0001
Zinc D Zn	0.61	<0.005	<0.005
Calcium D Ca	70.9	34.1	30.2
Magnesium D Mg	16.2	5.04	5.16
Potassium D K	0.96	0.53	0.21
Sodium D Na	3.18	0.43	0.50

< = Less than      O = Ortho      D = Dissolved      T = Total  
Results expressed as milligrams per litre except for pH,  
Conductivity (µmhos/cm), and Turbidity (NTU).

# ASL

## CHEMICAL ANALYSIS REPORT

Date: December 29, 1989  
File No. 9488A  
Report On: Water Analysis  
Report To: Equinox Resource Limited  
900 - 625 Howe Street  
Vancouver, BC  
V6C 2T6  
Attention: John Wright c.c. T. Higgs  
DATE OF SUBMISSION: Nov. 14/89

### SAMPLE IDENTIFICATION

Labelled as noted 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/dec/equinox9488



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1650 Pandora Street  
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## RESULTS OF ANALYSIS

File No. 9488A

Page 2 of 3

	1 Nov 10/89	2 Nov 10/89	3 Nov 10/89
<b>Physical Tests</b>			
pH	7.83	7.83	7.91
Conductivity	244.	161.	170.
Turbidity NTU	53.0	36.9	43.3
Suspended Solids	155.	134.	117.
Dissolved Solids	114.	114.	122.
Hardness CaCO3	76.9	79.5	86.3
<b>Anion</b>			
Alkalinity CaCO3	73.2	77.4	83.6
Sulphate SO4	11.1	6.9	5.7
Chloride Cl	<0.5	<0.5	<0.5
Fluoride F	0.03	0.03	0.04
<b>Nutrients</b>			
O-Phosphate P	0.009	0.008	0.006
D-Phosphorous P	0.016	0.012	0.013
T-Phosphorous P	0.15	0.14	0.16
Nitrate N	0.43	0.56	0.63
Nitrite N	0.002	0.002	0.001
Ammonia N	<0.005	<0.005	<0.005
<b>Cyanide</b>			
Tot. Cyanide CN	<0.005	<0.005	<0.005
<b>Total Metals</b>			
Aluminium T Al	2.26	1.66	1.01
Antimony T Sb	<0.0001	<0.0001	<0.0001
Arsenic T As	0.0052	0.0039	0.0011
Barium T Ba	0.048	0.048	0.054
Cadmium T Cd	<0.0002	<0.0002	<0.0002
Cobalt T Co	0.003	0.002	0.002
Chromium T Cr	0.015	0.008	0.006
Copper T Cu	0.008	0.007	0.007
Iron T Fe	5.26	3.72	2.66
Lead T Pb	0.009	0.007	0.007
Manganese T Mn	0.15	0.11	0.092
Mercury T Hg	<0.00005	<0.00005	<0.00005
Molybdenum T Mo	0.001	<0.001	<0.001
Nickel T Ni	0.009	0.006	0.004
Selenium T Se	<0.0005	<0.0005	<0.0005
Silver T Ag	<0.0001	<0.0001	<0.0001
Zinc T Zn	0.018	0.015	0.014
<b>Dissolved Metals</b>			
Aluminium D Al	0.019	0.012	0.008
Antimony D Sb	<0.0001	<0.0001	<0.0001
Arsenic D As	0.0002	0.0006	0.0004
Barium D Ba	<0.010	0.014	0.026
Cadmium D Cd	<0.0002	<0.0002	<0.0002
Cobalt D Co	<0.001	<0.001	<0.001
Chromium D Cr	<0.001	<0.001	<0.001
Copper D Cu	0.002	0.001	<0.001
Iron D Fe	<0.03	<0.03	<0.03
Lead D Pb	<0.001	<0.001	<0.001
Manganese D Mn	<0.005	<0.005	<0.005
Molybdenum D Mo	<0.001	<0.001	<0.001
Nickel D Ni	<0.001	<0.001	<0.001
Selenium D Se	<0.0005	<0.0005	<0.0005
Silver D Ag	<0.0001	<0.0001	<0.0001
Zinc D Zn	0.013	0.012	0.010
Calcium D Ca	24.9	25.7	28.3
Magnesium D Mg	3.49	3.62	3.69
Potassium D K	0.41	0.33	0.37
Sodium D Na	0.40	0.37	0.36

< = Less than      O = Ortho      D = Dissolved      T = Total  
 Results expressed as milligrams per litre except for pH,  
 Conductivity ( $\mu$ mhos/cm), and Turbidity (NTU).



