REPORT ON THE VLF AND HORIZONTAL LOOP ELECTROMAGNETIC SURVEYS EAST EBY PROPERTY, EBY TOWNSHIP NTS 42A/1

PREPARED FOR

BUTTE CANYON RESOURCES INCORPORATED

DERRY, MICHENER, BOOTH & WAHL

R. W. Wo[illegible]ham, P.Eng.

REGISTERED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

Toronto, Ontario
February 1, 1988

Ref: 88-08

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INTRODUCTION

Geophysical surveys, utilizing VLF and horizontal loop electromagnetic methods were completed on the East Eby property of Butte Canyon Resources Incorporated. The surveys were performed by the staff of Derry, Michener, Booth & Wahl (DMBW) under the direct supervision of the author. The surveys were conducted during the period October 15, 1987 to November 30, 1987 at two separate times. This work was part of an exploration program recommended by DMBW in a report dated April 15, 1987. This report is for assessment credits and a technical data statement is contained in Appendix 1. A magnetic survey, completed at the same time, was reported on previously and submitted for assessment credits (ref. #87-114).

PROPERTY LOCATION, DESCRIPTION AND ACCESS

The East Eby property is located in Eby Township, about 12 km southwest of the town of Kirkland Lake and about 5 km southeast of Kenogami Lake as shown in Figure 1. The property consists of the following 31 unpatented mining claims in two contiguous blocks covering about 496 hectares (Figure 2). Survey coverage was completed on portions of the Main Block claims only.

Main Block Claim Numbers	Date of Record
L 735464	07/03/84
L 735596 to 735598 incl.	07/03/84
L 738544 to 735548 incl.	07/03/84
L 738577	07/03/84
L 738858	09/03/84
L 802126	28/03/85
L 842693	29/04/85
L 842694 to 842695	12/12/85
L 891900	27/05/86
L 891901	28/07/86
L 891902	30/07/86
L 891903	21/11/86
L 891905	27/05/86
L 891906	30/07/86
L 891907 to 891909 incl.	28/07/86
L 980065 to 980069 incl.	07/04/87

