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EXPLORATION REPORT

EAST EBY PROPERTY

EBY TOWNSHIP, ONTARIO

NTS: 42 A/1

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MINING LANDS SECTION

PREPARED FOR

BUTTE CANYON RESOURCES INC.

DERRY, MICHENER, BOOTH & WAHL

James R. Lawton, B.Sc.

Ian D. Trinder, B.Sc.

Toronto, Ontario  
August 31, 1988

Ref.: 88-82

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## SUMMARY

During the period June 21, 1988 to July 13 1988, Derry, Michener, Booth & Wahl (DMBW), on behalf of Butte Canyon Resources Inc., carried out a geological mapping and lithogeochemical sampling program on the East Eby property, Eby Township, Ontario. The property is located approximately 20 km southwest of Kirkland Lake and 5 km southeast of the town of Kenogami Lake.

Despite the fact that the property has been the site of historic exploratory drilling, trenching and blasting since the 1930's and several samples containing anomalous to highly anomalous gold values up to 0.2 oz. Au/ton have been reported, it was DMBW's belief that the property had not been adequately explored. A property-wide mapping and geochemical sampling program was therefore proposed.

The property is predominantly underlain by a northeast-striking, subvertically-dipping sequence of felsic to mafic volcanics and volcanogenic sediments intruded by various types of plutonic rocks.

The southern portion of the property is underlain by a major unit of dominantly felsic flows and pyroclastics and iron formation horizons. Minimal diamond and stripped exposures of the unit indicate that both oxide and sulphide facies iron formation are present.

The entire property was mapped at a scale of 1:2,500, with a small section of detailed mapping at a scale of 1:1,000. In addition, a lithogeochemical sampling program was carried out over the property.

Results of the current sampling program have not been encouraging with respect to gold mineralization. The highest gold value returned was 81 ppb Au which, while slightly anomalous, is not significant.

(ii)

Platinum-palladium analytical results are quite interesting and indicate a couple of anomalous zones that require some follow-up work.

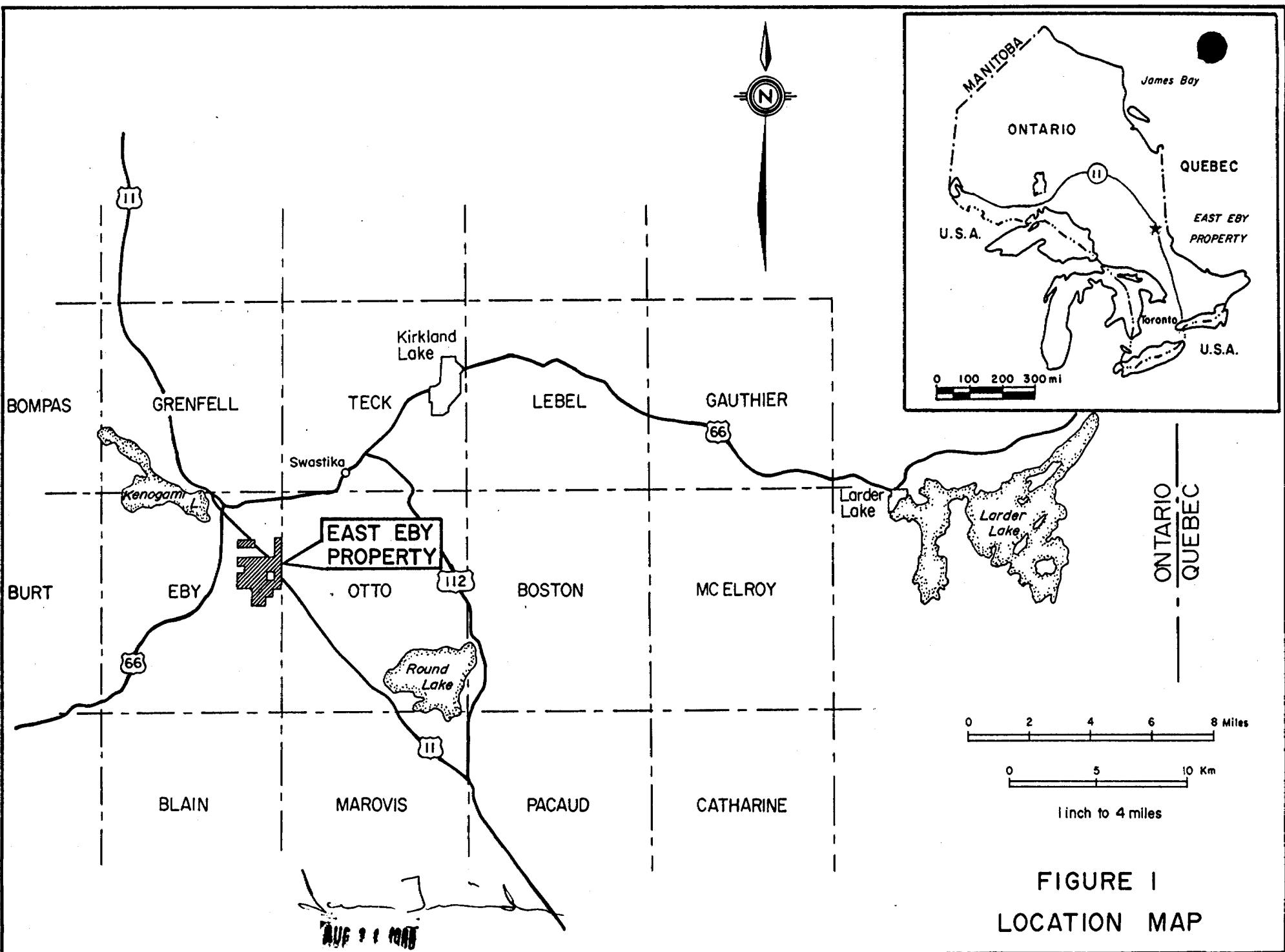
DMBW, therefore, recommends that a limited lithogeochemical and soil geochemical sampling program be carried out to delineate the platinum anomaly.

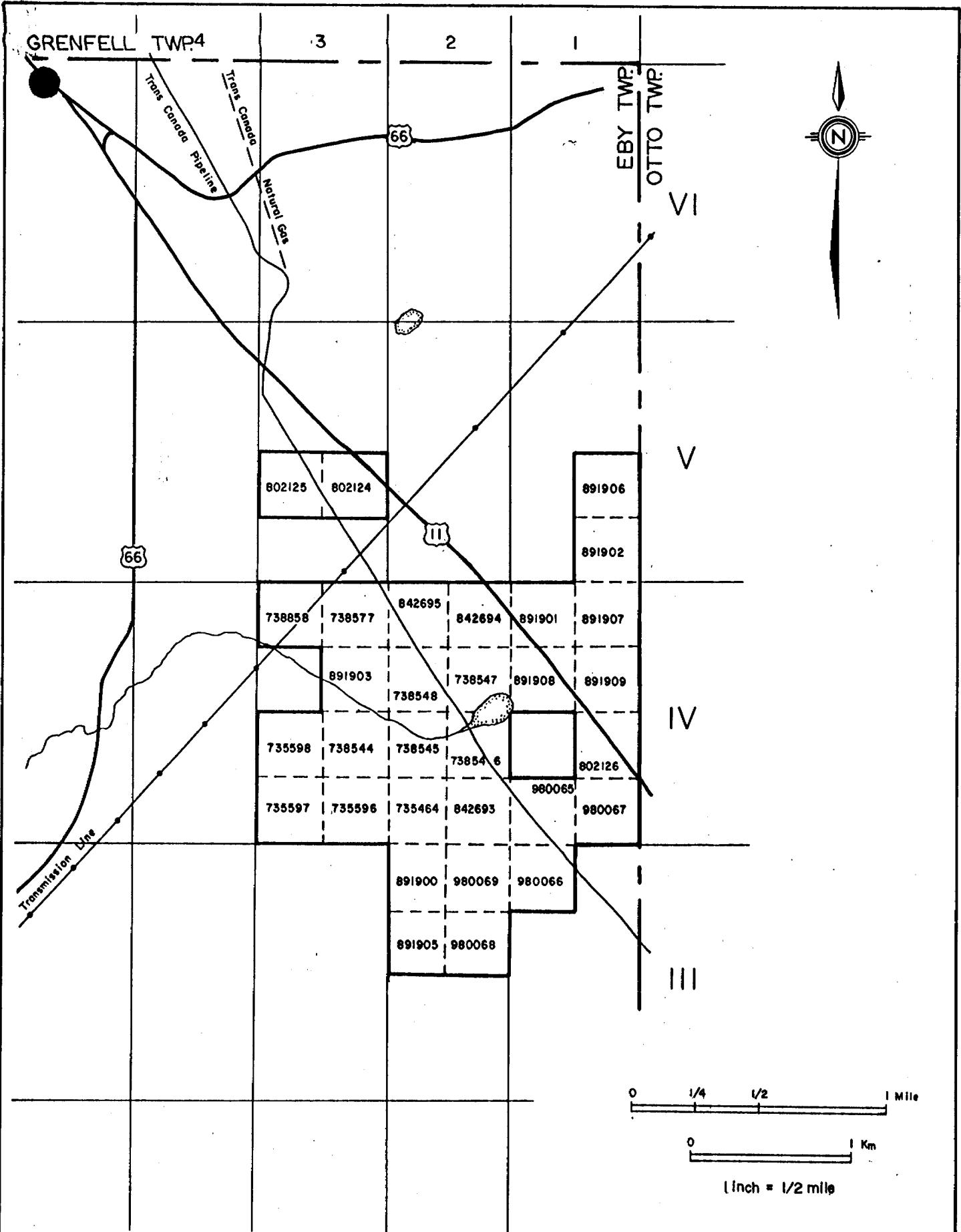
## INTRODUCTION

The following report was prepared by Derry, Michener, Booth & Wahl (DMBW) at the request of Butte Canyon Resources Inc. The report describes the geological mapping and geochemical sampling program carried out by J. R. Lawton, DMBW contract geologist, during the period June 21, 1988 to July 13, 1988.

## PROPERTY, LOCATION, DESCRIPTION AND ACCESS

The East Eby property is located in Eby Township approximately 20 km southwest of Kirkland Lake and 5 km southeast of the town of Kenogami Lake (Figure 1). The property consists of the following 31 unpatented mining claims covering approximately 496 hectares (Figure 2).





NOTE:

All claim numbers prefixed by letter "L".

AUG 31 1988

FIGURE 2  
CLAIM MAP

<u>Claim Numbers</u>	<u>Date of Record</u>	<u>Total Days Credit Approved and Applied For</u>	<u>Anniversary Date*</u>
L735464	March 7, 1984	211	March 7, 1990
L735596	March 7, 1984	211	March 7, 1990
L735597 - 98	March 7, 1984	197	March 7, 1989
L738544	March 7, 1984	197	March 7, 1989
L738545	March 7, 1984	211	March 7, 1990
L738546 - 47	March 7, 1984	202	March 7, 1990
L738548	March 7, 1984	211	March 7, 1990
L738577	March 7, 1984	201	March 7, 1990
L738858	March 9, 1984	162	March 9, 1989
L802124	March 27, 1985	169	March 27, 1990
L802125	March 27, 1985	170	March 27, 1990
L802126	March 28, 1985	171	March 28, 1990
L842693	April 29, 1985	171	April 29, 1990
L842694 - 95	December 12, 1985	131	December 12, 1989
L891900	May 27, 1986	131	May 27, 1990
L891901	July 28, 1986	111	July 28, 1990
L891902	July 30, 1986	117	July 30, 1990
L891903	November 21, 1986	87	November 21, 1989
L891905	May 27, 1986	131	May 27, 1990
L891906	July 30, 1986	97	July 30, 1989
L891907	July 28, 1986	124	July 28, 1990
L891908	July 28, 1986	74	July 28, 1989
L891909	July 28, 1986	111	July 28, 1990
L980065 - 66	April 7, 1987	111	April 7, 1991
L980067	April 7, 1987	97	April 7, 1990
L980068 - 69	April 7, 1987	111	April 7, 1991

\* The anniversary date given is based, in part, on the recent Report of Work forms filed with The Ministry of Northern Development and Mines (reproduced in Appendix C).

Note that all claims with the exception of two, claims L802124 and L802125, are contiguous with the group. For abstracts of previous assessment work refer to Hartwick and Woolham (1987).

Access to the property is excellent. Highway 11 crosscuts the northeast corner of the property and there are bush roads and trails which lead to the other sections. In addition, a wide clearing for the Trans Canada Pipeline crosscuts the centre of the property, providing excellent accessibility.

DMBW has not examined title to the claims nor substantiated their physical boundaries and, accordingly, expresses no opinion as to validity of title and property description.

### REGIONAL GEOLOGY

The regional geology of the Kirkland Lake area is shown in Figure 3 after Ontario Geological Survey (OGS) Map 2205. Although this regional map is very similar to the Geological Survey of Canada (GSC) map published in Goodwin (1979), many stratigraphic correlations and theories pertaining to the genesis of the gold ore deposits are fundamentally different. The authors favour the GSC interpretation and, consequently, the following summary is taken from Ridler (1972) and from Goodwin (1979).

Essentially all of the consolidated rocks in the Kirkland Lake area are of Precambrian age. Proterozoic formations consist of Gowganda Formation sediments of the Cobalt Group, and two generations of diabase dykes. The more areally extensive Archean stratigraphy can be essentially divided into four major stratigraphic categories:

- (1) Pre-Timiskaming mafic to felsic flows and pyroclastics, chemical sediments and local ultramafic flows and intrusives.
- (2) Timiskaming group fine- to coarse-grained clastic metasediments, chemical metasediments, alkaline flows, tuffs and breccias, felsic volcanics and komatiitic (ultramafic) flows.
- (3) Post-Timiskaming Highway 11 basalts and local komatiites.
- (4) Various gabbroic, syenitic and granitic intrusives.

The pre-Timiskaming rocks consist of a thick (up to 27,500 m), conformable sequence of Skead Group volcanics and sediments and overlying McVittie Basalts.



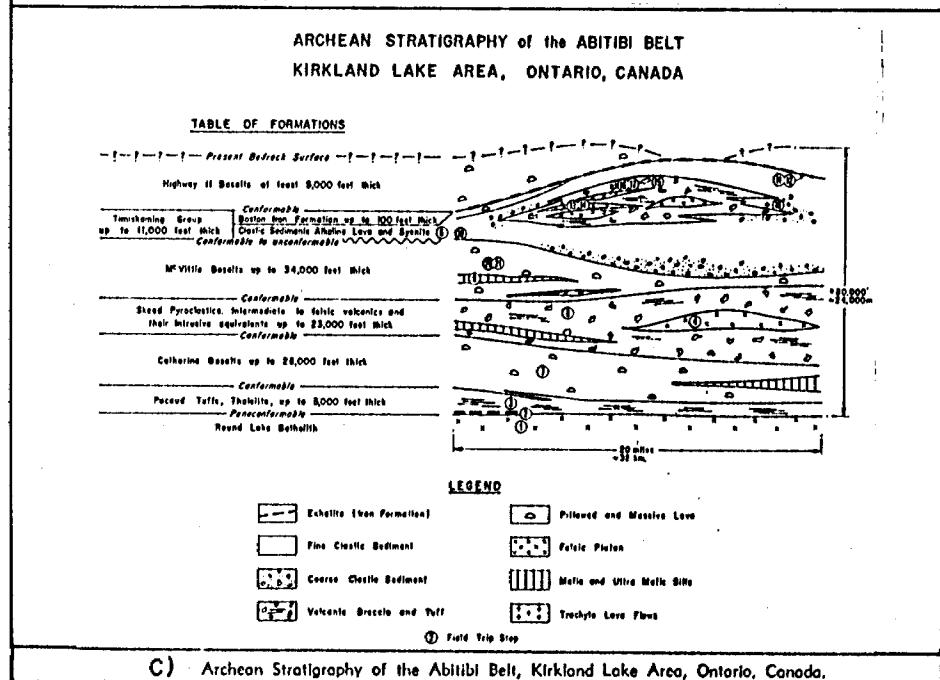
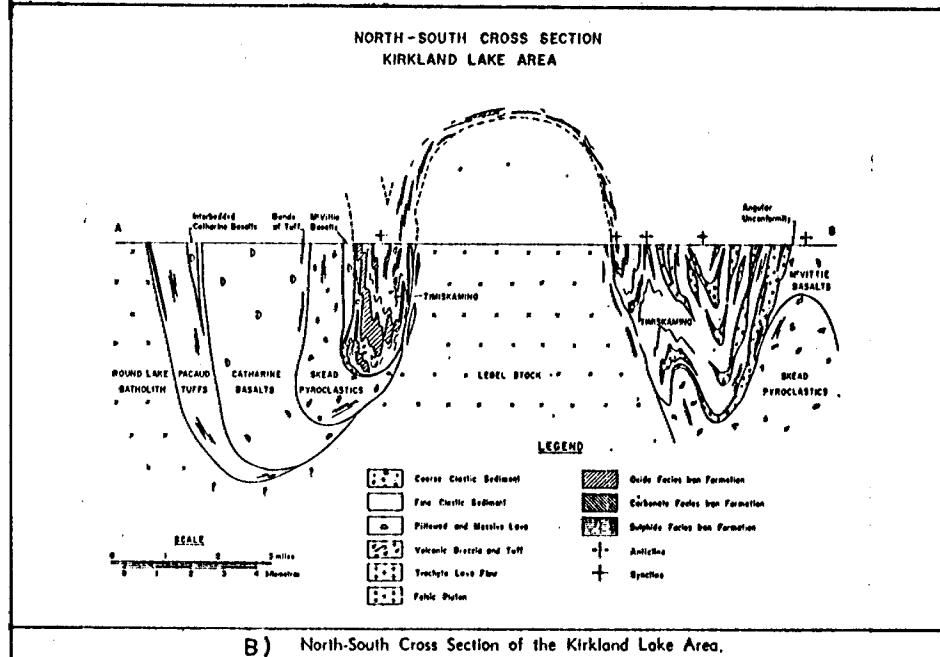
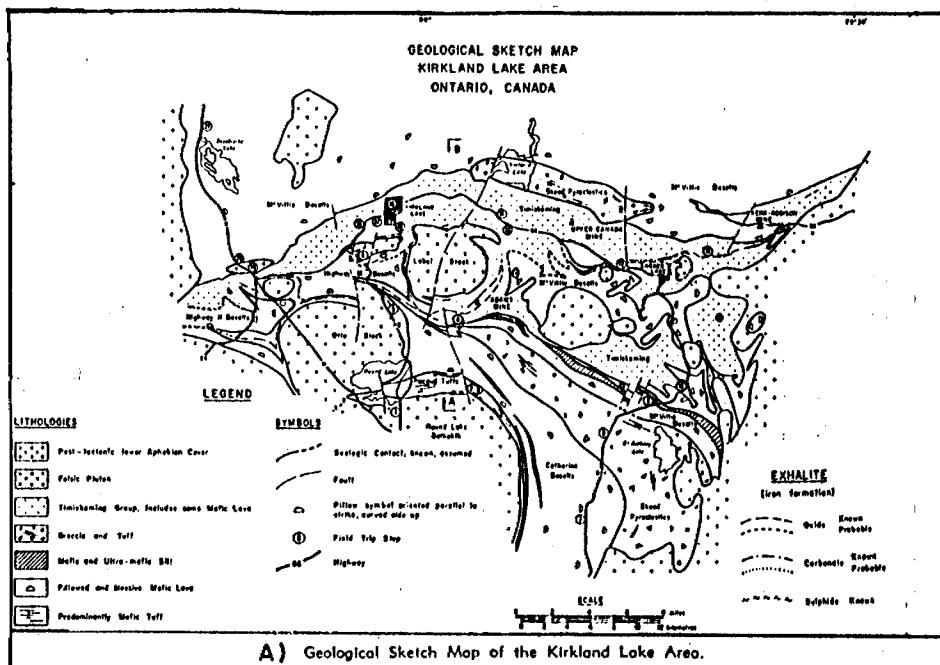
As shown in Figure 4, the lower part of the Skead Group consists of the Catherine Formation: a thick succession of tholeiitic pillow lavas and local komatiite flows with associated synvolcanic intrusives and interbedded tuffs. At the base of the sequence lies the Pacaud Tuffs which are in direct contact with the Round Lake Batholith. Overlying the Catherine Basalts at the top of the Skead Group are the Skead Pyroclastics: a thick, variable sequence of andesitic, dacitic and rhyodacitic breccias, tuffs and their hypabyssal equivalents.