## RESULTS OF ANALYSIS

File No. 9488A  
Page 3 of 3

	4 Nov 10/89	5 Nov 10/89	6 Nov 10/89
<b>Physical Tests</b>			
pH	7.71	7.36	7.87
Conductivity	309.	177.	132.
Turbidity NTU	17.0	55.0	29.0
Suspended Solids	20.0	173.	91.3
Dissolved Solids	207.	130.	108.
Hardness CaCO <sub>3</sub>	162.	89.5	71.9
<b>Anions</b>			
Alkalinity CaCO <sub>3</sub>	133.8	89.9	75.3
Sulphate SO <sub>4</sub>	11.9	6.5	5.8
Chloride Cl	<0.5	<0.5	<0.5
Fluoride F	0.09	0.03	0.03
<b>Nutrients</b>			
O-Phosphate P	0.012	0.005	0.004
D-Phosphorous P	0.017	0.012	0.009
T-Phosphorous P	0.087	0.15	0.15
Nitrate N	0.12	0.60	0.51
Nitrite N	0.002	0.001	0.001
Ammonia N	<0.005	<0.005	<0.005
<b>Cyanide</b>			
Tot. Cyanide CN	<0.005	<0.005	<0.005
<b>Total Metals</b>			
Aluminium T Al	0.26	1.02	1.23
Antimony T Sb	0.048	<0.0001	<0.0001
Arsenic T As	0.15	0.010	0.0010
Barium T Ba	0.033	0.057	0.043
Cadmium T Cd	0.0008	<0.0002	<0.0002
Cobalt T Co	0.001	0.002	0.002
Chromium T Cr	0.002	0.005	0.006
Copper T Cu	0.006	0.005	0.005
Iron T Fe	0.43	2.69	2.91
Lead T Pb	0.039	0.007	0.004
Manganese T Mn	0.016	0.11	0.075
Mercury T Hg	0.00007	<0.00005	<0.00005
Molybdenum T Mo	<0.001	<0.001	<0.001
Nickel T Ni	0.004	0.004	0.004
Selenium T Se	<0.0005	<0.0005	<0.0005
Silver T Ag	<0.0001	<0.0001	<0.0001
Zinc T Zn	0.50	0.014	0.011
<b>Dissolved Metals</b>			
Aluminium D Al	0.015	0.012	0.078
Antimony D Sb	0.042	<0.0001	<0.0001
Arsenic D As	0.085	0.0025	0.0010
Barium D Ba	0.013	0.021	<0.010
Cadmium D Cd	0.0008	<0.0002	<0.0002
Cobalt D Co	<0.001	<0.001	<0.001
Chromium D Cr	<0.001	<0.001	<0.001
Copper D Cu	0.003	0.001	0.001
Iron D Fe	<0.03	<0.03	<0.03
Lead D Pb	0.002	<0.001	<0.001
Manganese D Mn	<0.005	<0.005	<0.005
Molybdenum D Mo	<0.001	<0.001	<0.001
Nickel D Ni	<0.001	<0.001	<0.001
Selenium D Se	<0.0005	<0.0005	<0.0005
Silver D Ag	<0.0001	<0.0001	<0.0001
Zinc D Zn	0.37	0.012	0.006
Calcium D Ca	49.8	29.4	23.0
Magnesium D Mg	8.98	3.82	3.42
Potassium D K	0.87	0.36	0.39
Sodium D Na	1.67	0.36	0.43

< = Less than      O = Ortho      D = Dissolved      T = Total  
Results expressed as milligrams per litre except for pH,  
Conductivity (µmhos/cm), and Turbidity (NTU).