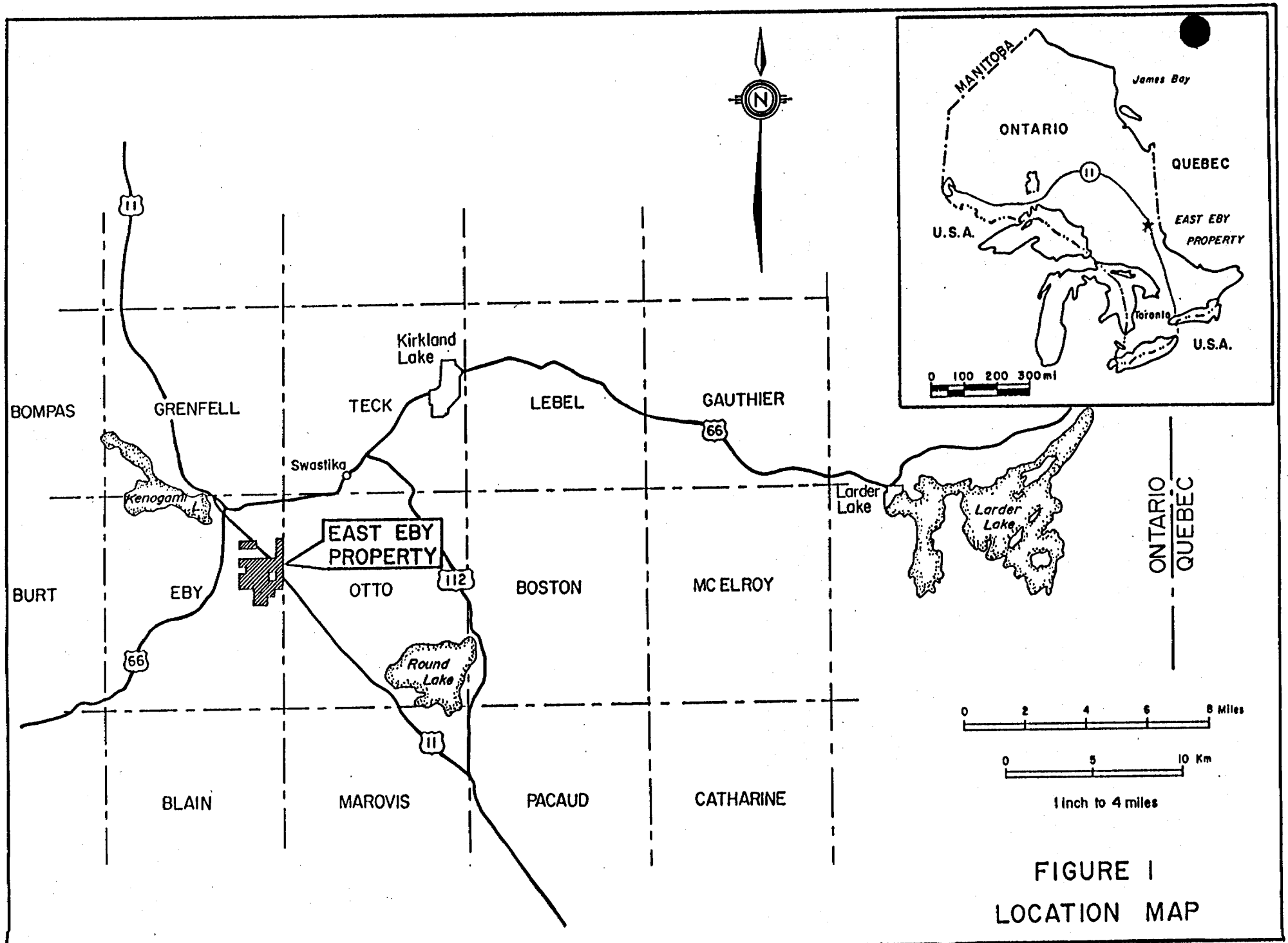
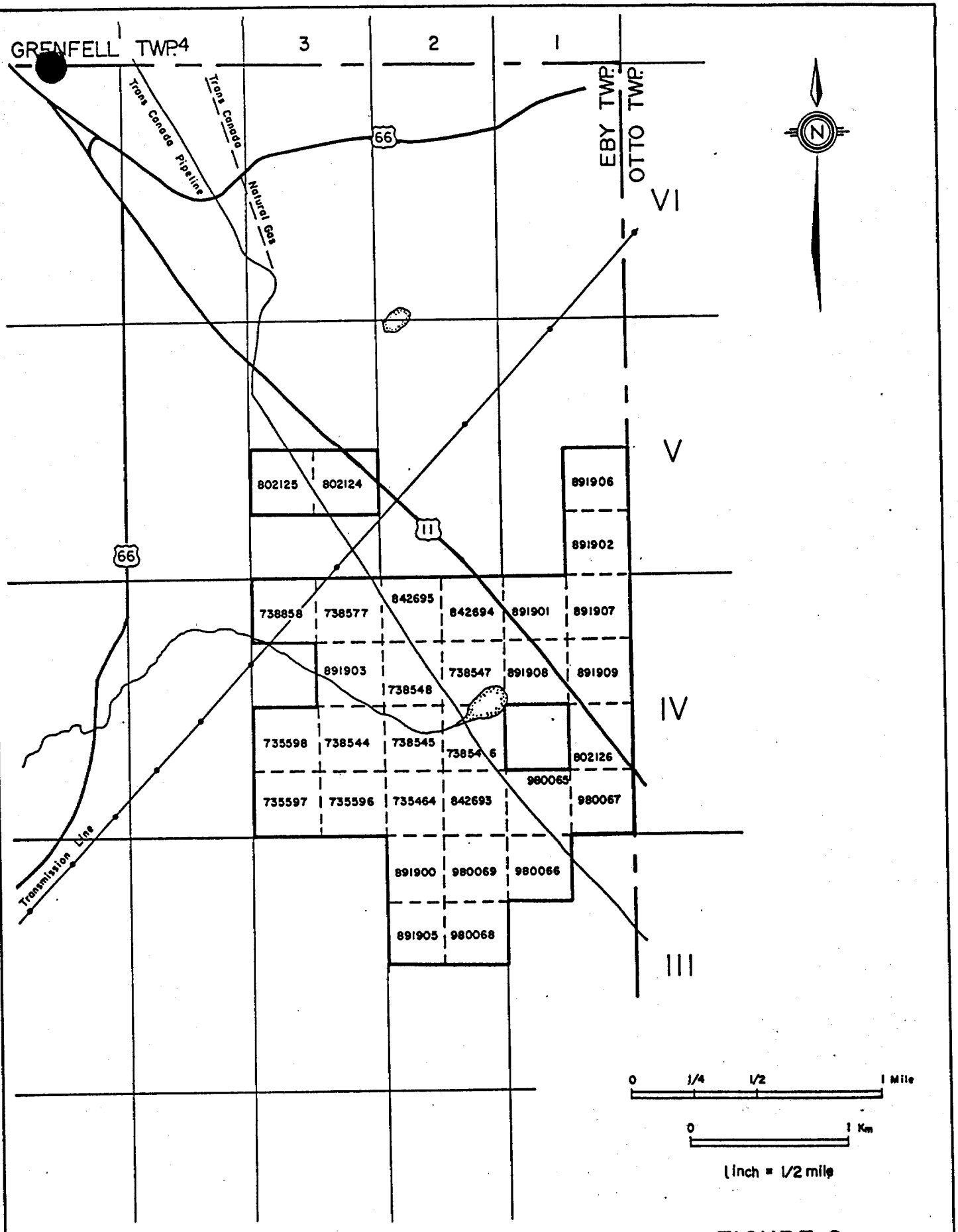


FIGURE 1
LOCATION MAP



NOTE:
All claim numbers prefixed by letter "L".