Overlying the Skead Group is a thick (up to 1,000 m) sequence of compositionally heterogeneous mafic pillow lavas, flow breccias and associated gabbroic phases called the McVittie Basalts. Thin interflow bands of alkaline tuff, chert and carbonaceous exhalite are common at the base of the sequence (Figure 4(c)).

Ridler (1970) suggests that the Skead Group represents a thick platform of basalts locally surmounted by large pyroclastic domes. South of Kirkland Lake the entire sequence subsided prior to McVittie volcanism without significant folding such that the Skead-McVittie contact is everywhere conformable. The McVittie Basalts which occur north of Kirkland Lake have been named the Kinojevis Group by Jensen (1979).

Overlying the predominantly volcanic Skead-McVittie succession lies the 300 m to 1,100 m thick Timiskaming Group, a complex of greywacke, polymictic conglomerate, exhalite (Boston Iron Formation) and ultramafic (komatiitic) to felsic igneous rocks. In the vicinity of Kirkland Lake lies a unique suite of variably alkalic pyroclastics and flows. Ridler (1972) states that the Boston Iron Formation can be used locally to define the upper limit of the group.

North and west of the East Eby property, a basal sequence of mafic lavas called the Highway 11 Basalts (Ridler, 1972) conformably overlies the Timiskaming Group. This sequence has been included with the Kinojevis Group by Jensen (1978).



*John Jind*  
AUG 31 1988

(After Ridler, 1972)

FIGURE 4: REGIONAL FORMATION MAP AND SECTIONS

There are four main types of plutonic rocks in the Kirkland Lake area: ultramafic to felsic sills; intermediate to felsic diapiric stocks; felsic batholiths; and small discordant felsic and/or alkaline intrusions.

Regional metamorphic grade is generally lower to middle greenschist facies with amphibolite grade rocks occurring in the contact aureoles of intrusive stocks.

#### EXPLORATION HISTORY

The East Eby property area has been the site of much exploration over the years, with the first documented exploration work starting in 1930 when a 7 hole, 915 m (3,002 ft.) drilling program was carried out by Todara Kirkland Prospecting Syndicate. For further information on the exploration history of the property and surrounding area see Hartwick and Woolham (1987).

Since acquiring portions of the current East Eby property in 1984, the property vendors, Mr. F. Rivard and his partners, have carried out extensive surface stripping and trenching and have drilled two diamond drill holes totalling 276 m (904 ft.). For the drill logs refer to Hartwick and Woolham (1987).

#### PRESENT PROGRAM

The 1988 summer exploration program was carried out by DMBW contract geologist J.R. Lawton and one technician from June 21 to July 13, 1988 and included the following:

- (a) Geological mapping of the entire property at a scale of 1:2,500. Control was maintained through use of a cut-line grid with 100 m spaced lines picketed every 25 m. The baseline was oriented at 045°.

- (b) Geological mapping of the southwest corner of the property at a scale of 1:1,000. Control was maintained by a compass and tape grid put in by the author. The 25 m spaced lines were picketed every 25 m.
- (c) A lithogeochemical sampling program was carried out over the entire property, a total of 171 composite grabs were taken.

#### Lithogeochemical Sampling

The objective of the property-wide sampling program was to test for anomalous concentrations of a variety of elements and chemical groups relative to background concentrations in the various rock types. Correlation of these results could provide a detailed picture of the geochemical nature of the property and give an indication of where further exploration should be directed.

#### Sampling Methods

Representative chip samples collected over several m<sup>2</sup> were taken every 100 m, or whenever a new rock type occurred along the cut lines. Samples were also taken along the strike of an oxide facies iron formation to help delineate it and check for chemical changes.

The samples were all analyzed for a multi-element suite including Au and Ag (See Table 1 for the list of elements and oxides). In addition, 12 samples were also analyzed for platinum and palladium (See Appendix B for analytical results).

Table 1

ELEMENTS ANALYZED FOR IN MULTI-ELEMENT ANALYSIS

Au (in ppb)	Nb (in ppm)	Zn (in ppm)	Pt (in ppb)
Ag (in ppm)	Ni (in ppm)	Zr (in ppm)	Pd (in ppb)
As (in ppm)	Pb (in ppm)		
B (in ppm)	S% (in ppm)	Al <sub>2</sub> O <sub>3</sub> (in %)	
Ba (in ppm)	Sb (in ppm)	Fe <sub>2</sub> O <sub>3</sub> (in %)	
Be (in ppm)	Se (in ppm)	CaO (in %)	
Bi (in ppm)	Sn (in ppm)	MgO (in %)	
Cd (in ppm)	Sr (in ppm)	Na <sub>2</sub> O (in %)	
Ce (in ppm)	Te (in ppm)	K <sub>2</sub> O (in %)	
Co (in ppm)	Th (in ppm)	TiO <sub>2</sub> (in %)	
Cr (in ppm)	U (in ppm)	MnO (in %)	
Cu (in ppm)	V (in ppm)	P <sub>2</sub> O <sub>5</sub> (in %)	
La (in ppm)	W (in ppm)		
Mo (in ppm)	Y (in ppm)		

### PROPERTY GEOLOGY

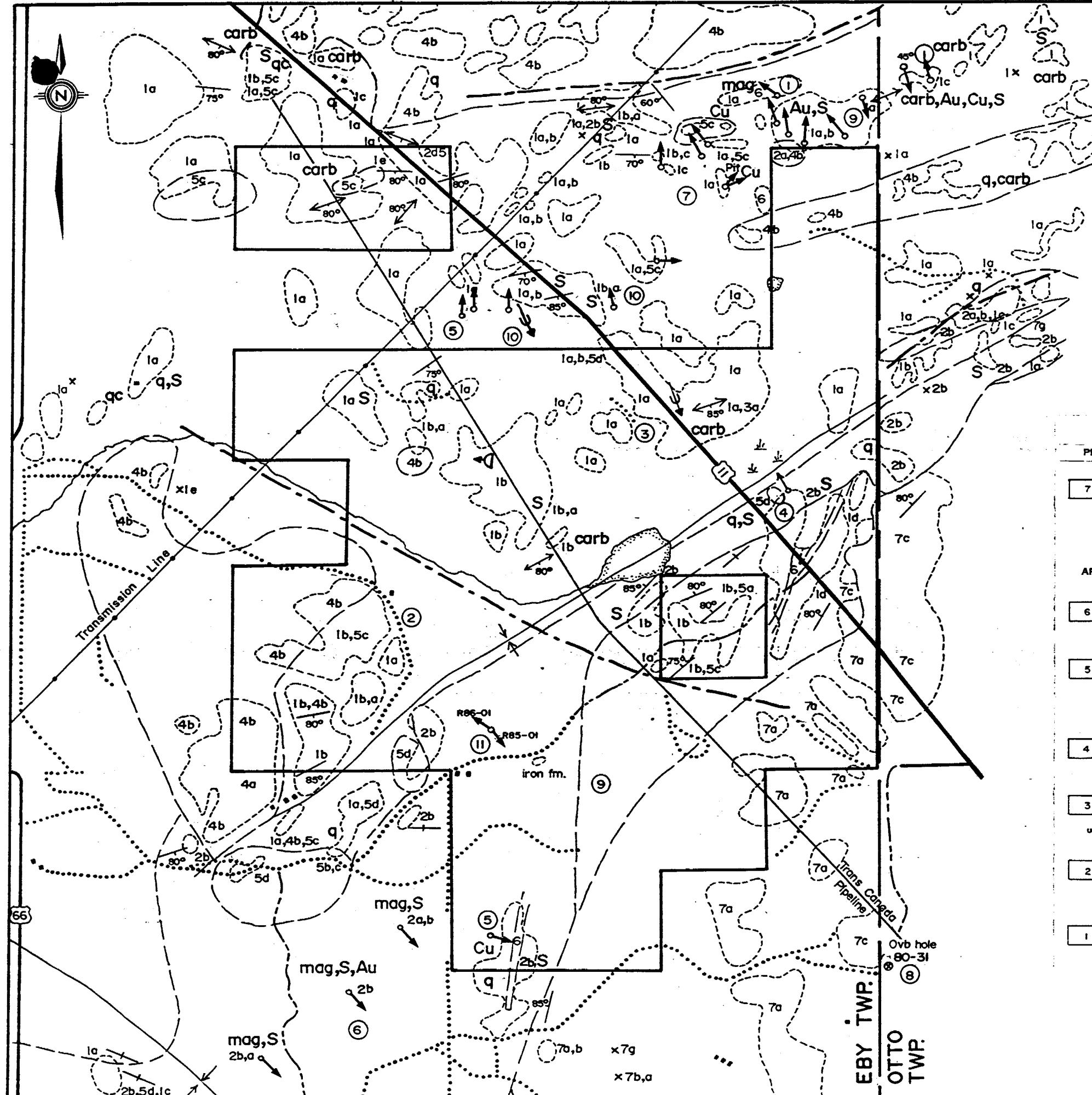
The East Eby property is underlain by a northeast-striking, subvertically-dipping sequence of felsic to mafic volcanics and volcanogenic sediments intruded by plutonic rocks of various compositions.

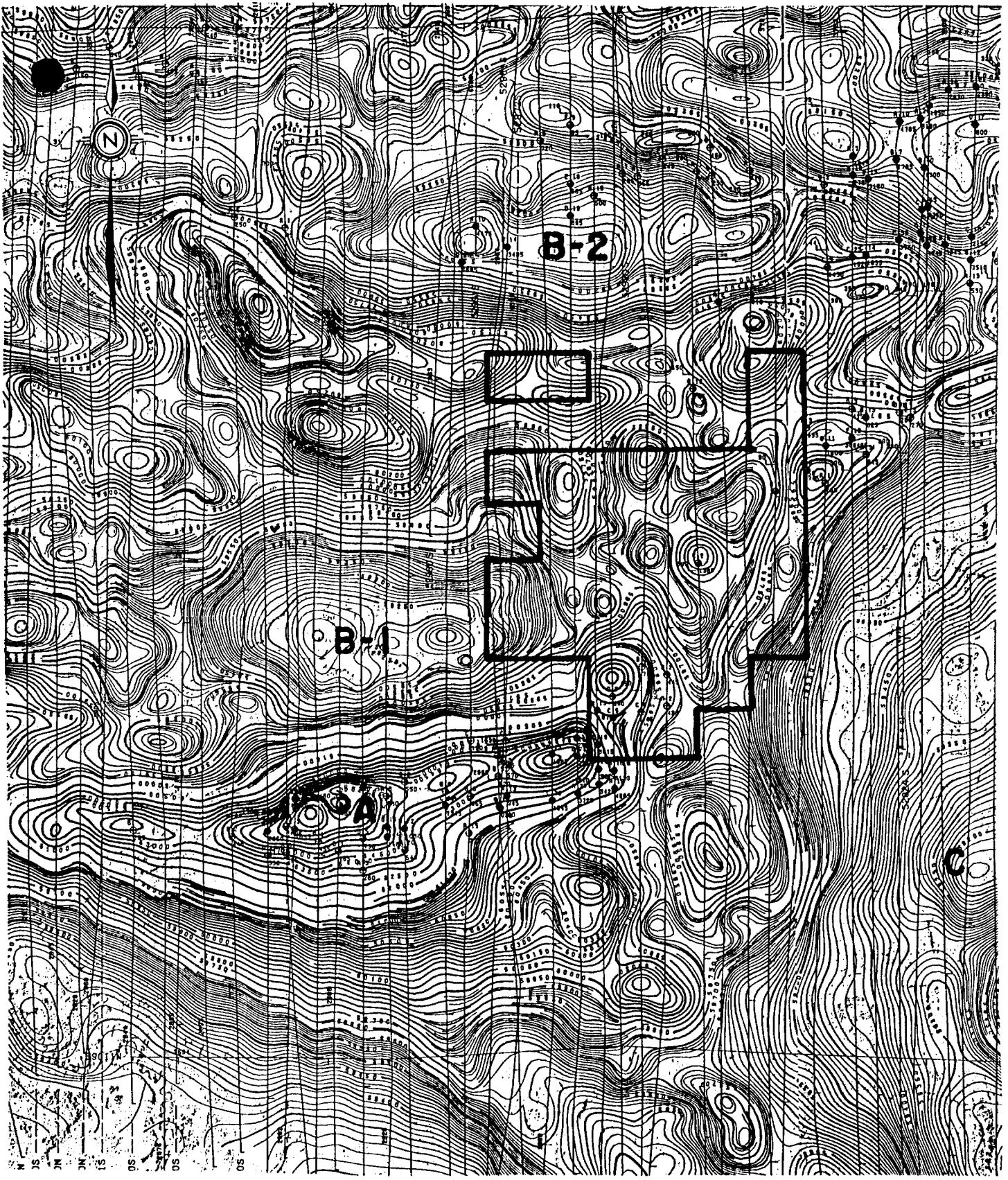
The major unit of interest on the property consists predominantly of southwest striking felsic flows and pyroclastics and iron formation horizons (Figure 5). Two diamond drill holes collared in this sequence by F. Rivard (Figure 5, Map 88-82-01) also intersected impure, medium to coarse-grained sandstones, arkose horizons and a cherty, aphanitic, iron-poor equivalent to an iron formation. The bottom half of drill hole R86-01 consists mainly of a komatiite flow structurally overlying a thick komatiitic sediment. See Hartwick and Woolham (1987) for the drill logs.

Lying to the south of the property is the late Archean alkalic Otto stock. It consists of a very coarse grained syenite with varying amounts of included mafic material. An almost pure amphibolite is present in the contact aureole. While minor sulphides are present this unit is not of economic value.

The other intrusives on the property are a series of mafic-ultramafic dykes, sills and plugs (Maps 88-82-01 and 88-82-02). They appear to be gabbro/norites and contain up to 1% disseminated pyrite and minor pyrrhotite and have a weak magnetic character. Several of these were analyzed for platinum and palladium (see Discussion of Results).

There are a number of faults crosscutting the property area with a general northwest trend. These faults could not be located on the ground or the outcrop scale; however, they are evident with geophysical methods (Figures 6 and 7). Aeromagnetic patterns are discussed by Hartwick and Woolham (1987). The locally strong sulphide concentrations in the oxide facies iron formation appear to be epigenetic mineralization localized by the above faults rather than syngenetic sulphides precipitated at the time of deposition.



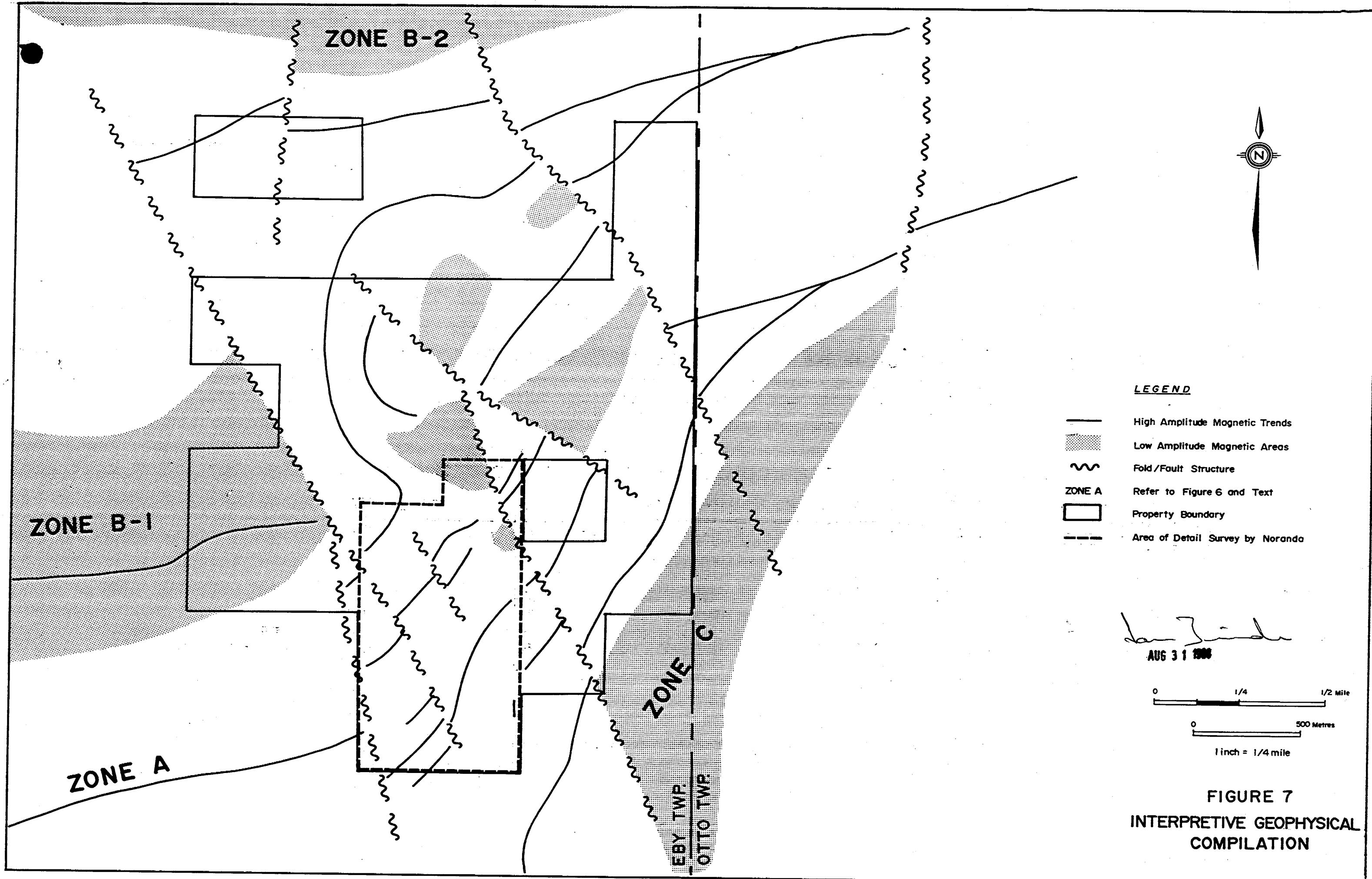


0 800 1600 metres

*John Smith*  
AUG 31 2000

FIGURE 6  
AEROMAGNETIC MAP  
EBY AND OTTO  
TOWNSHIPS  
1:40,000

After OGS Maps P2268-69



The only other major structure on the property is an antiform with an axis trending northeast-southwest just south of the baseline.