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# ASL

## CHEMICAL ANALYSIS REPORT

Date: January 29, 1990  
File No. 9921A  
Report On: Water Analysis  
Report To: Equinox Resource Limited  
900 - 625 Howe Street  
Vancouver, BC  
V6C 2T6  
Attention: John Wright c.c. T. Higgs  
DATE OF SUBMISSION: Dec. 27/89

### SAMPLE IDENTIFICATION

Labelled as noted 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.

*B. Szczech*  
Barbara Szczech, B.Sc.  
Supervisor  
Water Quality Laboratory

*N. Parreno*  
Nelida Parreno, B.Sc.

BS/NP/dmc

.../report/jan/equinox9921



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1650 Pandora Street  
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**RESULTS OF ANALYSIS**

File No. 9921A  
Page 2 of 3

	Site 1 Dec 21/89	Site 2 Dec 21/89	Site 3 Dec 21/89
<b>Physical Tests</b>			
pH	8.03	8.07	8.13
Conductivity	212.	214.	208.
Turbidity NTU	<1.0	<1.0	<1.0
Suspended Solids	4.7	4.7	1.3
Dissolved Solids	158.	167.	161.
Hardness CaCO3	108.	110.	109.
<b>Anions</b>			
Alkalinity CaCO3	100.	104.	102.
Sulphate SO4	17.7	22.0	18.1
Chloride Cl	<0.5	<0.5	<0.5
Fluoride F	0.05	0.04	0.03
<b>Nutrients</b>			
O-Phosphate P	<0.001	<0.001	<0.001
D-Phosphorous P	0.002	0.002	<0.001
T-Phosphorous P	0.022	0.005	0.026
Nitrate N	0.35	0.41	0.61
Nitrite N	<0.001	<0.001	<0.001
Ammonia N	<0.005	<0.005	<0.005
<b>Cyanide</b>			
Tot. Cyanide CN	<0.005	<0.005	<0.005
<b>Total Metals</b>			
Aluminium T Al	0.022	0.025	0.008
Antimony T Sb	<0.0001	0.0001	<0.0001
Arsenic T As	0.0001	0.0007	<0.0001
Barium T Ba	0.021	0.023	0.033
Cadmium T Cd	0.0006	<0.0002	<0.0002
Cobalt T Co	<0.001	<0.001	<0.001
Chromium T Cr	<0.001	<0.001	<0.001
Copper T Cu	<0.001	<0.001	<0.001
Iron T Fe	0.04	0.06	<0.03
Lead T Pb	<0.001	<0.001	<0.001
Manganese T Mn	0.006	<0.005	<0.005
Mercury T Hg	<0.00005	<0.00005	<0.00005
Molybdenum T Mo	0.002	0.002	0.002
Nickel T Ni	<0.001	<0.001	<0.001
Selenium T Se	<0.0005	<0.0005	<0.0005
Silver T Ag	0.0004	0.0004	0.0006
Zinc T Zn	<0.005	<0.005	<0.005
<b>Dissolved Metals</b>			
Aluminium D Al	<0.005	<0.005	<0.005
Antimony D Sb	<0.0001	0.0001	<0.0001
Arsenic D As	0.0001	0.0006	<0.0001
Barium D Ba	0.017	0.023	0.033
Cadmium D Cd	<0.0002	<0.0002	<0.0002
Cobalt D Co	<0.001	<0.001	<0.001
Chromium D Cr	<0.001	<0.001	<0.001
Copper D Cu	<0.001	<0.001	<0.001
Iron D Fe	<0.03	<0.03	<0.03
Lead D Pb	<0.001	<0.001	<0.001
Manganese D Mn	<0.005	<0.005	<0.005
Molybdenum D Mo	<0.001	<0.001	<0.001
Nickel D Ni	<0.001	<0.001	<0.001
Selenium D Se	<0.0005	<0.0005	<0.0005
Silver D Ag	0.0002	0.0004	0.0002
Zinc D Zn	<0.005	<0.005	<0.005
Calcium D Ca	33.2	34.0	34.7
Magnesium D Mg	5.94	5.97	5.40
Potassium D K	0.39	0.35	0.33
Sodium D Na	0.69	0.60	0.47