### ECONOMIC GEOLOGY

The purpose of the exploration program was to delineate a unit or zone which would return consistently anomalous gold values.

The main target was an oxide facies iron formation which outcropped at various locations across the length of the property (Maps 88-82-01 and 88-82-02). The unit varies from an almost pure layered chert to a classic oxide facies iron formation with well banded layers up to 10 cm wide containing chert and weak to moderate magnetite and hematite mineralization (Plates 1 and 2). In some places it has been altered to almost massive pyrite and pyrrhotite (Plate 5).

A series of samples was taken along the length of the unit to establish gold values and overall compositional changes. Unfortunately, no results over 81 ppb Au were obtained. In fact, the locally abundant pyrite and pyrrhotite mineralization, while visually impressive, returned no significant Au or base metal values.

An area just north of the baseline consisting of mafic metavolcanics showed a slight correspondence between relatively high Au values, above 40 ppb, and high Cr (above 500 ppm) and Ni (above 200 ppm) values. Sample 4750 returned 2,040 ppm Cr, 616 ppm Ni and 26 ppb Au. Northeast of this, sample 4823 returned 1,247 ppm Cr, 445 ppm Ni and 79 ppb Au (See Table 2 for anomalous values). These values are anomalous and appear to be within the same lithological unit.



Plate 1: Classic oxide facies iron formation



Plate 2: Stripped area showing iron formation

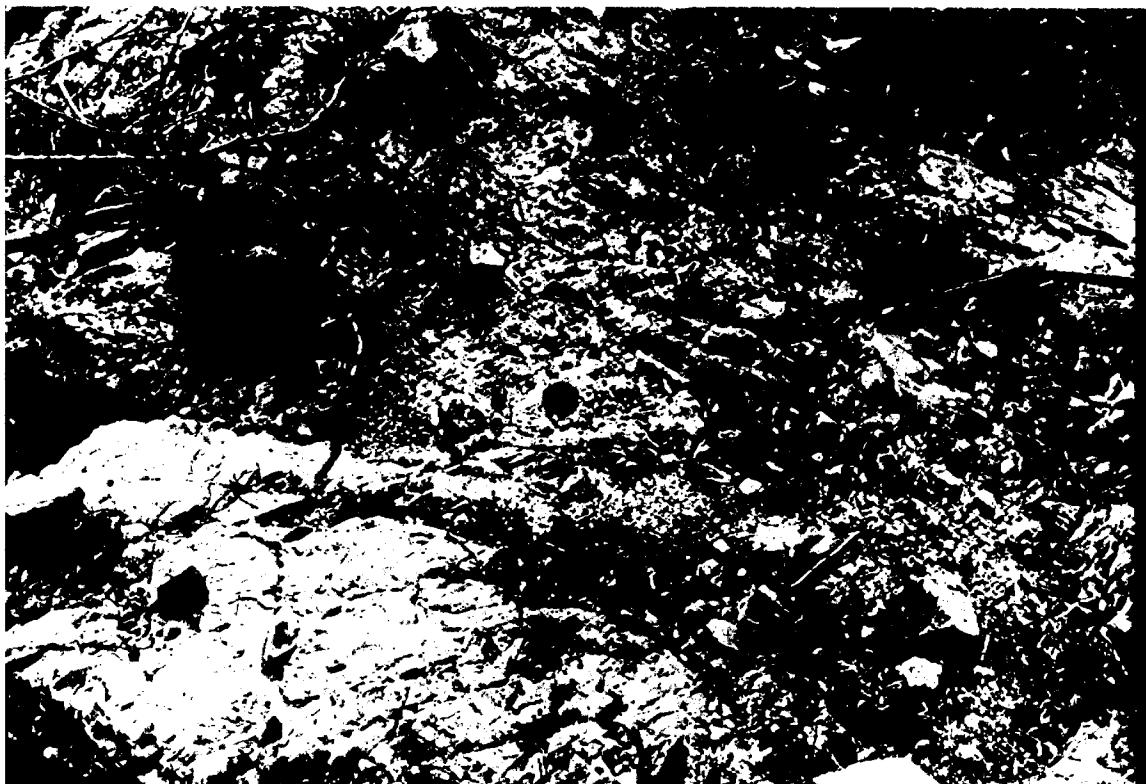


Plate 3: Layered cherty chemical sediment

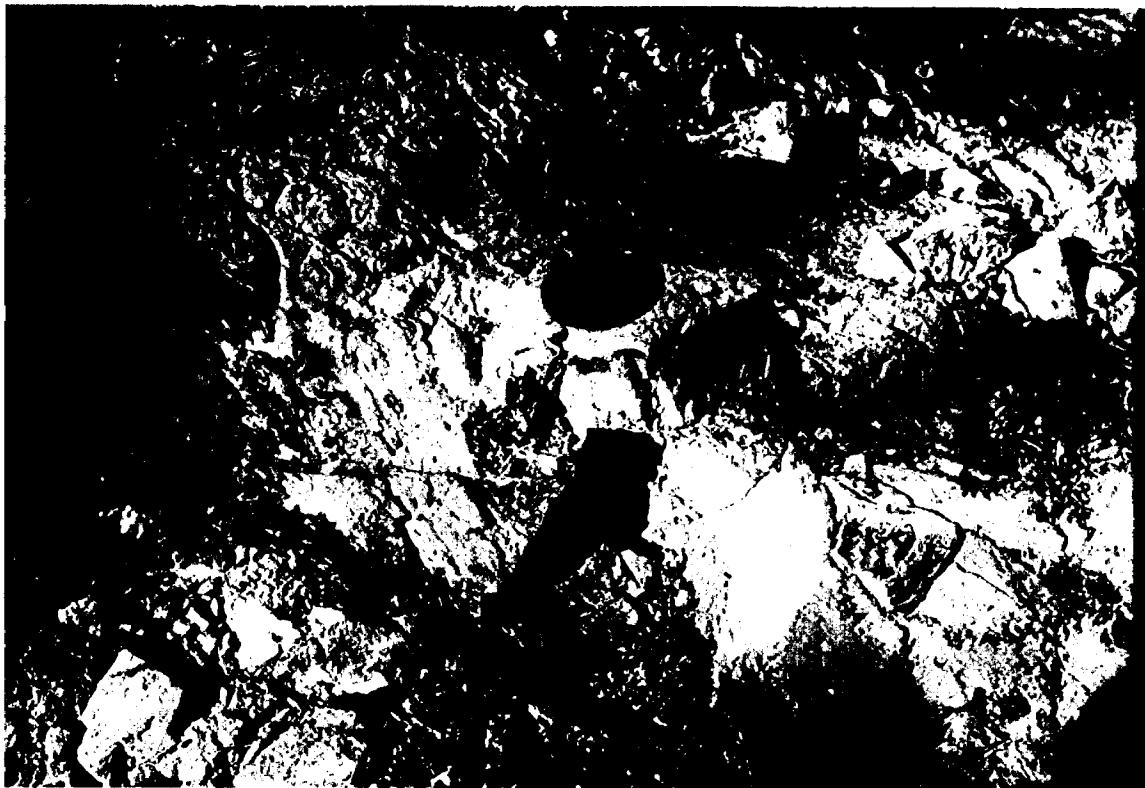


Plate 4: Layered chert

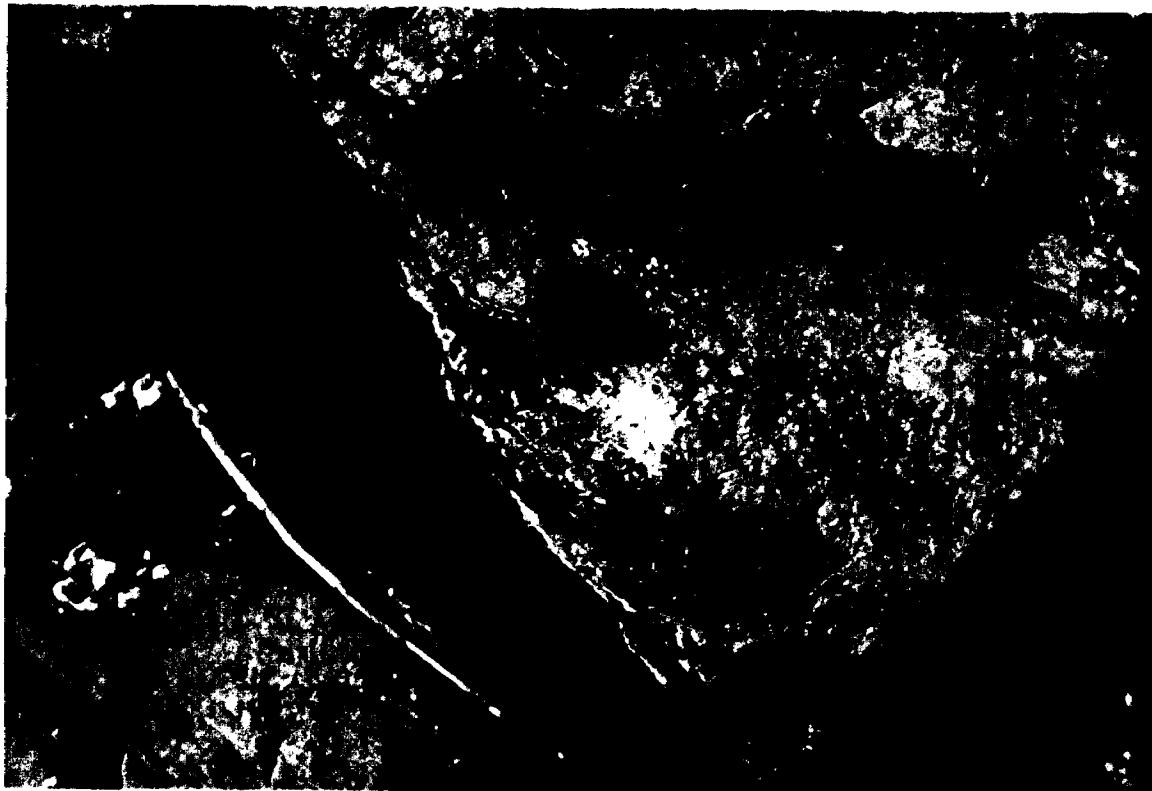


Plate 5: Sulphide altered oxide facies iron formation

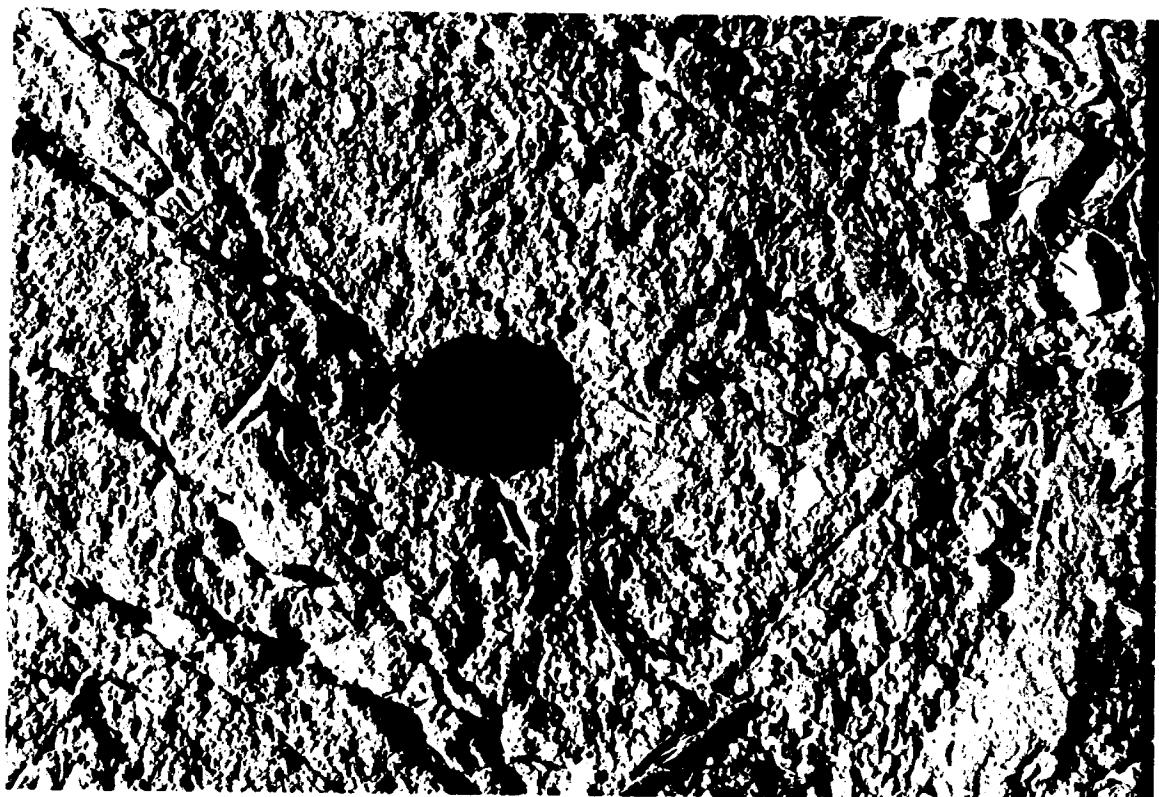


Plate 6: Skead conglomerate

Table 2

CORRESPONDING Au AND HIGH Cr AND Ni VALUES

<u>Sample No.</u>	<u>Au (ppb)</u>	<u>Cr (ppm)</u>	<u>Ni (ppm)</u>
4710	67	810	220
4722	71	1,020	430
4725	23	1,660	1,650
4739	38	550	260
4750	26	2,040	616
4768	24	731	195
4796	75	513	339
4823	79	1,247	445
4849	51	2,130	697
4935	63	1,500	534

The remaining economic target is the extensive mafic-ultramafic intrusive rock represented by gabbro/norites. Twelve samples from this unit were analyzed for platinum and palladium. Five samples returned distinctly anomalous values, with the highest being 390 ppb Pt and the lowest 145 ppb (Table 3).

These samples occur in distinct zones (Maps 88-82-01 and 88-82-02) and, consequently, represent a significant target.

Table 3

ANOMALOUS PLATINUM VALUES >50 PPB

<u>Sample No.</u>	<u>Pt</u>	<u>Pd</u>	<u>Lithology</u>
Zone 1	4780	250	<15
	4787	145	<15
Zone 2	4922	235	<15
Zone 3	4928	387	<15
	4929	390	<15
			mafic intrusive (gabbro?)
			mafic intrusive (gabbro?)

### DISCUSSION OF RESULTS

The objective of the program was to accurately map and sample the entire property in an effort to delineate significant gold anomalies.

Table 2 lists the samples which returned anomalous gold, Cr and Ni values (cut-offs of 500 ppm Cr and 200 ppm Ni) and Table 3 lists anomalous platinum values.

Unfortunately, as mentioned in the Economic Geology section of this report, the highest gold value returned was 81 ppb Au. As the background for the property is 50 ppb and the anomaly threshold is 70 ppb, the above value is anomalous; however, it is not considered significant. There are, however, some high Cr and Ni values present which correspond to a slight degree to the higher gold values (See Table 2). This could represent an area requiring backup sampling and exploration.

Twelve samples were analyzed for platinum and palladium and returned some very anomalous values, the highest being 390 ppb (see Table 3). The values seem to be within specific zones or units of gabbro/norites. This, combined with the commonly associated high Cr background, suggests that a soil geochemical and lithogeochemical sampling program could possibly delineate the extent of these anomalies.

### CONCLUSIONS AND RECOMMENDATIONS

Unfortunately, the lithogeochemical sampling program failed to outline a significant gold anomaly.

However, the results of the platinum analysis indicate that there is a distinct possibility that a significant platinum anomaly can be delineated on the property. Therefore, DMBW recommends that a limited follow-up field program consisting of lithogeochemical and soil geochemical sampling be conducted to investigate this possibility.

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CERTIFICATE OF QUALIFICATION

I, James R. Lawton, of Apt. 1811, 270 Scarlett Road, Toronto, Ontario, M6N 4X7, do hereby certify that:-

1. I am an exploration geologist employed with Derry, Michener, Booth & Wahl, Consulting Geologists and Engineers, of Toronto.
2. I am a graduate of Queen's University at Kingston in Honours Geology with the degree of B.Sc. in 1985.
3. I have been practising my profession since graduation.
4. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the properties or securities of Butte Canyon Resources Inc.
5. The statements contained in this report and the conclusions and recommendations made are based upon my review of all data available. I have visited the property.
6. I hereby consent to the use of this report in a Statement of Material Facts of the Company for the preparation of a prospectus for submission to the Ontario Securities Commission and other regulatory authorities.

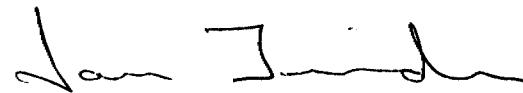
Toronto, Ontario  
August 31, 1988

James R. Lawton, B.Sc.

**CERTIFICATE OF QUALIFICATION**

I, Ian D. Trinder, of Apt. 2025, 30 Denton Avenue, Scarborough, Ontario do hereby certify that:-

1. I am an exploration geologist employed with Derry, Michener, Booth & Wahl, Consulting Geologists and Engineers of Toronto.
2. I graduated from the University of Manitoba in 1983 with a degree of Bachelor of Science, Honours Geology.
3. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the properties or securities of Butte Canyon Resources Inc.
4. The statements contained in this report and the conclusion and recommendations made are based upon my review of all data available. I have not visited the property.
5. I hereby consent to the use of this report in a Statement of Material Facts of the Company for the preparation of a prospectus for submission to the Ontario Securities Commission and other regulatory authorities.



Ian D. Trinder

Ian D. Trinder, B.Sc.

Toronto, Ontario  
August 31, 1988

APPENDIX A

PHOTOS



Pipeline running through center of property



Drill holes R86-01 and R86-02



Oxide facies iron formation



Blast pit with sulphide altered oxide facies iron formation

**APPENDIX B**

**ASSAY CERTIFICATES**


**ASSAYERS (ONTARIO) LIMITED**

 33 CHAUNCEY AVENUE, TORONTO, ONTARIO M8Z 2Z2 • TELEPHONE (416) 239-3527  
 FAX (416) 239-4012

**Certificate of Analysis**
Certificate No. DMBW-01/7880Date: July 18, 1988Received 77 Samples of RockSubmitted by Derry, Michener, Booth & Wahl Att'n: Mr. James Lawton  
c.c. Mr. P. Hartwick

Project # : BCR 105

Sample No.	Au ppb	Sample No.	Au ppb
4701	34	4721	73
4702	35	4722	71
4703	50	4723	48
4704	79	4724	46
4705	23	4725	23
4706	22	4726	12
4707	13	4727	50
4708	24	4728	35
4709	40	4729	38
4710	67	4730	37
4711	39	4731	40
4712	58	4732	41
4713	46	4733	65
4714	42	4734	55
4715	64	4735	81
4716	23	4736	35
4717	26	4737	45
4718	34	4738	80
4719	53	4739	38
4720	22	4740	67

ASSAYERS (ONTARIO) LIMITED

Per

J. van Engelen Mgr.



# ASSAYERS (ONTARIO) LIMITED

33 CHAUNCEY AVENUE, TORONTO, ONTARIO M8Z 2Z2 • TELEPHONE (416) 239-3527  
FAX (416) 239-4012

B - 2

## Certificate of Analysis

Certificate No. DMBW-01/02/7880

Date: July 18, 1988

Received 77 Samples of Rock

Submitted by Derry, Michener, Booth & Wahl Att'n: Mr. James Lawton  
c.c. Mr. P. Hartwick

Sample No.	Au ppb	Sample No.	Au ppb
4741	14	4761	28
4742	32	4762	30
4743	27	4763	38
4744	50	4764	32
4745	37	4765	18
4746	35	4766	19
4747	24	4767	40
4748	15	4768	24
4749	10	4769	38
4750	26	4770	33
4751	56	4771	23
4752	34	4772	27
4753	26	4773	21
4754	59	4774	43
4755	34	4775	59
4756	33	4776	80
4757	35	4777	50
4758	17		
4759	20		
4760	34		

ASSAYERS (ONTARIO) LIMITED

Per \_\_\_\_\_

J. van Engelen Mgr.



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**ASSAYERS (ONTARIO) LIMITED**

33 CHAUNCEY AVENUE, TORONTO, ONTARIO M8Z 2Z2 • TELEPHONE (416) 239-3527  
FAX (416) 239-4012

JUL 25 1988

**Certificate of Analysis**

Certificate No. DMBW-02/01/7884

Date: July 18, 1988

Received 94 Samples of Rock

Submitted by Derry, Michener, Booth & Wahl Att'n: Mr. James Lawton  
c.c. Mr. P. Hartwick

Sample No.	Au ppb	Sample No.	Au ppb	Sample No.	Au ppb
4778	62	4798	49	4836	57
4779	48	4799	64	4837	32
4780	34	4800	46	4838	67
4781	26	4819	40	4839	41
4782	15	4820	27	4840	45
4783	30	4821	58	4841	20
4784	60	4822	29	4842	38
4785	48	4823	79	4843	57
4786	66	4824	51	4844	51
4787	81	4825	56	4845	56
4788	73	4826	49	4846	60
4789	55	4827	57	4847	49
4790	65	4828	35	4848	34
4791	70	4829	63	4849	51
4792	30	4830	30	4850	47
4793	19	4831	30	4851	32
4794	51	4832	54	4901	68
4795	23	4833	71	4902	41
4796	75	4834	58	4903	25
4797	55	4835	61	4904	64

ASSAYERS (ONTARIO) LIMITED

Per \_\_\_\_\_  
J. van Engelen Mgr.


**ASSAYERS (ONTARIO) LIMITED**

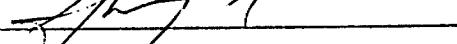
33 CHANCEY AVENUE, TORONTO, ONTARIO M8Z 2Z2 • TELEPHONE (416) 239-3527  
FAX (416) 239-4012

**Certificate of Analysis**

JUL 23 1988

Certificate No. DMBW-02/02Date: July 18, 1988Received 94 Samples of RockSubmitted by Derry, Michener, Booth & Wahl Att'n: Mr. James Lawton  
c.c. Mr. P. Hartwick

Sample No.	Au ppb	Sample No.	Au ppb
4905	34	4922	39
4906	48	4923	48
4907	33	4924	54
4908	22	4925	45
4909	21	4926	53
4910	33	4927	59
4911	39	4928	42
4912	26	4929	66
4913	45	4930	48
4914	64	4931	56
4915	45	4932	60
4916	48	4933	45
4917	63	4934	40
4918	60	4935	63
4919	58	4936	46
4920	40	4937	56
4921	26	PH-EBY-1	61

  
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## ASSAYERS (ONTARIO) LIMITED

33 CHAUNCEY AVENUE, TORONTO, ONTARIO M8Z 2Z2 • TELEPHONE (416) 239-3527  
FAX (416) 239-4012

JUL 25 1989

## Certificate of Analysis

Certificate No. DMBW-02 /03Date: July 20, 1988Received                   12

Samples of

ROCK

Submitted by Derry, Michener, Booth & Wahl Att'n: James Lawton

Sample No.	Pt ppb	Pd ppb
4779	<50	<15
4780	250	<15
4783	<50	<15
4787	145	<15
4796	<50	<15
4797	<50	<15
4839	<50	<15
4912	<50	<15
4918	<50	<15
4922	235	<15
4928	387	<15
4929	390	<15

ASSAYERS (ONTARIO) LIMITED

Per \_\_\_\_\_

J. van Engelen Mgr.

**ASSAYERS (ONTARIO) LIMITED**  
**CERTIFICATE OF ANALYSIS**

Certificate No. DMBW-01/03/7890

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth & Wahl

Att'n: Mr. James Lawton  
C.C.: Mr. P. Hartwick

#### RESULTS IN PPM

4701                  4702                  4703                  4704                  4705                  4706

Ag	.2	.6	.6	.5	.2	.1
As	<10	<10	<10	<10	<10	<10
B%	.4	.1	.3	.05	.4	.4
Ba	440	80	8600	1880	270	320
Be	<10	<10	<10	<10	<10	<10
Bi	<10	18	20	<10	<10	<10
Cd	<10	<10	<10	<10	13	13
Ce	<10	<10	<10	<10	<10	15
Co	48	64	53	81	75	92
Cr	190	280	120	340	340	130
Cu	76	95	94	89	159	177
La	<10	56	49	48	<10	11
Mo	<10	<10	<10	<10	10	<10
Nb	<10	<10	<10	<10	<10	<10
Ni	104	21	104	272	130	94
Pb	194	177	195	178	240	200
S%	.4	.4	.3	.4	.4	.4
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	182	1140	1330	910	250	150
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10	<10
V	202	166	191	159	210	300
W	<10	<10	35	<10	<10	<10
Y	14	22	19	18	12	30
Zn	150	194	194	164	230	170
Zr	150	180	230	150	60	180

## RESULTS IN 8

$\text{Al}_2\text{O}_3$	12.5	9.1	12.2	8.9	13.2	11.2
$\text{Fe}_2\text{O}_3$	9.4	8.8	5.7	8.7	9.6	13.5
$\text{CaO}$	6.5	8.5	7.2	8.5	10.0	8.4
$\text{MgO}$	4.9	8.2	2.7	8.4	5.8	5.1
$\text{Na}_2\text{O}$	4.9	3.8	4.6	2.5	3.8	3.6
$\text{K}_2\text{O}$	1.3	3.2	6.8	5.0	1.1	1.3
$\text{TiO}_2$	.8	.7	.6	.7	.5	1.4
$\text{MnO}$	.1	.1	.1	.1	.1	.1
$\text{P}_2\text{O}_5$	.4	.7	.6	.7	.5	.5
L.O.I.	2.19	.80	1.49	1.00	.60	.70

ASSAYERS (ONTARIO) LIMITED

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**John van Engelen Mgr.**

**ASSAYERS (ONTARIO) LIMITED**  
**CERTIFICATE OF ANALYSIS**

Certificate No. DMBW-01/04

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: Mr. James Lawton  
c.c. Mr. P. Hartwick

## RESULTS IN PPM

	4707	4708	4709	4710	4711	4712
Ag	<.1	<.1	<.1	<.1	.1	<.1
As	<10	<10	<10	<10	<10	<10
B	.4	.3	.4	.1	.2	.1
Ba	130	130	120	80	180	86
Be	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10
Cd	13	11	<10	13	<10	<10
Ce	<10	<10	<10	<10	<10	<10
Co	80	70	30	104	74	76
Cr	270	340	330	810	540	440
Cu	160	200	76	73	73	100
La	<10	<10	<10	<10	<10	<10
Mo	<10	<10	<10	<10	15	<10
Nb	<10	<10	<10	<10	<10	<10
Ni	100	99	110	220	170	140
Pb	180	190	180	190	170	180
S	.5	.5	.4	.6	.4	.4
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	190	120	240	110	210	200
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	13	<10	<10
U	<10	<10	<10	<10	<10	<10
V	290	210	180	200	190	220
W	<10	<10	<10	<10	<10	<10
Y	18	12	11	.6	16	21
Zn	160	120	110	150	150	170
Zr	83	62	69	62	61	64

## RESULTS IN %

	4707	4708	4709	4710	4711	4712
Al <sub>2</sub> O <sub>3</sub>	11.0	13.8	14.3	10.0	11.0	11.2
Fe <sub>2</sub> O <sub>3</sub>	11.9	9.1	7.9	12.0	9.3	12.1
CaO	8.9	10.6	11.2	9.7	9.6	9.3
MgO	6.1	5.9	4.8	11.0	7.8	7.3
Na <sub>2</sub> O	3.6	3.8	4.4	3.0	3.5	4.3
K <sub>2</sub> O	.7	.8	.6	.7	.7	.2
TiO <sub>2</sub>	.9	.5	.5	.7	.8	.9
MnO	.1	.1	.1	.1		.1
P <sub>2</sub> O <sub>5</sub>	.4	.5	.4	.6	.4	.4
L.O.I.	1.10	1.09	.89	1.59	1.19	.70

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

**ASSAYERS (ONTARIO) LIMITED**  
**CERTIFICATE OF ANALYSIS**

Certificate No. DMBW-01/05

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: Mr. James Lawton  
c.c. Mr. P. Hartwick

## RESULTS IN PPM

	4713	4714	4715	4716	4717	4718
Ag	<.1	.1	.2	<.1	.1	<.1
As	<10	<10	<10	<10	<10	<10
B%	.1	.06	.06	.1	.1	.1
Ba	89	75	290	450	1380	690
Be	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10
Cd	15	<10	10	<10	<10	11
Ce	<10	<10	<10	<10	<10	<10
Co	90	44	42	82	40	96
Cr	360	190	91	93	150	120
Cu	260	281	200	130	44	130
La	<10	<10	<10	41	10	10
Mo	<10	<10	10	<10	<10	10
Nb	<10	<10	<10	<10	<10	<10
Ni	120	78	40	220	65	89
Pb	180	350	810	150	120	170
S%	.6	.8	1.0	.6	.3	.5
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	10
Sr	120	72	77	480	730	250
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	11	<10	12
U	<10	<10	<10	25	<10	27
V	220	81	80	180	100	300
W	<10	<10	<10	<10	<10	<10
Y	14	<10	<10	10	<10	30
Zn	210	250	880	110	60	160
Zr	80	230	150	85	100	200

## RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	9.9	10.2	9.0	6.1	10.2	11.8
Fe <sub>2</sub> O <sub>3</sub>	11.4	6.7	10.7	11.2	5.8	14.4
CaO	10.4	1.5	2.3	10.3	4.4	6.7
MgO	4.6	1.5	1.3	4.7	2.3	4.3
Na <sub>2</sub> O	2.0	8.9	1.4	1.4	5.7	2.8
K <sub>2</sub> O	.3	.04	2.7	2.3	3.3	2.9
TiO <sub>2</sub>	.8	.4	.3	.4	.5	1.6
MnO	.1	.06	.07	.2	.06	.1
P <sub>2</sub> O <sub>5</sub>	.6	.3	.5	.8	.5	.6
L.O.I.	.40	.11	.50	2.29	.05	1.10

ASSAYERS (ONTARIO) LIMITED

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John van Engelen Mgr.

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ASSAYERS (ONTARIO) LIMITED  
CERTIFICATE OF ANALYSIS

Certificate No. DMBW-01/06

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth & Wahl

Att'n: Mr. James Lawton  
Mr. P. Hartwick

RESULTS IN PPM

	4719	4720	4721	4722	4723	4724
Ag	.2	<.1	.4	<.1	.2	<.1
As	<10	<10	<10	<10	<10	<10
B %	.05	.1	.1	.3	.5	.1
Ba	1440	48	300	310	460	2180
Be	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	15	<10	10
Cd	<10	20	<10	10	<10	<10
Ce	<10	<10	<10	<10	<10	<10
Co	28	36	67	94	56	46
Cr	140	75	110	1020	420	84
Cu	41	83	160	35	60	48
La	<10	<10	<10	<10	<10	<10
Mo	<10	10	<10	29	16	22
Nb	<10	<10	<10	<10	<10	<10
Ni	63	54	81	430	130	26
Pb	110	100	130	140	140	120
S %	.3	.5	.5	.6	.7	.7
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	770	34	250	300	230	850
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	20	<10	<10
U	<10	<10	<10	<10	<10	<10
V	108	23	290	160	150	72
W	<10	<10	<10	<10	<10	<10
Y	<10	<10	29	10	<10	<10
Zn	57	100	160	150	85	59
Zr	100	18	180	87	160	260

RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	10.0	.9	11.1	7.1	11.1	8.8
Fe <sub>2</sub> O <sub>3</sub>	5.9	26.0	14.1	10.3	7.3	4.2
CaO	4.5	2.0	8.2	11.0	2.5	1.9
MgO	2.4	2.0	4.5	13.0	2.4	1.3
Na <sub>2</sub> O	5.9	.2	3.1	2.3	4.0	6.8
K <sub>2</sub> O	3.4	.03	.8	.7	3.3	.4
TiO <sub>2</sub>	.5	.09	1.5	.6	.8	.4
MnO	.07	.2	.1	.1	.1	.06
P <sub>2</sub> O <sub>5</sub>	.4	.6	.5	.7	.6	.8
L.O.I.	4.31	.80	2.99	.90	1.99	1.18

ASSAYERS (ONTARIO) LIMITED

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John van Engelen Mgr.

## ASSAYERS (ONTARIO) LIMITED

## CERTIFICATE OF ANALYSIS

Certificate No. DMBW-01/07

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: Mr. James Lawton  
Mr. P. Hartwick

## RESULTS IN PPM

	4725	4726	4727	4728	4729	4730
Ag	<.1	.1	<.1	<.1	<.1	.5
As	<10	<10	<10	<10	<10	<10
B%	.6	.8	.1	1.4	.2	.1
Ba	230	160	660	1060	230	170
Be	<10	<10	<10	<10	<10	<10
Bi	<10	<10	20	<10	<10	<10
Cd	<10	<10	<10	12	16	12
Ce	<10	<10	<10	<10	<10	<10
Co	110	65	71	51	85	66
Cr	1660	370	160	110	480	370
Cu	41	130	160	39	69	50
La	<10	<10	<10	<10	<10	<10
Mo	<10	<10	<10	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10
Ni	1650	150	100	57	100	81
Pb	91	120	120	150	120	97
S%	.8	.7	.7	.5	.7	.6
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	78	140	240	470	260	200
Te	<10	<10	<10	<10	<10	<10
Th	12	<10	<10	<10	13	<10
U	<10	<10	20	26	<10	<10
V	100	200	260	94	160	120
W	<10	<10	10	<10	<10	<10
Y	<10	<10	23	<10	11	<10
Zn	98	75	120	67	94	73
Zr	63	95	185	190	55	41

## RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	4.4	8.6	9.9	11.4	8.7	6.7
Fe <sub>2</sub> O <sub>3</sub>	9.8	11.1	15.5	5.7	10.1	7.8
CaO	7.9	6.9	7.1	2.5	7.9	6.1
MgO	10.3	4.2	4.6	1.5	4.4	3.4
Na <sub>2</sub> O	3.1	3.8	3.3	9.1	3.3	2.5
K <sub>2</sub> O	1.0	.7	1.6	4.1	.7	.5
TiO <sub>2</sub>	.3	.9	1.6	.6	.9	.7
MnO	.2	.1	.1	.06	.1	.1
P <sub>2</sub> O <sub>5</sub>	.3	.4	.6	.6	.6	.4
L.O.I.	5.48	1.49	1.06	1.5	.59	2.31

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

**ASSAYERS (ONTARIO) LIMITED**  
**CERTIFICATE OF ANALYSIS**

Certificate No. DMBW-01/08

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: Mr. James Lawton  
c.c. Mr. P. Hartwick

## RESULTS IN PPM

	4731	4732	4733	4734	4735	4736
Ag	.1	<.1	<.1	<.1	<.1	.1
As	<10	<10	<10	<10	<10	<10
B%	.3	1.0	.2	.8	2.8	2.1
Ba	190	180	140	160	380	360
Be	<10	<10	<10	<10	<10	<10
Bi	<10	<10	13	<10	<10	<10
Cd	15	<10	16	<10	<10	14
Ce	<10	<10	<10	<10	<10	<10
Co	95	76	85	75	120	95
Cr	130	43	120	433	193	440
Cu	180	100	42	100	54	100
La	<10	<10	<10	<10	<10	<10
Mo	<10	<10	12	<10	<10	10
Nb	<10	<10	<10	<10	<10	<10
Ni	100	67	73	160	75	120
Pb	110	120	120	110	190	170
S%	.7	.8	.7	.7	.5	.6
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	110	85	172	120	69	99
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10	<10
V	225	280	240	180	94	200
W	<10	<10	<10	<10	13	<10
Y	14	12	14	<10	<10	<10
Zn	148	120	97	120	96	100
Zr	190	130	81	98	200	194

## RESULTS IN %

	4731	4732	4733	4734	4735	4736
Al <sub>2</sub> O <sub>3</sub>	7.1	8.4	8.2	7.5	7.6	9.6
Fe <sub>2</sub> O <sub>3</sub>	14.6	15.1	12.4	13.4	13.0	13.6
CaO	4.6	6.6	7.2	7.6	4.1	5.9
MgO	2.3	3.2	5.5	4.0	10.5	3.1
Na <sub>2</sub> O	3.1	5.7	3.3	3.3	6.8	8.7
K <sub>2</sub> O	1.0	.8	.8	.7	2.2	2.1
TiO <sub>2</sub>	1.6	1.5	1.2	1.0	.6	1.1
MnO	.1	.2	.1	.1	.1	.1
P <sub>2</sub> O <sub>5</sub>	.6	.4	.7	.5	.3	.5
L.O.I.	1.41	.70	1.79	.41	11.26	.89

ASSAYERS (ONTARIO) LIMITED

PER \_\_\_\_\_

John van Engelen Mgr.