< = Less than      O = Ortho      T = Total      D = Dissolved  
Results expressed as milligrams per litre except for pH,  
Conductivity (µmhos/cm), and Turbidity (NTU)

## RESULTS OF ANALYSIS

File No. 9921A  
Page 3 of 3

		Site 4 Dec 21/89	Site 5 Dec 21/89	Site 6 Dec 21/89
<b>Physical Tests</b>				
pH		7.95	8.09	8.06
Conductivity		399.	221.	211.
Turbidity	NTU	<1.0	<1.0	<1.0
Suspended Solids		3.3	3.3	4.0
Dissolved Solids		302.	166.	157.
Hardness	CaCO3	219.	115.	113.
<b>Anions</b>				
Alkalinity	CaCO3	168.	109.	99.0
Sulphate	SO4	51.7	14.3	15.7
Chloride	Cl	<0.5	<0.5	<0.5
Fluoride	F	0.15	0.04	0.03
<b>Nutrients</b>				
O-Phosphate	P	0.008	<0.001	<0.001
D-Phosphorous	P	0.018	0.001	<0.001
T-Phosphorous	P	0.029	0.007	0.011
Nitrate	N	0.12	0.58	0.36
Nitrite	N	<0.001	<0.001	<0.001
Ammonia	N	<0.005	<0.005	<0.005
<b>Cyanide</b>				
Tot. Cyanide	CN	<0.005	<0.005	<0.005
<b>Total Metals</b>				
Aluminium	T Al	0.006	0.018	0.016
Antimony	T Sb	0.095	0.0007	<0.0001
Arsenic	T As	0.093	0.0015	<0.0001
Barium	T Ba	0.021	0.042	0.019
Cadmium	T Cd	0.0009	<0.0002	<0.0002
Cobalt	T Co	<0.001	<0.001	<0.001
Chromium	T Cr	<0.001	<0.001	<0.001
Copper	T Cu	<0.001	<0.001	<0.001
Iron	T Fe	0.04	<0.03	0.04
Lead	T Pb	0.008	<0.001	<0.001
Manganese	T Mn	0.008	<0.005	<0.005
Mercury	T Hg	<0.00005	<0.00005	<0.00005
Molybdenum	T Mo	0.003	0.002	<0.001
Nickel	T Ni	0.005	<0.001	<0.001
Selenium	T Se	<0.0005	<0.0005	<0.0005
Silver	T Ag	0.0003	0.0005	0.0002
Zinc	T Zn	0.042	<0.005	<0.005
<b>Dissolved Metals</b>				
Aluminium	D Al	<0.005	<0.005	<0.005
Antimony	D Sb	0.093	0.0007	<0.0001
Arsenic	D As	0.086	0.0015	<0.0001
Barium	D Ba	0.021	0.036	0.019
Cadmium	D Cd	0.0008	<0.0002	<0.0002
Cobalt	D Co	<0.001	<0.001	<0.001
Chromium	D Cr	<0.001	<0.001	<0.001
Copper	D Cu	<0.001	<0.001	<0.001
Iron	D Fe	<0.03	<0.03	<0.03
Lead	D Pb	0.003	<0.001	<0.001
Manganese	D Mn	0.007	<0.005	<0.005
Molybdenum	D Mo	0.002	0.001	<0.001
Nickel	D Ni	0.005	<0.001	<0.001
Selenium	D Se	<0.0005	<0.0005	<0.0005
Silver	D Ag	0.0003	0.0005	0.0002
Zinc	D Zn	0.040	<0.005	<0.005
Calcium	D Ca	64.5	36.4	34.6
Magnesium	D Mg	13.7	5.69	6.32
Potassium	D K	1.13	0.34	0.34
Sodium	D Na	2.61	0.53	0.59

< = Less than      O = Ortho      T = Total      D = Dissolved  
Results expressed as milligrams per litre except for pH,  
Conductivity ( $\mu$ mhos/cm), and Turbidity (NTU)