B - 12  
 ASSAYERS (ONTARIO) LIMITED  
 CERTIFICATE OF ANALYSIS

Certificate No. DMBW-01/09

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth & Wahl

Att'n: Mr. James Lawton  
 c.c. Mr. P. Hartwick

RESULTS IN PPM

	4737	4738	4739	4740	4741	4742
Ag	<.1	<.1	<.1	<.1	.2	.3
As	<10	<10	<10	<10	<10	<10
B%	1.4	.6	.8	1.9	1.7	1.6
Ba	280	140	140	330	250	1910
Be	<10	<10	<10	<10	<10	<10
Bi	<10	<10	10	<10	<10	<10
Cd	<10	<10	15	10	<10	<10
Ce	<10	<10	<10	<10	<10	<10
Co	67	74	110	83	60	43
Cr	370	1190	550	506	212	100
Cu	84	75	89	127	84	100
La	<10	<10	<10	<10	<10	.24
Mo	<10	<10	10	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10
Ni	96	160	260	140	79	100
Pb	130	95	130	170	180	180
S%	.5	.4	.5	.5	.4	.3
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	120	110	160	93	85	620
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	11	<10	<10	<10
U	<10	<10	18	<10	<10	<10
V	200	120	140	200	180	98
W	<10	<10	<10	<10	<10	<10
Y	<10	<10	14	<10	<10	11
Zn	65	86	120	100	100	110
Zr	150	62	120	170	170	320

RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	9.5	6.5	7.1	10.1	7.8	8.9
Fe <sub>2</sub> O <sub>3</sub>	12.9	10.2	16.9	14.0	12.2	6.3
CaO	6.1	7.0	7.8	6.8	4.9	3.8
MgO	3.8	4.0	6.2	2.7	2.7	1.9
Na <sub>2</sub> O	5.3	2.8	3.3	8.2	7.0	7.7
K <sub>2</sub> O	1.7	.7	.6	1.8	1.9	5.7
TiO <sub>2</sub>	1.1	.6	1.4	1.1	.9	.6
MnO	.1	.1	.2	.2	.1	.1
P <sub>2</sub> O <sub>5</sub>	.3	.4	.5	.4	.4	.5
L.O.I.	1.11	1.29	.40	2.5	.40	3.79

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

B - 13  
 ASSAYERS (ONTARIO) LIMITED  
 CERTIFICATE OF ANALYSIS

Certificate No. DMBW-01/10

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth & Wahl

Att'n: Mr. James Lawton  
 c.c. Mr. P. Hartwick

RESULTS IN PPM

	4743	4744	4745	4746	4747	4748
Ag	.4	.1	.4	.1	.2	.3
As	<10	<10	<10	<10	<10	<10
B%	2.4	.8	.5	1.0	.3	.2
Ba	1930	580	1810	195	112	149
Be	<10	<10	<10	<10	<10	<10
Bi	<10	13	<10	<10	<10	<10
Cd	<10	<10	<10	13	<10	13
Ce	<10	<10	<10	<10	<10	<10
Co	41	51	16	76	62	83
Cr	285	245	127	426	427	721
Cu	107	42	71	105	71	120
La	14	<10	<10	<10	<10	<10
Mo	<10	<10	<10	14	<10	<10
Nb	<10	<10	<10	<10	<10	<10
Ni	257	170	127	147	137	225
Pb	219	151	117	158	185	155
S %	.4	.2	.2	.3	.5	.5
Sb	12	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	10	<10	10	<10	<10	<10
Sr	1220	226	337	85	77	112
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10	<10
V	153	131	105	168	184	189
W	15	<10	<10	<10	<10	<10
Y	11	<10	<10	<10	16	15
Zn	112	80	83	102	103	117
Zr	330	140	228	106	63	54

RESULTS IN %

	4743	4744	4745	4746	4747	4748
Al <sub>2</sub> O <sub>3</sub>	10.2	7.5	5.9	6.3	7.6	7.7
Fe <sub>2</sub> O <sub>3</sub>	8.1	7.9	5.9	13.1	13.1	12.4
CaO	6.3	4.9	1.8	6.6	9.6	9.4
MgO	3.2	3.4	1.0	3.0	4.7	3.9
Na <sub>2</sub> O	9.9	5.1	5.7	4.9	1.9	2.0
K <sub>2</sub> O	5.9	4.5	5.1	1.4	.7	.5
TiO <sub>2</sub>	.7	.6	.6	.9	.8	.7
MnO	.1	.1	.07	.1	.1	.1
P <sub>2</sub> O <sub>5</sub>	.4	.5	.3	.4	.4	.5
L.O.I.	2.01	1.69	2.48	.71	1.33	1.09

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

**ASSAYERS (ONTARIO) LIMITED**  
**CERTIFICATE OF ANALYSIS**

Certificate No. DMBW-01/11

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: Mr. James Lawton  
c.c. Mr. P. Hartwick

## RESULTS IN PPM

	4749	4750	4751	4752	4753	4754
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Ag	.2	<.1	.3	.4	.2	.4
As	<10	12	<10	13	10	<10
B%	.2	.6	.2	1.9	.2	.09
Ba	124	3630	71	318	98	380
Be	<10	<10	<10	<10	<10	<10
Bi	<10	15	<10	17	<10	<10
Cd	<10	13	<10	12	13	<10
Ce	<10	<10	<10	<10	<10	<10
Co	53	100	43	68	80	62
Cr	306	2040	315	376	621	85
Cu	90	105	56	117	113	160
La	<10	<10	<10	<10	<10	<10
Mo	<10	13	<10	18	10	<10
Nb	<10	<10	<10	<10	<10	<10
Ni	168	616	92	135	184	71
Pb	144	145	129	186	157	169
S%	.4	.7	.4	.6	.4	.6
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	14	<10	<10
Sr	120	221	78	105	111	221
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10	<10
V	213	162	180	143	182	267
W	<10	11	<10	15	12	13
Y	12	<10	14	11	14	33
Zn	89	210	188	162	225	293
Zr	60	237	47	188	55	136

## RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	8.4	6.5	6.9	8.6	7.7	10.4
Fe <sub>2</sub> O <sub>3</sub>	12.3	10.1	10.7	11.0	13.2	17.0
CaO	5.7	7.3	8.7	6.3	8.2	5.4
MgO	5.1	4.3	4.0	2.5	4.8	3.2
Na <sub>2</sub> O	2.0	4.2	1.3	6.6	2.4	3.6
K <sub>2</sub> O	.7	.5	.4	1.9	.5	1.0
TiO <sub>2</sub>	.5	.5	.7	.8	.7	1.5
MnO	.1	.2	.1	.1	.1	.1
P <sub>2</sub> O <sub>5</sub>	.2	.3	.3	.5	.4	.4

L.O.I.	2.28	2.29	.51	1.28	1.11	1.01
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ASSAYERS (ONTARIO) LIMITED

PER \_\_\_\_\_

John van Engelen Mgr.

B - 15  
ASSAYERS (ONTARIO) LIMITED  
CERTIFICATE OF ANALYSIS

Certificate No. DMBW-01/12

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth & Wahl

Att'n: Mr. James Hawton  
c.c. Mr. P. Hartwick

RESULTS IN PPM

	4755	4756	4757	4758	4759	4760
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Ag	.3	.4	.3	.5	.4	.6
As	<10	<10	<10	<10	<10	<10
B%	.2	.3	.1	.2	2.3	.2
Ba	85	128	371	103	338	73
Be	<10	<10	<10	<10	<10	<10
Bi	<10	11	<10	19	<10	<10
Cd	14	17	<10	13	14	18
Ce	<10	<10	<10	<10	<10	<10
Co	80	90	27	78	79	91
Cr	154	114	55	66	105	53
Cu	91	138	63	115	105	132
La	<10	<10	10	<10	<10	<10
Mo	<10	13	<10	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10
Ni	77	91	33	50	77	52
Pb	181	203	166	184	227	188
S%	.5	.6	.4	.3	.7	.7
Sb	<10	10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	13	<10	<10
Sr	140	109	177	197	106	179
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	14	<10	<10
V	328	366	73	212	243	400
W	<10	<10	<10	<10	<10	<10
Y	25	28	14	48	15	40
Zn	119	193	313	209	170	162
Zr	73	116	186	167	229	113

RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	11.1	12.0	11.3	10.7	10.9	10.7
Fe <sub>2</sub> O <sub>3</sub>	14.9	20.2	7.2	18.5	13.9	19.1
CaO	8.1	7.5	5.5	6.7	4.6	8.9
MgO	5.4	4.5	3.7	2.8	2.8	3.8
Na <sub>2</sub> O	3.8	4.3	3.8	7.7	7.7	2.3
K <sub>2</sub> O	.6	.7	.6	2.2	2.2	.4
TiO <sub>2</sub>	1.2	1.7	1.8	1.2	1.2	1.9
MnO	.1	.2	.2	.2	.2	.2
P <sub>2</sub> O <sub>5</sub>	.5	.5	.6	.5	.5	.6
L.O.I.	1.89	1.29	1.41	.90	8.54	.80

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

**ASSAYERS (ONTARIO) LIMITED**  
**CERTIFICATE OF ANALYSIS**

Certificate No. DMBW-01/13

Date: July 18, 1988

Samples of: Rock

Submitted by:Derry, Michener, Booth &amp; Wahl

Att'n: Mr. James Lawton  
c.c. Mr. P. Hartwick

## RESULTS IN PPM

	4761	4762	4763	4764	4765	4766
Ag	.3	.6	.1	<.1	.3	.5
As	<10	<10	15	14	<10	<10
B %	3.4	.5	2.1	3.0	3.9	1.7
Ba	524	105	644	494	319	277
Be	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10
Cd	13	<10	14	12	<10	<10
Ce	<10	<10	<10	<10	<10	<10
Co	75	50	75	83	59	70
Cr	360	96	400	145	88	109
Cu	109	135	74	145	115	111
La	<10	<10	<10	<10	<10	<10
Mo	<10	<10	11	15	<10	<10
Nb	<10	<10	<10	<10	<10	<10
Ni	109	75	128	98	68	90
Pb	271	336	223	260	255	169
S %	.6	.7	.5	1.0	.5	.5
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	164	92	161	159	133	98
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10	<10
V	190	124	197	218	241	240
W	<10	<10	<10	<10	<10	12
Y	12	12	17	14	13	11
Zn	91	150	103	160	144	185
Zr	313	96	195	251	512	165

## RESULTS IN %

	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	MgO	Na <sub>2</sub> O	K <sub>2</sub> O	TiO <sub>2</sub>	MnO	P <sub>2</sub> O <sub>5</sub>	L.O.I.
	11.9	10.6	6.7	3.7	10.5	3.2	.9	.1	.4	3.69
	12.4	13.3	5.5	4.6	4.4	.6	.6	.1	.3	7.85
										2.11
										2.43
										.89
										1.48

ASSAYERS (ONTARIO) LIMITED

PER \_\_\_\_\_

John van Engelen Mgr.

B - 17  
ASSAYERS (ONTARIO) LIMITED  
CERTIFICATE OF ANALYSIS

Certificate No. DMBW-01/14

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth & Wahl

Att'n: Mr. James Lawton  
c.c. Mr. P. Hartwick

RESULTS IN PPM

	4767	4768	4769	4770	4771	4772
Ag	.1	.2	.2	.3	.5	.3
As	<10	13	12	<10	<10	<10
B%	2.3	.9	1.2	2.4	.6	.4
Ba	380	163	227	367	435	277
Be	<10	120	<10	<10	<10	<10
Bi	<10	120	<10	<10	<10	<10
Cd	<10	22	10	13	10	11
Ce	<10	120	<10	<10	<10	<10
Co	71	81	79	90	80	84
Cr	124	731	432	80	140	191
Cu	134	111	65	63	88	81
La	<10	<10	<10	<10	<10	12
Mo	<10	<10	<10	16	<10	<10
Nb	<10	<10	<10	<10	<10	<10
Ni	83	195	131	65	83	83
Pb	220	190	163	248	168	168
S%	.6	.9	.6	.4	.6	.6
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	123	113	110	276	244	195
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	13	<10	<10
V	257	208	186	379	278	272
W	18	<10	<10	10	<10	11
Y	14	14	11	25	15	17
Zn	127	116	118	162	139	112
Zr	232	102	116	221	94	78

RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	10.9	8.5	7.0	11.7	8.3	8.7
Fe <sub>2</sub> O <sub>3</sub>	14.7	12.7	13.9	17.4	15.2	14.3
CaO	5.9	9.7	6.7	7.4	5.7	7.3
MgO	3.4	4.5	4.0	3.4	3.6	4.0
Na <sub>2</sub> O	8.6	3.7	3.5	6.7	3.9	4.5
K <sub>2</sub> O	2.6	1.2	1.5	2.4	1.6	.9
TiO <sub>2</sub>	1.1	.8	.9	1.7	1.2	1.1
MnO	.1	.2	.2	.1	.1	.1
P <sub>2</sub> O <sub>5</sub>	.4	.4	.4	.5	.5	.5
L.O.I.	1.03	1.81	2.50	2.78	1.98	1.31

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

B - 18  
ASSAYERS (ONTARIO) LIMITED  
CERTIFICATE OF ANALYSIS

Certificate No. DMBW-01/15

Date: July 18, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth & Wahl

Att'n: Mr. James Lawton  
c.c. Mr. P. Hattwick

RESULTS IN PPM

	4473	4774	4775	4776	4777
Ag	.2	.2	.3	.2	<.1
As	<10	<10	<10	<10	<10
B %	.7	.6	.2	.5	.9
Ba	212	163	91	115	204
Be	<10	<10	<10	<10	<10
Bi	<10	<10	11	<10	18
Cd	13	14	14	<10	16
Ce	<10	<10	<10	<10	<10
Co	65	77	107	55	83
Cr	356	133	40	53	137
Cu	66	88	111	87	109
La	<10	<10	<10	<10	<10
Mo	<10	11	<10	<10	23
Nb	<10	<10	<10	<10	<10
Ni	121	76	64	42	78
Pb	147	149	144	142	169
S %	.6	.5	.5	.4	.5
Sb	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10
Sr	160	204	95	112	169
Te	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10
U	<10	<10	20	<10	<10
V	141	206	617	151	255
W	<10	<10	<10	<10	15
Y	<10	10	14	24	13
Zn	84	102	165	135	216
Zr	93	110	76	148	107

RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	7.7	7.3	6.4	6.8	8.3
Fe <sub>2</sub> O <sub>3</sub>	10.1	12.6	19.2	16.8	14.3
CaO	5.1	4.5	7.3	4.8	5.7
MgO	3.5	2.5	3.6	1.9	2.9
Na <sub>2</sub> O	4.9	4.6	2.2	3.7	5.4
K <sub>2</sub> O	1.5	1.1	.6	.9	1.4
TiO <sub>2</sub>	.5	1.1	2.2	1.6	1.1
MnO	.1	.1	.2	.1	.1
P <sub>2</sub> O <sub>5</sub>	.5	.6	.5	.4	.5
L.O.I.	1.53	1.20	1.19	1.50	.89

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

B - 19  
ASSAYERS (ONTARIO) LIMITED

CERTIFICATE OF ANALYSIS

1988

Certificate No. DMBW-02 /04

Date: July 19, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth & Wahl

Att'n: James Lawton

	4778	4779	4780	4781	4782	4783	4784
Ag	.2	<.1	<10	.3	.4	.2	.1
As %	<10	16	16	<10	15	<10	<10
B	.2	.2	.2	.2	.1	.1	.3
Ba	199	58	134	94	136	66	115
Be	<10	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10	<10
Cd	<10	17	16	11	16	<10	17
Ce	<10	<10	<10	<10	<10	<10	<10
Co	35	85	74	67	57	57	78
Cr	43	126	315	179	86	170	261
Cu	56	114	74	110	95	51	54
La	<10	<10	<10	<10	<10	<10	<10
Mo	<10	<10	<10	<10	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10	<10
Ni	33	70	113	90	48	67	155
Pb	357	192	144	123	99	22	55
S %	.3	.3	.3	.3	.2	.3	.2
Sb	<10	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10	<10
Sr	167	103	148	129	128	156	112
Te	<10	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10	<10	<10
V	138	245	163	205	132	207	136
W	<10	<10	<10	<10	12	<10	<10
Y	<10	16	<10	<10	<10	11	<10
Zn	102	144	103	115	99	109	114
Zr	213	81	78	91	216	59	92

RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	9.0	7.9	8.5	6.7	8.9	6.1	5.9
Fe <sub>2</sub> O <sub>3</sub>	8.5	14.1	10.9	13.1	10.2	11.8	10.7
CaO	3.0	6.5	5.9	5.0	3.4	6.5	3.8
MgO	1.2	3.0	4.2	2.9	1.3	2.8	3.0
Na <sub>2</sub> O	5.4	3.4	2.7	3.5	5.3	2.2	4.0
K <sub>2</sub> O	.7	.4	.7	.4	.6	.3	.7
TiO <sub>2</sub>	1.0	1.2	.6	1.0	.9	1.0	.7
MnO	.08	.1	.1	.1	.1	.1	.1
P <sub>2</sub> O <sub>5</sub>	.4	.4	.4	.3	.5	.2	.4
L.O.I.	.51	.72	1.59	.70	.64	.69	2.39

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

B - 20  
 ASSAYERS (ONTARIO) LIMITED  
 CERTIFICATE OF ANALYSIS

Certificate No. DMBW-02 /05

Date: July 19, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth & Wahl

Att'n: James Lawton

	RESULTS IN PPM					
	4785	4786	4787	4788	4789	4790
Ag	<.1	.1	<.1	<.1	<.1	<.1
As	15	13	<10	<10	11	10
B %	.1	.2	.4	.2	.3	1.0
Ba	68	80	101	90	143	1047
Be	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10
Cd	15	13	10	10	13	15
Ce	<10	<10	<10	<10	<10	<10
Co	56	50	75	71	59	43
Cr	75	52	154	128	83	80
Cu	63	63	96	91	65	89
La	<10	<10	<10	<10	<10	<10
Mo	<10	<10	<10	<10	<10	11
Nb	<10	<10	<10	<10	<10	<10
Ni	49	33	105	84	87	48
Pb	43	25	38	40	39	143
S %	.2	.3	.2	.3	.2	.8
Sb	<10	<10	<10	<10	<10	12
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	86	315	171	172	183	493
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10	<10
V	96	107	279	258	123	88
W	<10	<10	<10	<10	12	19
Y	<10	<10	11	14	<10	<10
Zn	98	81	131	132	95	80
Zr	118	159	97	113	130	234

RESULTS IN %

	4785	4786	4787	4788	4789	4790
Al <sub>2</sub> O <sub>3</sub>	6.9	6.8	6.8	7.7	8.6	15.3
Fe <sub>2</sub> O <sub>3</sub>	10.2	7.3	15.0	14.1	8.6	7.2
CaO	5.5	3.1	7.1	6.9	3.5	2.6
MgO	1.5	1.0	3.2	3.0	2.2	1.5
Na <sub>2</sub> O	1.5	4.4	3.8	3.6	5.0	8.2
K <sub>2</sub> O	.4	.4	.6	.4	1.1	.38
TiO <sub>2</sub>	.9	.7	1.2	1.3	.7	.4
MnO	.1	.08	.2	.1	.09	.07
P <sub>2</sub> O <sub>5</sub>	.5	.5	.2	.3	.4	.4
L.O.I.	.80	.79	.91	.80	1.41	1.69

ASSAYERS (ONTARIO) LIMITED

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John van Engelen Mgr.

B - 21  
ASSAYERS (ONTARIO) LIMITED  
CERTIFICATE OF ANALYSIS

Certificate No. DMBW-02 /06

Date: July 19, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth & Wahl

Att'n: James Lawton

	RESULTS IN PPM					
	4791	4792	4793	4794	4795	4796
Ag	.4	.5	.3	1.8	.5	1.6
As	11	<10	11	<10	12	16
B %	.7	.4	.4	.4	.4	.4
Ba	158	151	499	273	2000	502
Be	<10	<10	<10	<10	<10	<10
Bi	<10	<10	10	<10	<10	10
Cd	24	11	16	10	15	17
Ce	<10	<10	<10	<10	<10	<10
Co	81	47	54	70	45	84
Cr	121	56	71	129	51	513
Cu	161	55	77	184	99	25
La	<10	<10	11	14	<10	10
Mo	<10	<10	<10	<10	10	<10
Nb	10	<10	<10	<10	<10	<10
Ni	70	47	36	96	31	339
Pb	203	168	197	116	108	91
S %	.8	8.6	1.1	.5	.6	.4
Sb	10	<10	<10	10	11	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	170	151	248	218	1012	153
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10
U	17	<10	<10	18	<10	<10
V	317	174	221	297	140	176
W	16	<10	<10	<10	<10	<10
Y	23	21	18	30	25	18
Zn	164	165	146	160	155	146
Zr	182	133	201	251	412	129

RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	10.8	8.3	10.4	12.3	14.9	7.5
Fe <sub>2</sub> O <sub>3</sub>	22.3	17.1	11.9	15.0	7.5	9.8
CaO	9.4	5.2	3.8	9.1	5.2	8.1
MgO	4.7	2.8	2.8	4.9	2.1	13.4
Na <sub>2</sub> O	4.1	3.9	4.4	3.3	7.8	3.4
K <sub>2</sub> O	.9	.6	1.6	1.1	4.7	2.4
TiO <sub>2</sub>	1.2	.9	1.2	1.5	.7	.5
MnO	.6	.3	.3	.1	.1	.1
P <sub>2</sub> O <sub>5</sub>	.5	.3	.5	.4	.5	.5
L.O.I.	.61	5.97	2.39	1.19	2.47	2.71

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

B - 22  
ASSAYERS (ONTARIO) LIMITED  
CERTIFICATE OF ANALYSIS

Certificate No. DMBW-02 /07

Date: July 19, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth & Wahl

Att'n: James Lawton

	RESULTS IN PPM					
	4797	4798	4799	4800	4819	4820
Ag	.6	.1	.4	<.1	<.1	<.1
As	<10	<10	<10	<10	<10	<10
B %	1.0	.7	.3	.3	1.5	1.7
Ba	1656	747	5330	2190	446	349
Be	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10
Cd	<10	15	15	<10	17	<10
Ce	<10	<10	<10	17	<10	<10
Co	41	69	55	18	74	64
Cr	239	260	96	50	301	435
Cu	24	59	140	75	120	135
La	15	10	15	10	<10	<10
Mo	<10	<10	<10	<10	11	<10
Nb	<10	<10	<10	<10	<10	<10
Ni	157	151	45	20	108	142
Pb	72	85	76	61	79	84
S %	.3	1.1	.3	.2	.3	.3
Sb	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10
Sr	834	582	2275	1150	199	127
Te	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	17	<10
U	<10	<10	<10	<10	16	18
V	150	154	154	95	174	192
W	13	<10	<10	<10	<10	<10
Y	14	13	23	22	<10	12
Zn	66	114	146	86	95	107
Zr	212	172	201	315	191	205

RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	11.8	11.3	12.3	13.4	8.2	9.6
Fe <sub>2</sub> O <sub>3</sub>	8.3	9.7	7.6	4.6	10.4	14.3
CaO	6.6	8.6	5.7	2.7	4.8	7.6
MgO	5.0	3.4	3.9	1.3	3.2	3.6
Na <sub>2</sub> O	7.3	5.9	4.9	7.3	5.6	5.5
K <sub>2</sub> O	3.7	2.1	7.2	6.0	2.3	1.9
TiO <sub>2</sub>	.7	.7	.7	.5	.7	.9
MnO	.1	.2	.1	.07	.1	.2
P <sub>2</sub> O <sub>5</sub>	.6	.5	1.1	.4	.5	.3
L.O.I.	2.19	1.69	1.11	1.02	1.29	.60

ASSAYERS (ONTARIO) LIMITED

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John van Engelen Mgr.

B - 23  
ASSAYERS (ONTARIO) LIMITED

CERTIFICATE OF ANALYSIS

Certificate No. DMBW-02/08

Date: July 19, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth & Wahl

Att'n: James Lawton

RESULTS IN PPM

	4821	4822	4823	4824	4825	4826	4827
Ag	.2	<.1	<.1	.2	.2	.3	.1
As	<10	14	15	17	18	<10	<10
B %	2.5	1.5	1.0	1.8	1.7	1.2	.7
Ba	2750	330	150	357	189	265	337
Be	<10	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10	<10
Cd	<10	12	15	15	19	<10	12
Ce	<10	<10	<10	<10	<10	<10	<10
Co	36	46	98	64	99	33	31
Cr	140	62	1247	428	96	115	43
Cu	101	51	41	52	295	64	31
La	23	<10	<10	<10	<10	<10	<10
Mo	<10	<10	12	<10	<10	<10	17
Nb	<10	<10	<10	<10	<10	<10	<10
Ni	106	51	445	169	75	43	15
Pb	116	34	37	92	103	48	61
S %	.3	.5	.2	.4	.8	4.6	.4
Sb	<10	<10	<10	<10	10	<10	10
Se	<10	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10	<10
Sr	711	73	29	84	197	271	235
Te	<10	<10	<10	<10	<10	<10	<10
Th	<10	<10	17	<10	<10	<10	<10
U	<10	<10	<10	<10	16	<10	<10
V	123	51	96	104	288	116	63
W	<10	<10	<10	<10	<10	<10	<10
Y	11	<10	<10	<10	18	13	<10
Zn	110	53	86	90	192	184	75
Zr	449	185	122	317	399	200	328

RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	12.1	5.5	6.1	11.0	10.9	7.7	12.7
Fe <sub>2</sub> O <sub>3</sub>	7.2	4.0	8.8	8.5	15.3	13.7	5.7
CaO	4.1	1.2	3.9	2.2	2.9	4.1	2.5
MgO	2.2	2.1	12.3	5.2	3.6	3.1	1.7
Na <sub>2</sub> O	10.7	4.6	2.8	7.2	6.4	4.6	4.8
K <sub>2</sub> O	6.9	1.7	.9	2.6	1.9	1.2	3.1
TiO <sub>2</sub>	.6	.1	.3	.2	1.7	.8	.5
MnO	.1	.03	.1	.08	.17	.6	.06
P <sub>2</sub> O <sub>5</sub>	.5	.3	.3	.5	.5	.3	.5
L.O.I.	2.09	1.19	5.47	2.69	3.48	4.1	.89

ASSAYERS (ONTARIO) LIMITED

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John van Engelen Mgr.

## ASSAYERS (ONTARIO) LIMITED

## CERTIFICATE OF ANALYSIS

Certificate No. DMBW-02 /09

Date: July 19, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: James Lawton

## RESULTS IN PPM

	4828	4829	4830	4831	4832	4833	4834	4835
Ag	<.1	.4	<.1	.2	.1	<.1	<.1	.5
As	<10	<10	11	<10	12	<10	<10	<10
B %	1.1	.2	.5	.8	.1	.3	.3	.3
Ba	240	395	94	262	778	446	364	578
Be	<10	<10	<10	<10	<10	<10	<10	<10
Bi	<10	<10	10	<10	<10	<10	<10	<10
Cd	11	13	30	15	15	<10	<10	10
Ce	<10	<10	<10	<10	<10	<10	<10	<10
Co	43	36	40	45	67	19	86	25
Cr	45	52	34	208	282	156	79	46
Cu	45	51	19	46	62	77	188	30
La	<10	<10	<10	<10	15	<10	<10	<10
Mo	<10	<10	<10	<10	14	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10	<10	<10
Ni	41	33	66	81	196	51	81	14
Pb	57	44	38	55	45	11	44	16
S %	.4	1.6	.3	.5	.7	.5	.4	.5
Sb	<10	<10	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	10	<10	<10	<10
Sr	156	181	67	352	481	209	239	384
Te	<10	<10	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10	<10	<10
U	11	<10	11	<10	10	<10	<10	<10
V	212	87	13	104	155	85	310	24
W	<10	<10	<10	<10	<10	<10	<10	<10
Y	12	<10	<10	<10	13	<10	18	<10
Zn	97	154	71	66	139	44	79	42
Zr	210	123	62	192	119	164	143	95

## RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	8.0	10.4	1.5	9.8	10.1	11.1	11.5	10.3
Fe <sub>2</sub> O <sub>3</sub>	18.8	9.6	34.3	10.2	9.6	4.8	13.0	2.7
CaO	6.1	3.3	3.3	9.0	14.2	6.0	7.9	9.9
MgO	2.4	1.5	4.0	1.4	3.1	.7	3.0	.6
Na <sub>2</sub> O	4.7	4.5	1.4	3.5	3.2	5.6	4.6	6.4
K <sub>2</sub> O	1.3	1.8	.4	1.4	1.7	2.4	.7	3.0
TiO <sub>2</sub>	1.0	.4	.03	.6	.7	.5	1.6	.1
MnO	.6	.2	.2	.2	.3	.1	.2	.05
P <sub>2</sub> O <sub>5</sub>	.3	.3	.4	.6	.6	.4	.4	.4
L.O.I.	.50	2.51	1.09	.70	3.81	2.38	.99	7.39

ASSAYERS (ONTARIO) LIMITED

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John van Engelen Mgr.

B - 25  
ASSAYERS (ONTARIO) LIMITED

CERTIFICATE OF ANALYSIS

Certificate No. DMBW-02 /10

Date: July 19, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth & Wahl

Att'n: James Lawton

RESULTS IN PPM

	4836	4837	4838	4839	4840	4841	4842	4843
Ag	<.1	.1	.2	<.1	<.1	<.1	<.1	.8
As	<10	<10	<10	11	<10	<10	<10	16
B %	.4	.2	.4	.3	.08	.03	1.2	.9
Ba	2560	104	339	317	332	29	443	295
Be	<10	<10	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	21	18	12	21	<10	<10	<10	16
Ce	<10	<10	<10	<10	<10	<10	<10	<10
Co	94	88	46	63	28	<10	13	78
Cr	74	150	208	197	48	<10	58	261
Cu	59	94	143	141	31	10	56	106
La	<10	<10	<10	<10	<10	<10	<10	<10
Mo	<10	<10	<10	19	<10	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10	<10	<10
Ni	64	83	129	121	13	<10	31	86
Pb	104	68	59	69	31	<10	43	44
S %	.5	.5	2.7	2.6	.4	.4	1.7	.4
Sb	10	<10	10	10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10	<10	<10
Sr	475	151	389	364	390	31	162	140
Te	<10	<10	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10	<10	<10
U	10	<10	<10	<10	<10	<10	<10	<10
V	329	297	109	109	37	<10	49	194
W	<10	<10	<10	13	<10	<10	<10	<10
Y	33	20	10	10	<10	<10	<10	<10
Zn	217	146	131	129	59	28	106	113
Zr	320	93	168	151	77	<10	224	124

RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	11.0	11.5	10.7	10.3	12.2	.4	10.8	8.5
Fe <sub>2</sub> O <sub>3</sub>	17.7	13.9	21.2	19.9	2.8	8.3	4.1	11.0
CaO	11.5	8.0	5.6	5.4	1.6	1.5	.7	4.8
MgO	3.1	5.8	3.2	3.3	.8	.8	1.0	3.6
Na <sub>2</sub> O	3.9	4.2	4.6	4.3	6.0	.2	7.8	4.1
K <sub>2</sub> O	.3	.5	1.3	1.3	2.2	.01	2.5	1.4
TiO <sub>2</sub>	1.7	1.1	.4	.4	.1	.01	.2	.8
MnO	.2	.1	.2	.2	.03	.06	.04	.1
P <sub>2</sub> O <sub>5</sub>	.6	.5	.5	.6	.4	.2	.5	.5
L.O.I.	.59	.90	4.00	2.59	1.19	1.00	2.01	3.48

ASSAYERS (ONTARIO) LIMITED

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John van Engelen Mgr.

## ASSAYERS (ONTARIO) LIMITED

## CERTIFICATE OF ANALYSIS

Certificate No. DMBW-02/11

Date: July 20, 1988

Samples of: Rock

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: James Lawton

## RESULTS IN PPM

	4844	4845	4846	4847	4848	4849	4850
Ag	.6	.4	.9	.8	.8	1.2	.9
As	12	11	<10	13	<10	<10	<10
B %	1.6	1.5	1.6	2.8	1.8	.7	2.0
Ba	257	564	435	486	309	138	234
Be	<10	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10	<10
Cd	17	11	15	18	17	13	<10
Ce	<10	<10	<10	<10	<10	<10	<10
Co	88	29	93	92	86	120	57
Cr	122	31	91	105	352	2130	367
Cu	139	24	128	308	136	50	115
La	<10	<10	<10	<10	<10	<10	<10
Mo	<10	<10	<10	11	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10	<10
Ni	76	10	60	59	147	697	149
Pb	70	66	88	165	125	37	77
S %	.7	.4	.6	.7	.5	.4	.5
Sb	<10	<10	<10	12	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10	<10
Sr	163	348	166	194	84	25	108
Te	<10	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	21	<10
U	<10	<10	<10	<10	<10	<10	<10
V	274	46	344	325	218	123	185
W	<10	<10	<10	<10	<10	<10	<10
Y	11	<10	12	23	<10	<10	<10
Zn	137	53	117	171	139	150	104
Zr	208	673	279	379	199	118	349

## RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	10.2	11.5	12.4	15.2	11.5	5.9	11.2
Fe <sub>2</sub> O <sub>3</sub>	12.1	2.5	10.2	14.7	11.3	12.4	9.0
CaO	6.2	.7	2.8	5.0	4.7	3.5	9.1
MgO	2.5	.2	2.3	4.8	3.8	17.1	3.4
Na <sub>2</sub> O	6.4	9.4	9.0	9.7	5.8	1.9	7.5
K <sub>2</sub> O	1.6	3.9	2.3	2.9	2.7	.5	2.0
TiO <sub>2</sub>	1.1	.1	1.0	1.4	.8	.4	.7
MnO	.1	.01	.1	.1	.1	.1	.1
P <sub>2</sub> O <sub>5</sub>	.6	.5	.6	.7	.6	.5	.4
L.O.I.	7.41	1.29	4.37	3.87	8.26	6.90	8.87

ASSAYERS (ONTARIO) LIMITED

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John van Engelen Mgr.