## RESULTS OF ANALYSIS

File No. 8415A  
Page 2 of 3

ASL

	Site 1 Jul 16/89	Site 2 Jul 16/89	Site 3 Jul 16/89
<b><u>Physical Tests</u></b>			
pH	7.93	7.94	7.83
Conductivity	93.5	100.	117.
Turbidity NTU	75.4	73.2	102.
Suspended Solids	112.	117.	131.
Dissolved Solids	82.1	85.9	98.2
Hardness CaCO3	47.5	50.0	57.9
<b><u>Anions and Nutrients</u></b>			
Alkalinity CaCO3	50.4	51.5	65.1
Sulphate SO4	8.3	8.1	5.0
Chloride Cl	<0.5	<0.5	<0.5
Fluoride F	<0.02	<0.02	<0.02
O-Phosphate P	0.033	0.028	0.011
D-Phosphorous P	0.038	0.24	0.014
T-Phosphorous P	0.040	0.39	0.016
Nitrate N	0.069	0.073	0.12
Nitrite N	0.006	0.005	<0.001
Ammonia N	0.013	0.011	0.006
<b><u>Cyanide</u></b>			
Tot. Cyanide CN	<0.005	<0.005	<0.005
<b><u>Total Metals</u></b>			
Aluminium T Al	2.60	2.40	1.36
Antimony T Sb	<0.0001	<0.0001	<0.0001
Arsenic T As	0.0007	0.0008	0.0003
Barium T Ba	0.021	0.039	0.049
Cadmium T Cd	<0.0002	<0.0002	<0.0002
Cobalt T Co	0.002	0.002	<0.001
Chromium T Cr	0.007	0.007	0.003
Copper T Cu	0.005	0.004	0.004
Iron T Fe	4.89	4.37	2.80
Lead T Pb	0.004	0.004	0.005
Manganese T Mn	0.11	0.11	0.11
Mercury T Hg	<0.00005	<0.00005	<0.00005
Molybdenum T Mo	<0.001	<0.001	<0.001
Nickel T Ni	0.007	0.006	0.004
Selenium T Se	<0.0005	<0.0005	<0.0005
Silver T Ag	<0.0001	<0.0001	<0.0001
Zinc T Zn	0.015	0.013	0.012
<b><u>Dissolved Metals</u></b>			
Aluminium D Al	0.053	0.060	0.030
Antimony D Sb	<0.0001	<0.0001	<0.0001
Arsenic D As	0.0004	0.0001	<0.0001
Barium D Ba	<0.010	<0.010	0.018
Cadmium D Cd	<0.0002	<0.0002	<0.0002
Cobalt D Co	<0.001	<0.001	<0.001
Chromium D Cr	<0.001	<0.001	<0.001
Copper D Cu	<0.001	<0.001	<0.001
Iron D Fe	0.027	0.033	<0.015
Lead D Pb	0.002	0.001	<0.001
Manganese D Mn	<0.005	<0.005	<0.005
Molybdenum D Mo	<0.001	<0.001	<0.001
Nickel D Ni	0.001	0.001	<0.001
Selenium D Se	<0.0005	<0.0005	<0.0005
Silver D Ag	<0.0001	<0.0001	<0.0001
Zinc D Zn	<0.005	<0.005	<0.005
Potassium D K	0.46	0.45	0.24
Sodium D Na	0.16	0.15	0.10
Calcium D Ca	15.8	16.8	19.8
Magnesium D Mg	1.91	1.90	2.00

&lt; = Less than

Results expressed as milligrams per litre except for pH,  
Conductivity ( $\mu$ mhos/cm), and Turbidity (NTU).

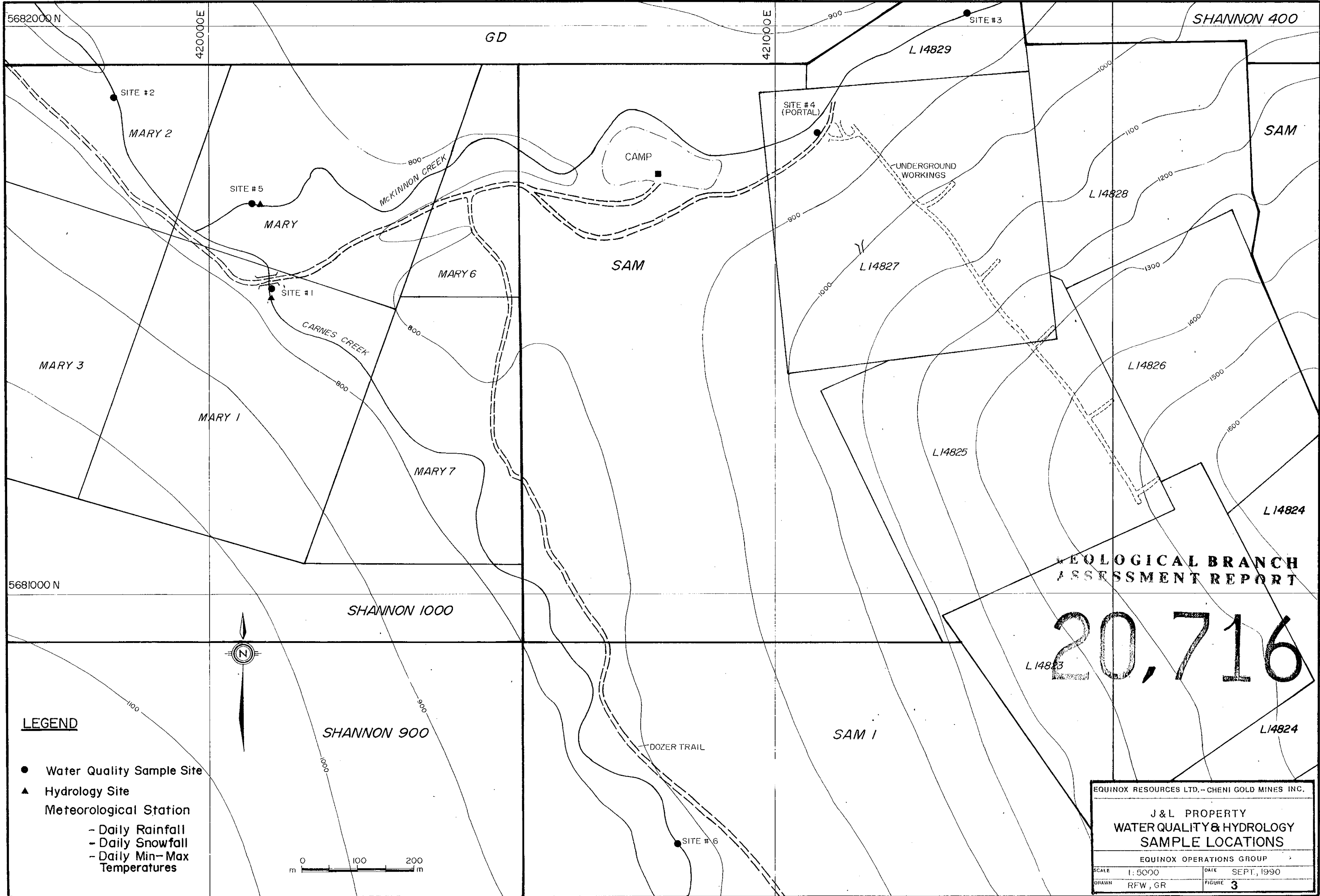
## RESULTS OF ANALYSIS

File No. 8415A  
Page 3 of 3

ASL

		Site 4 Jul 16/89	Site 5 Jul 16/89	Site 6 Jul 16/89
<b><u>Physical Tests</u></b>				
pH		7.69	7.76	7.64
Conductivity		425.	122.	91.7
Turbidity	NTU	1.2	111.	72.9
Suspended Solids		5.3	168.	136.
Dissolved Solids		359.	105.	77.3
Hardness	CaCO3	220.	61.8	47.4
<b><u>Anions and Nutrients</u></b>				
Alkalinity	CaCO3	193.	67.2	47.3
Sulphate	SO4	63.6	4.3	8.7
Chloride	Cl	<0.5	<0.5	<0.5
Fluoride	F	0.13	<0.02	<0.02
O-Phosphate	P	0.007	0.010	0.020
D-Phosphorous	P	0.020	0.019	0.023
T-Phosphorous	P	0.23	0.025	0.027
Nitrate	N	0.090	0.12	0.075
Nitrite	N	<0.001	<0.001	<0.001
Ammonia	N	<0.005	<0.005	0.013
<b><u>Cyanide</u></b>				
Tot. Cyanide	CN	<0.005	<0.005	<0.005
<b><u>Total Metals</u></b>				
Aluminium	T Al	0.031	1.06	3.00
Antimony	T Sb	0.091	0.0002	0.0002
Arsenic	T As	0.10	0.0007	0.0006
Barium	T Ba	0.028	0.045	0.034
Cadmium	T Cd	0.0007	<0.0002	<0.0002
Cobalt	T Co	<0.001	0.001	0.002
Chromium	T Cr	<0.001	0.003	0.006
Copper	T Cu	0.002	0.003	0.006
Iron	T Fe	0.15	2.55	4.23
Lead	T Pb	0.011	0.005	0.030
Manganese	T Mn	0.012	0.11	0.099
Mercury	T Hg	<0.00005	<0.00005	<0.00005
Molybdenum	T Mo	0.001	<0.001	<0.001
Nickel	T Ni	0.006	0.003	0.006
Selenium	T Se	<0.0005	<0.0005	<0.0005
Silver	T Ag	<0.0001	<0.0001	<0.0001
Zinc	T Zn	0.47	0.014	0.012
<b><u>Dissolved Metals</u></b>				
Aluminium	D Al	0.030	0.020	0.050
Antimony	D Sb	0.091	<0.0001	<0.0001
Arsenic	D As	0.082	0.0006	<0.0001