**ASSAYERS (ONTARIO) LIMITED**  
**CERTIFICATE OF ANALYSIS**

Certificate No. DMBW-02/12

Date: July 20, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: James Lawton

	RESULTS IN PPM							
	4851	4901	4902	4903	4904	4905	4906	4907
Ag	1.0	.6	.7	.5	.7	.4	.6	<.1
As	18	17	17	<10	<10	<10	<10	<10
B %	2.4	1.2	1.1	1.0	.2	.6	.1	.5
Ba	385	2338	426	1205	1171	456	1176	4680
Be	<10	<10	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	16	11	19	<10	<10	10	11	<10
Ce	<10	<10	<10	<10	<10	<10	<10	<10
Co	81	39	86	26	23	30	30	22
Cr	335	61	124	47	36	37	40	61
Cu	57	55	72	56	26	18	76	89
La	<10	89	<10	11	<10	<10	11	21
Mo	20	14	16	<10	<10	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10	<10	<10
Ni	90	23	75	16	12	11	13	23
Pb	114	133	80	85	30	24	18	10
S %	.5	.3	.5	.6	.4	.4	.3	.3
Sb	10	<10	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10	<10	<10
Sr	138	1338	159	531	611	318	464	1520
Te	<10	<10	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10	<10	<10	<10
V	202	80	26	66	44	45	48	89
W	<10	<10	<10	<10	<10	<10	<10	<10
Y	12	<10	15	<10	<10	<10	<10	<10
Zn	120	82	195	64	79	53	54	85
Zr	284	417	181	199	344	224	160	178

RESULTS IN %

$\text{Al}_2\text{O}_3$	12.7	12.4	9.7	11.9	9.1	9.6	9.4	6.9
$\text{Fe}_2\text{O}_3$	10.6	4.6	14.8	3.5	2.6	2.6	2.7	4.4
CaO	5.2	2.2	5.5	.8	.5	.5	.6	2.7
MgO	4.1	1.0	3.1	.6	.4	.3	.3	1.1
$\text{Na}_2\text{O}$	8.4	8.4	5.3	8.5	6.7	9.8	7.2	5.2
$\text{K}_2\text{O}$	2.4	6.9	1.2	6.9	5.1	2.6	5.3	6.6
$\text{TiO}_2$	.9	.3	1.4	.3	.2	.2	.2	.4
MnO	.1	.06	.1	.04	.02	.02	.04	.09
$\text{P}_2\text{O}_5$	.6	.7	.5	.5	.4	.4	.4	.5
L.O.I.	7.29	.50	1.98	.60	.79	.79	.41	.99

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

## ASSAYERS (ONTARIO) LIMITED

## CERTIFICATE OF ANALYSIS

Certificate No. DMBW-02/13

Date: July 20, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: James Lawton

## RESULTS IN PPM

	4908	4909	4910	4911	4912	4913	4914	4915	4916
Ag	.5	.4	.2	.3	.6	.1	1.7	.6	.3
As	10	<10	<10	<10	<10	<10	<10	17	<10
B %	.2	.1	.2	.3	.9	.09	.1	.08	.1
Ba	929	3968	287	363	383	4140	2280	3910	309
Be	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bi	<10	<10	19	<10	<10	<10	<10	<10	<10
Cd	18	<10	17	<10	<10	<10	<10	12	<10
Ce	<10	<10	<10	<10	<10	<10	<10	<10	<10
Co	90	46	87	71	61	27	75	49	63
Cr	154	92	297	176	90	74	207	151	290
Cu	280	106	77	166	157	88	268	40	122
La	<10	131	<10	<10	<10	79	231	63	<10
Mo	72	<10	12	<10	<10	<10	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ni	75	48	145	89	71	31	88	43	116
Pb	44	53	40	51	58	44	10	26	23
S %	.5	.6	.5	.7	.5	.4	.4	.3	.3
Sb	<10	<10	<10	<10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sr	536	1721	334	179	291	1680	2610	1950	392
Te	<10	<10	<10	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10	<10	<10	<10
U	15	<10	<10	<10	<10	<10	19	<10	<10
V	284	222	290	333	229	130	194	137	283
W	10	<10	<10	<10	<10	<10	<10	<10	<10
Y	18	41	16	22	18	13	34	<10	16
Zn	179	212	125	143	136	114	198	142	129
Zr	175	677	92	130	262	220	251	324	69
	RESULTS IN %								
Al <sub>2</sub> O <sub>3</sub>	9.8	11.2	10.1	12.1	11.0	14.0	3.4	10.4	9.2
Fe <sub>2</sub> O <sub>3</sub>	13.7	10.7	12.1	14.6	12.9	7.1	12.7	6.7	11.8
CaO	3.5	6.3	7.3	9.2	6.1	3.6	13.0	4.1	9.5
MgO	4.9	3.0	4.1	4.0	2.8	2.3	7.1	2.5	4.2
Na <sub>2</sub> O	4.4	3.4	4.2	3.7	4.9	3.0	1.7	1.4	3.3
K <sub>2</sub> O	3.0	6.7	1.1	.5	2.1	8.9	3.1	9.0	.9
TiO <sub>2</sub>	1.2	.9	1.0	1.3	1.5	.5	1.4	.5	1.0
MnO	.1	.1	.1	.2	.1	.1	.2	.1	.2
P <sub>2</sub> O <sub>5</sub>	.5	.9	.5	.4	.5	.7	2.5	.7	.3
L.O.I.	2.17	1.60	1.48	1.01	1.78	2.93	1.09	2.48	1.00

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

**ASSAYERS (ONTARIO) LIMITED**  
**CERTIFICATE OF ANALYSIS**

Certificate No. DMBW-02/14

Date: July 20, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: James Lawton

## RESULTS IN PPM

	4917	4918	4919	4920	4921	4922	4923	4924
Ag	.2	.5	.3	.5	.6	.5	<.1	.4
As	<10	<10	<10	<10	<10	<10	<10	<10
B %	.1	.3	.3	.1	.08	.1	.3	.09
Ba	578	268	191	1210	7680	2260	349	503
Be	<10	<10	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10	<10	<10
Cd	<10	14	22	<10	14	13	12	18
Ce	<10	<10	<10	<10	<10	<10	<10	<10
Co	75	79	105	57	70	58	69	96
Cr	84	118	63	204	101	225	142	109
Cu	172	186	94	25	211	75	175	197
La	<10	<10	<10	80	155	78	<10	17
Mo	<10	<10	16	<10	<10	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10	<10	<10
Ni	74	79	62	96	42	80	56	88
Pb	12	166	70	54	13	30	27	76
S %	.3	.4	.4	.2	.3	<10	1.0	.3
Sb	<10	<10	10	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10	<10	<10
Sr	304	197	224	1740	2300	1570	348	370
Te	<10	<10	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10	<10	<10	<10
V	287	263	345	207	277	130	286	278
W	<10	<10	<10	<10	<10	<10	<10	<10
Y	12	21	21	62	32	16	16	16
Zn	78	115	174	313	195	121	148	176
Zr	95	189	149	816	401	321	115	187

## RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	9.7	8.9	11.0	7.8	6.6	8.1	7.3	6.4
Fe <sub>2</sub> O <sub>3</sub>	8.6	12.5	19.1	10.4	12.3	7.3	12.4	14.9
CaO	4.8	7.3	6.8	5.7	9.1	4.9	5.7	5.9
MgO	2.4	3.1	2.4	2.1	4.7	2.6	1.7	2.4
Na <sub>2</sub> O	3.2	3.1	4.6	4.9	2.3	4.3	4.5	2.8
K <sub>2</sub> O	2.2	1.1	.8	2.7	6.2	4.3	1.2	1.7
TiO <sub>2</sub>	1.3	1.5	1.8	.9	1.2	.7	1.3	1.6
MnO	.1	.1	.4	.2	.1	.1	.2	.1
P <sub>2</sub> O <sub>5</sub>	.3	.5	.5	.3	1.4	.9	.4	.5
L.O.I.	1.38	2.59	1.01	.99	.90	1.47	.68	2.57

ASSAYERS (ONTARIO) LIMITED

PER \_\_\_\_\_

John van Engelen Mgr.

## ASSAYERS (ONTARIO) LIMITED

## CERTIFICATE OF ANALYSIS

Certificate No. DMBW-02/15

Date: July 20, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: James Lawton

	RESULTS IN PPM								
	4925	4926	4927	4928	4929	4930	4931	4932	4933
Ag	.5	.4	<.1	.3	.7	.1	1.0	1.1	.5
As	<10	<10	10	<10	<10	<10	<10	<10	<10
B %	.4	.1	.1	.4	.4	1.1	.1	.08	.2
Ba	206	172	1170	2800	146	379	69	80	85
Be	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cd	16	18	12	<10	16	14	<10	11	17
Ce	<10	<10	<10	<10	<10	<10	<10	<10	<10
Co	84	82	40	53	80	71	61	94	84
Cr	176	48	61	30	110	87	106	136	105
Cu	105	73	40	75	106	93	94	42	155
La	<10	<10	43	<10	<10	<10	<10	<10	<10
Mo	<10	13	<10	<10	10	35	<10	<10	<10
Nb	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ni	94	45	20	27	64	76	61	509	84
Pb	105	98	74	53	74	75	57	48	101
S %	.4	.4	.3	.4	.5	.9	.4	.6	.6
Sb	<10	<10	<10	<10	<10	<10	<10	<10	11
Se	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sr	143	103	575	208	97	180	79	163	80
Te	<10	<10	<10	<10	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10	<10	<10	<10	<10
V	299	296	91	145	269	127	237	116	472
W	<10	<10	<10	<10	<10	<10	<10	<10	<10
Y	15	21	15	22	<10	<10	15	<10	15
Zn	145	211	118	176	145	77	121	100	173
Zr	127	183	364	321	122	134	80	58	118

## RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	10.0	10.1	10.6	8.1	8.7	7.2	7.4	4.7	9.0
Fe <sub>2</sub> O <sub>3</sub>	13.4	14.3	6.4	14.2	12.0	9.0	13.5	8.5	16.6
CaO	4.2	3.1	2.5	2.5	3.5	6.1	5.2	8.3	5.4
MgO	2.4	3.4	1.0	2.0	2.6	2.8	3.7	10.8	3.8
Na <sub>2</sub> O	4.8	2.6	6.7	4.3	4.8	5.2	4.0	.3	1.6
K <sub>2</sub> O	.9	.7	2.6	.5	.9	1.8	.2	.01	.7
TiO <sub>2</sub>	1.1	1.1	.5	1.3	.5	.3	1.1	.1	.6
MnO	.1	.1	.09	.1	.1	.1	.1	.1	.1
P <sub>2</sub> O <sub>5</sub>	.5	.6	.6	.4	.5	.5	.3	.4	.5
L.O.I.	4.59	4.87	3.47	3.11	6.47	12.98	1.80	17.81	8.19

ASSAYERS (ONTARIO) LIMITED

PER

John van Engelen Mgr.

## ASSAYERS (ONTARIO) LIMITED

## CERTIFICATE OF ANALYSIS

Certificate No. DMBW-02/16

Date: July 20, 1988

Samples of: ROCK

Submitted by: Derry, Michener, Booth &amp; Wahl

Att'n: James Lawton

## RESULTS IN PPM

	4934	4935	4936	4937	EBY-1
Ag	.9	0.8	1.2	1.0	1.1
As	<10	<10	<10	<10	<10
B %	.3	.1	.2	1.3	.8
Ba	406	76	64	280	304
Be	<10	<10	<10	<10	<10
Bi	<10	<10	<10	<10	<10
Cd	14	17	19	<10	14
Ce	<10	<10	<10	<10	<10
Co	54	105	87	64	.44
Cr	33	1500	99	393	61
Cu	106	101	152	88	30
La	<10	<10	<10	<10	<10
Mo	<10	<10	<10	<10	10
Nb	<10	<10	<10	<10	<10
Ni	21	534	66	210	24
Pb	26	69	93	108	115
S %	1.1	.5	.5	.4	.4
Sb	<10	<10	<10	<10	<10
Se	<10	<10	<10	<10	<10
Sn	<10	<10	<10	<10	<10
Sr	72	55	90	152	255
Te	<10	<10	<10	<10	<10
Th	<10	<10	<10	<10	<10
U	<10	<10	<10	<10	<10
V	133	154	315	159	92
W	<10	<10	<10	<10	<10
Y	<10	<10	23	<10	10
Zn	66	104	156	105	90
Zr	59	52	140	148	252

## RESULTS IN %

Al <sub>2</sub> O <sub>3</sub>	3.3	6.9	9.0	10.2	12.3
Fe <sub>2</sub> O <sub>3</sub>	6.6	12.2	15.1	10.0	6.2
CaO	5.7	11.3	5.8	3.8	3.2
MgO	1.0	5.0	3.5	5.2	1.2
Na <sub>2</sub> O	1.3	3.0	3.3	4.9	6.7
K <sub>2</sub> O	.6	.2	.2	1.5	2.2
TiO <sub>2</sub>	.2	.5	1.4	.7	.9
MnO	.1	.2	.1	.1	.1
P <sub>2</sub> O <sub>5</sub>	.4	.4	.5	.4	.7
L.O.I.	1.81	6.96	5.91	5.27	1.78

ASSAYERS (ONTARIO) LIMITED

PER \_\_\_\_\_

John van Engelen Mgr.

**APPENDIX C**

**REPORT OF WORK AND TECHNICAL DATA SHEETS**



Ministry of  
Northern Development  
and Mines

Geophysical-Geological-Geochemical  
Technical Data Statement

C - 1

File \_\_\_\_\_

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT  
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT  
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) GEOLOGICAL MAPPING & SAMPLING

Township or Area EBY TOWNSHIP

Claim Holder(s) BUTTE CANYON RESOURCES INC.

Survey Company Derry Michener Booth & Wahl

Author of Report JAMES R. LAWTON

Address of Author 1811 - 270 SCARLETT RD TORONTO ONT

Covering Dates of Survey JUNE 21 - JULY 13 1986  
(linecutting to office)

Total Miles of Line Cut 46 km

MINING CLAIMS TRAVESED  
List numerically

.....(prefix) .....(number)

LIST ATTACHED

SPECIAL PROVISIONS  
CREDITS REQUESTED

ENTER 40 days (includes  
line cutting) for first  
survey.

ENTER 20 days for each  
additional survey using  
same grid.

Geophysical                    DAYS  
per claim

-Electromagnetic \_\_\_\_\_

-Magnetometer \_\_\_\_\_

-Radiometric \_\_\_\_\_

-Other \_\_\_\_\_

Geological 40

Geochemical \_\_\_\_\_

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: August 31 / 1986 SIGNATURE: [Signature]  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications File file

Previous Surveys

File No.      Type      Date      Claim Holder

.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

TOTAL CLAIMS 31

If space insufficient, attach list



Ministry of  
Natural  
Resources  
Ontario

**Report of Work  
(Geophysical, Geological,  
Geochemical and Expenditures)**

DOCUMENT NO.  
**W8808-323**

Instructions: — Please type or print.  
— If number of mining claims traversed exceeds space on this form, attach a list.  
Note: — Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.  
— Do not use shaded areas below.

The Mining Act

Type of Survey(s)

**GEOLOGICAL SURVEY**

Township or Area

**E BY TWP.**

Claim Holder(s)

**BUTTE CANYON RESOURCES INC.**

Prospector's Licence No.

**T4886**

Address

**SUITE 500, 67 RICHMOND ST. W. TORONTO M5H 1Z5**

Survey Company

**DERRY, Michener, Booth & Wahl**

Date of Survey (from & to)

**22 06 88 / 12 07 88**

Total Miles of Line Cut

Day Mo. Yr. Day Mo. Yr.

Name and Address of Author (of Geo-Technical report)

**J. LAWTON 410-20 RICHMOND ST. E. TORONTO, ONT. M5C 2R9**

Credits Requested per Each Claim in Columns at right

Special Provisions

For first survey:

Enter 40 days. (This includes line cutting)

For each additional survey:  
using the same grid:

Enter 20 days (for each)

Geophysical

Days per Claim

- Electromagnetic
- Magnetometer
- Radiometric
- Other

Geological

Geochemical

Man Days

Complete reverse side  
and enter total(s) here

Geophysical

Days per Claim

- Electromagnetic
- Magnetometer
- Radiometric
- Other

Geological

Geochemical

Days per Claim

40

Airborne Credits

Note: Special provisions  
credits do not apply  
to Airborne Surveys.

Electromagnetic

Days per Claim

Magnetometer

Radiometric

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures	\$	+	15	=	
--------------------	----	---	----	---	--

Total Days Credits

Instructions

Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date	Recorded Holder or Agent (Signature)
------	--------------------------------------

**JULY 16 1988**

*[Signature]*

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying

<b>J. LAWTON</b> Suite 410, 20 RICHMOND ST. EAST M5C 2R9	Date Certified	Certified by (Signature)
--	----------------	--------------------------

**JULY 16 1988**

*[Signature]*

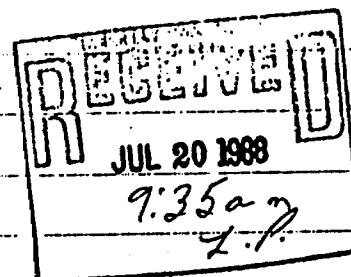
For Office Use Only	
Total Days Cr.	Date Recorded
1,240 y.p.	<b>JULY 20 1988</b>

Mining Recorder	<b>J. G. Weenier</b>
Branch Director	

Claim Numbers - Eby Township

L 735464	L 891900
" 735596	L 891901
" 735597	" 891902
" 735598	" 891903
" 738544	" 891905
" 738545	" 891906
" 738546	" 891907
" 738547	" 891908
" 738548	" 891909
" 738577	980065
" 738858	" 980066
" 802124	" 980067
" 802125	" 980068
" 802126	" 980069
" 842693	
" 842694	
" 842695	

31 Claims.



W8808-00513

Ministry of  
Natural  
ResourcesReport of Work  
(Geophysical, Geological,  
Geochemical and Expenditures)DOCUM  
W881

42A01SE0172 2.11619 EBY

900

*Lands Management*

The ....., ...

Type of Survey(s)

## GEOCHEMICAL SURVEY

Township or Area

EBY TWP.

Claim Holder(s)

BUTTE CANYON RESOURCES INC.

Prospector's Licence No.

T 4886

Address

SUITE 500, 67 RICHMOND ST. W. TORONTO M5H 1Z5

Survey Company

DERRY, MICHEFER, BOOT &amp; WAHL

Date of Survey (from &amp; to)

22 06 88 | 12 07 88

Total Miles of Line Cut

Day Mo. Yr. Day Mo. Yr.

Name and Address of Author (of Geo-Technical report)

J. LAWTON, I TRINDER 410-20 RICHMOND ST E TORONTO MSC 2R9

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
For each additional survey: using the same grid: Enter 20 days (for each)	Geological	
	Geochemical	

Mining Claim	Expend. Days Cr.	Mining Claim	Expend. Days Cr.
Prefix	Number	Prefix	Number
L	735464 9		891909 94
	735596 9		980065 —
	735597 23		980066 —
	735598 23		980067 —
	738544 23		980068 —
	738545 9		980069 —
	738546 18		
	738547 18		
	738548 9		
	738577 —		
	738858 19		
	802126 —		
	842693 —		
	842694 —		
	842695 —		
	891900 —		
	891901 —		
	891902 —		11 1988
	891903 33		
	891905 —		
	891906 —		
	891907 —		
	891908 46		

Man Days	Geophysical	Days per Claim
RECEIVED LAWRENCE LAKE MINING DIVISION and enter details here	- Electromagnetic	
NOV 4 1988 10.15 ectm	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	
Electromagnetic	
Magnetometer	
Radiometric	

Expenditures (excludes power stripping)	
Type of Work Performed	(Section 77-19)
GEOCHEMICAL ANALYSES (149)	

Performed on Claim(s)	
SEE ATTACHED LIST	

Calculation of Expenditure Days Credits	Total Days Credits
Total Expenditures \$ 3725.00	+ 15 = 248

Instructions	
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.	

Date	Recorded Holder or Agent (Signature)
OCTOBER 26 1988	Ian Trinder

Certification Verifying Report of Work	
I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.	

Name and Postal Address of Person Certifying	
IAN TRINDER SUITE 410-20 RICHMOND ST. EAST TORONTO ONT. MSC 2R9	

Date Certified	Certified by (Signature)
NOVEMBER 3 1988	Ian Trinder

1362 (81/9)

For Office Use Only	
Total Days Cr.	Date Recorded
248	Nov 4/88
Z.P.	Data Approved as Recorded

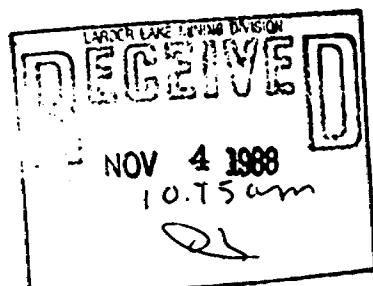
Mining Recorder
Brian Weller
Branch Director

1362 (81/9)

LIST OF CLAIMS FROM WHICH SAMPLES WERE COLLECTED

L 735464  
L 735596  
L 735597  
L 735598  
L 738544  
L 738545  
L 738546  
L 738547  
L 738548  
L 738577  
L 738858  
L 802126  
L 842693  
L 842694  
L 842695  
L 891900  
L 891901  
L 891902  
L 891903  
L 891905  
L 891906  
L 891907  
L 891908  
L 891909  
L 980065  
L 980066  
L 980067  
L 980068  
L 980069

Total of 149 samples collected on listed claims.





Ministry of  
Natural  
Resources  
Ontario

Report of Work  
(Geophysical, Geological,  
Geochemical and Expenditures)

DOCUMENT No.  
W8808-323

"Sept. 8"

- Instructions: - Please type or print.  
- If number of mining claims traversed exceeds space on this form, attach a list.  
Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.  
- Do not use shaded areas below.

Type of Survey(s)

*1/16/88* *Agreement* *The Mining Act*  
GEOLOGICAL SURVEY

Township or Area

EBY TWP.

Claim Holder(s)

BUTTE CANYON RESOURCES INC.

Prospector's Licence No.

T4886

Address

SUITE 500, 67 RICHMOND ST. W. TORONTO M5H 1Z5

Survey Company

DERRY, Michener, BOOTH & WAHL

Date of Survey (from & to)

22 06 88 | 12 07 88

Day | Mo. | Yr.

Day | Mo. | Yr.

Total Miles of line Cut

Name and Address of Author (of Geo-Technical report)

J. LAWTON 410-20 RICHMOND ST. E. TORONTO, ONT. M5C 2R9

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim	Mining Claims Traversed (List in numerical sequence)		
			Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic		L	See attached list	
	- Magnetometer				
	- Radiometric				
	- Other				
For each additional survey: using the same grid: Enter 20 days (for each)	Geological				
	Geochemical				
Man Days	Geophysical	Days per Claim			
Complete reverse side and enter total(s) here	- Electromagnetic				
	- Magnetometer				
	- Radiometric				
	- Other				
	Geological	40			
	Geochemical				
Airborne Credits	Electromagnetic	Days per Claim			
Note: Special provisions credits do not apply to Airborne Surveys.	Magnetometer				
	Radiometric				

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures	\$	÷	15	=	Total Days Credits

Instructions

Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

For Office Use Only	
Total Days Cr.	Date Recorded
Recorded	July 20/88
1,240	Date Approved as Recorded
J.P.	See Revision
Mining Recorder: J.H.G. Weermeijer	
Branch Director: Statement.	

Date

July 16 1988

Recorded Holder or Agent (Signature)

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying

J. LAWTON SUITE 410-20 RICHMOND ST. EAST TORONTO, ONT.  
M5C 2R9

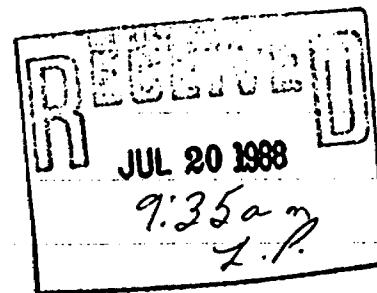
Date Certified  
July 16 1988

Certified by (Signature)

# Claim Numbers - Eby Township

L 735464	L 891900
" 735596	L 891901
" 735597	" 891902
" 735598	" 891903
" 738544	" 891905
" 738545	" 891906
" 738546	" 891907
" 738547	" 891908
" 738548	" 891909
" 738577	" 980065
" 738858	" 980066
" 802124	" 980067
" 802125	" 980068
" 802126	" 980069
" 842693	
" 842694	
" 842695	

31 Claims.





Ministry of  
Northern Development  
and Mines

**Technical Assessment  
Work Credits**

File  
**2.11619**

Date  
**October 18, 1988**

Mining Recorder's Report of  
Work No.  
**W8808-323**

Recorded Holder

**Butte Canyon Resources Inc.**

Township ~~XXXXX~~

**Eby**

Type of survey and number of  
Assessment days credit per claim

Mining Claims Assessed

**Geophysical**

Electromagnetic \_\_\_\_\_ days

Magnetometer \_\_\_\_\_ days

Radiometric \_\_\_\_\_ days

Induced polarization \_\_\_\_\_ days

Other \_\_\_\_\_ days

L 735464  
735596 to 598 inclusive  
738544 to 548 inclusive  
738577  
802124 to 126 inclusive  
842693 to 695 inclusive  
891900 to 903 inclusive  
891905  
891907 to 909 inclusive  
980065 to 069 inclusive

Section 77 (19) See "Mining Claims Assessed" column

Geological 20 days

Geochemical 20 days

Man days

Airborne

Special provision

Ground

Credits have been reduced because of partial  
coverage of claims.

Credits have been reduced because of corrections  
to work dates and figures of applicant.

Special credits under section 77 (16) for the following mining claims

10 days Geological

L 738858  
891906

No credits have been allowed for the following mining claims

not sufficiently covered by the survey

insufficient technical data filed

\* Note: Line cutting credits previously approved.

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.



Ontario

Ministry of  
Northern Development  
and Mines

Ministère du  
Développement du Nord  
et des Mines

November 2, 1988

Your File: W8808-323  
Our File : 2.11619

Mining Recorder  
Ministry of Northern Development and Mines  
4 Government Road East  
Kirkland Lake, Ontario  
P2N 1A2

ONTARIO GEOLOGICAL SURVEY  
ASSESSMENT FILES  
OFFICE

NOV 7 1988

RECEIVED

RE: Notice of Intent dated October 18, 1988.  
Geological Survey submitted on Mining Claims  
L 735464 et al in the Township of Eby

The assessment work credits, as listed with the above-mentioned  
Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so  
indicate on your records.

Yours sincerely,

W.R. Cowan  
Provincial Manager, Mining Lands  
Mines & Minerals Division

Whitney Block, Room 6610  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Telephone: (416) 965-4888

RM  
RM:sc

cc: Butte Canyon Resources  
Suite 500  
67 Richmond Street W.  
Toronto, Ontario  
M5H 1Z5

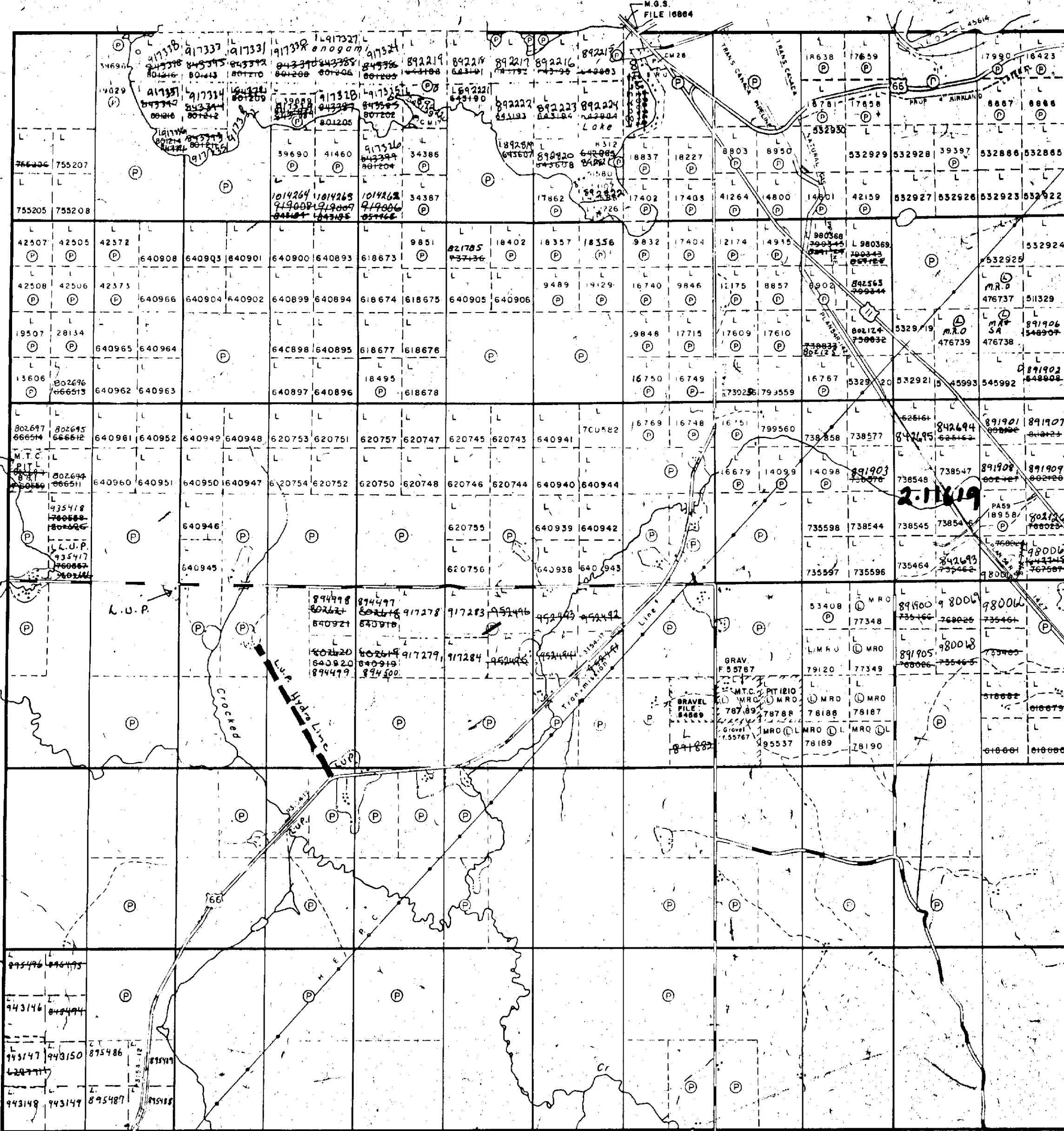
cc: Mr. G.H. Ferguson  
Mining & Lands Commissioner  
Toronto, Ontario

cc: Mr. J. Lawton  
Suite 410  
20 Richmond Street East  
Toronto, Ontario  
M5C 2R9

cc: Resident Geologist  
Kirkland Lake, Ontario

Grenfell, Twp. M. 351

Burt Twp. M. 334



12 11 10 9 8 7 6 5 4 3 2 1

Blain Twp. M. 418

THE TOWNSHIP  
OF

EBY

DISTRICT OF  
TIMISKAMING

LARDER LAKE  
MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

- PATENTED LAND
- CROWN LAND SALE
- LEASES
- LOCATED LAND
- LICENSE OF OCCUPATION
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- ROADS
- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES
- CANCELLED

IV Otto Twp. M. 379

VI

V

III

II

NOTES

400' surface rights reservation along the shores  
of all lakes and rivers.

AREAS WITHDRAWN FROM STAKING  
under Sec.43 of The Mining Act (R.S.O.1970).  
Order No. File Date Disposition

Note Lot 7, Con 3 - Cert. of Forfeiture + Sent 17/82

NOTICE OF FORESTRY ACTIVITY  
THIS TOWNSHIP / AREA FALLS WITHIN THE  
TIMISKAMING MANAGEMENT UNIT  
AND MAY BE SUBJECT TO FORESTRY OPERATIONS.  
THE MNR UNIT FORESTER FOR THIS AREA CAN BE  
CONTACTED AT: P.O. BOX 129  
SWASTIKA, ONT.  
POK ITO/  
705-642-3222

PLAN NO. M-345

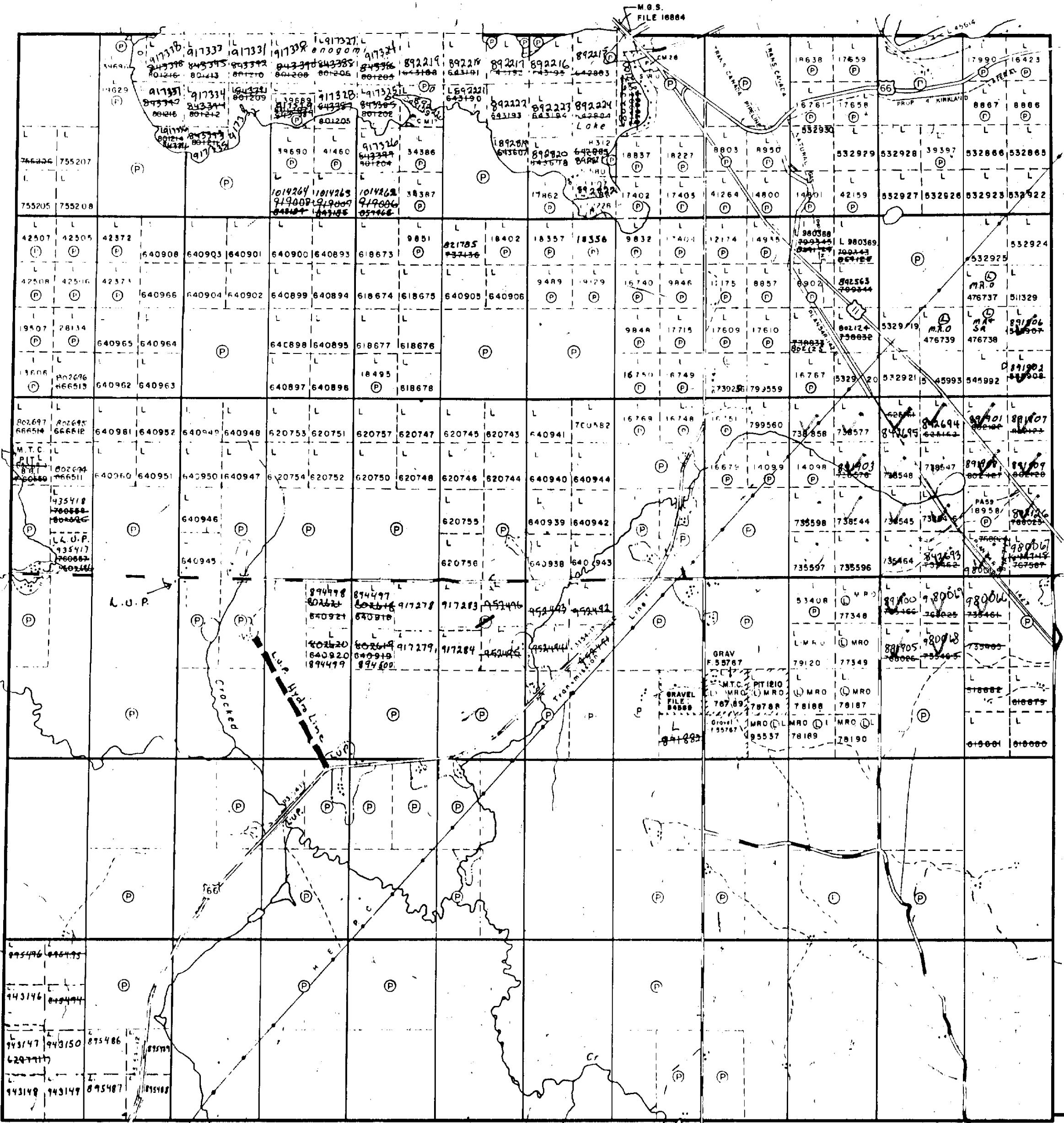
ONTARIO

MINISTRY OF NATURAL RESOURCES

SURVEYS AND MAPPING BRANCH

Grenfell, Twp. M. 351

Burt Twp. M. 334



Blain Twp. M. 418

# THE TOWNSHIP OF

EBY

# DISTRICT OF TIMISKAMING

LARDER LAKE  
MINING DIVISION

SCALE: 1-INCH=40 CHAINS

## LEGEND

- |                       |        |
|-----------------------|--------|
| PATENTED LAND         | (P)    |
| CROWN LAND SALE       | C.S.   |
| LEASES                | (L)    |
| LOCATED LAND          | Loc.   |
| LICENSE OF OCCUPATION | L.O.   |
| MINING RIGHTS ONLY    | M.R.O. |
| SURFACE RIGHTS ONLY   | S.R.O. |
| ROADS                 | <hr/>  |
| IMPROVED ROADS        | <hr/>  |
| KING'S HIGHWAYS       | <hr/>  |
| RAILWAYS              | <hr/>  |
| POWER LINES           | <hr/>  |
| MARSH OR MUSKEG       | <hr/>  |
| MINES                 | X      |
| CANCELLED             | C.     |

## NOTES

400' surface rights reservation along the shores  
of oil lakes and rivers.

**AREAS WITHDRAWN FROM STAKING**  
**under Sec. 43 of The Mining Act (R.S.O. 1970).**

N<sup>o</sup>. Lot 7, Con. 3 - Cert. of Forfeiture - Sept 17/85.

**NOTICE OF FORESTRY ACTIVITY**

**THIS TOWNSHIP / AREA FALLS WITHIN THE  
TIMISKAMING MANAGEMENT UNIT**

AND MAY BE SUBJECT TO FORESTRY OPERATIONS.  
THE MNR UNIT FORESTER FOR THIS AREA CAN BE  
CONTACTED AT: P.O. BOX 129  
SWASTIKA, ONT.  
POK ITO/  
705-642-3222

PLAN NO. - M-345

**ONTARIO**