Barium	D Ba	0.026	0.020	0.010
Cadmium	D Cd	0.0004	<0.0002	<0.0002
Cobalt	D Co	<0.001	<0.001	<0.001
Chromium	D Cr	<0.001	<0.001	<0.001
Copper	D Cu	<0.001	<0.001	0.001
Iron	D Fe	<0.015	<0.015	<0.015
Lead	D Pb	0.005	<0.001	0.001
Manganese	D Mn	<0.005	<0.005	<0.005
Molybdenum	D Mo	0.001	<0.001	<0.001
Nickel	D Ni	0.006	<0.001	0.001
Selenium	D Se	<0.0005	<0.0005	<0.0005
Silver	D Ag	<0.0001	<0.0001	<0.0001
Zinc	D Zn	0.45	<0.005	<0.005
Potassium	D K	1.08	0.22	0.45
Sodium	D Na	2.85	0.10	0.17
Calcium	D Ca	64.3	21.3	15.7
Magnesium	D Mg	14.1	2.04	1.95

< = Less than    O = Ortho    T = Total    D = Dissolved  
Results expressed as milligrams per litre except for pH,  
Conductivity ( $\mu$ mhos/cm), and Turbidity (NTU).



5682000 N

420000 E

421000 E

SHANNON 400

GD

L 14829

SITE #2

MARY 2

SITE #5

MARY

MCKINNON CREEK

CAMP

SITE #4 (PORTAL)

UNDERGROUND WORKINGS

SAM

L 14828

SAM

MARY 6

L 14827

CARNES CREEK

MARY 3

SITE #1

MARY 1

L 14826

MARY 7

L 14825

5681000 N

SHANNON 1000

GEOLOGICAL BRANCH ASSESSMENT REPORT

20,716

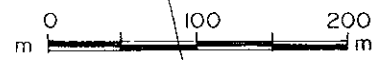
L 14824

L 14823

L 14824

**LEGEND**

- Water Quality Sample Site
- ▲ Hydrology Site
- Meteorological Station
  - Daily Rainfall
  - Daily Snowfall
  - Daily Min-Max Temperatures



SHANNON 900

DOZER TRAIL

SAM I

SITE #6

EQUINOX RESOURCES LTD. - CHENI GOLD MINES INC.	
J & L PROPERTY WATER QUALITY & HYDROLOGY SAMPLE LOCATIONS	
EQUINOX OPERATIONS GROUP	
SCALE 1:5000	DATE SEPT, 1990
DRAWN RFW, GR	FIGURE 3