FIGURE 2
CLAIM MAP

North Block

L 802124	27/03/85
L 802125	27/03/85

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.

Access to the property is excellent. Highway 11 crosscuts the northeast corner of the property and there are bushroads 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 mobility.

GEOLOGY

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 in the area can essentially be divided into four major stratigraphic categories:

(1) Pre-Timiskaming, Skead Group, 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 komatiic (ultramafic) flows.

(3) Post-Timiskaming Highway 11 basalts and local komatiites (Kenojevis Group).

(4) Various gabbroic, syenitic and granitic intrusives.

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

Based on government mapping, a major unit consisting dominantly of felsic flows and pyroclastics and iron formation horizons transgresses the property from the northeast to the southwest. Two diamond drill holes collared in the unit indicate that the package also contains impure medium to coarse-grained sandstones, arkose horizons and a cherty, aphanitic, iron-poor equivalent to an iron formation. The bottom half of one drill hole dominantly consists of a komatiite flow structurally overlying a thick komatiitic sediment. These units probably represent the basal succession of the Highway 11 Basalts. Both oxide and sulphide facies iron formations, having association with gold mineralization, exist on the property.

Based on regional mapping, there are three types of intrusive rocks on the property: early mafic to ultramafic stocks, dykes and sills; late Archean felsic intrusives, presumably part of the Round Lake Batholith; and the late Archean alkalic Otto stock. Proterozoic diabase dykes undoubtedly crosscut portions of the property.

SURVEY PARAMETERS AND PRESENTATION

VLF Electromagnetic Survey

This survey utilized the Scintrex IGS-2 system used for the magnetic survey, previously reported on, with a VLF-4 electromagnetic sensor. Instrument specifications are contained in Appendix 2. The VLF readings were recorded at the same time as the magnetic readings. The measurements consisted of the horizontal amplitude, vertical component of the in-phase and quadrature secondary fields produced by the primary field from the VLF transmitter station at Cutler, Main with a frequency of 24.0 KHz. Readings were taken every 25 m along lines spaced 100 m apart. A portion of the grid was not surveyed because the VLF transmitter station was inactive at the time of the combined magnetic-VLF survey. A total of 32 line km of data or about 1,280 readings were recorded.

Each day's results were dumped to a floppy disc storage device for later office editing and plotting by DMBW. The machine plotted profiles of the in-phase and quadrature values at a scale of 1:5,000 are shown on Map 88-08-01 in a pocket at the back of this report.

Horizontal Loop Electromagnetic Survey

The electromagnetic instrument was an Apex Parametrics Ltd. Max-Min II unit. Instrument specifications are contained in Appendix 2. A coil spacing of 100 m was used for the survey with a station reading interval of 25 m. Survey lines were 100 m apart. Only the south part of the grid was surveyed. Accurate levelling of the coils was monitored at each station and correct coil distance was maintained using the picket line chainages. The in-phase and quadrature readings at a frequency of 1,777 Hz were measured at each station. A total of 16 line km of data or about 1,280 readings were collected on the property.

Office compilation consisted of entry of the data values in the field notebooks into a computer system for machine plotting. A survey map was generated at a scale of 1:5,000 with appropriate title and legend. The in-phase and quadrature values are shown as solid and dashed profile lines respectively (see Maps 88-08-02 in pocket.

RESULTS

Horizontal Loop Electromagnetic Survey

There are two conductive areas on the portion of the grid that was surveyed. In the southwest corner of the grid there are several parallel conductive trends having very high conductivity characteristics. Conductive trend displacements suggest that cross-faulting is present in at least one and probably two locations. All of the conductors in this area are coincident with medium to high amplitude magnetic responses (refer to report #87-114 of December 29, 1987).

The other conductive response area is located in the northeast at about 500 south. It is a linear northeast trending feature with a coincident, very low amplitude, magnetic response. There is a poorer conductivity, low amplitude, parallel conductor to the south of this main trend which has poor line-to-line continuity and no magnetic association.

Note that a portion of line 800 and 700 west was not surveyed. This was the result of erratic off-scale readings produced by a gas pipeline running subparallel to the survey lines in this area.

VLF Electromagnetic Survey

The high conductivity responses in the southwest corner of the grid detected by the horizontal loop survey were only partially detected by the VLF survey. Conductive overburden is probably masking responses from the bedrock conductors in this area. The much higher frequency generated VLF response is prone to such masking effects. The other horizontal loop conductor on the east side of the grid was only partially detected by the VLF survey because of inadequate line coverage in this area.

Except for a few local one-line VLF responses and the erratic responses in the central grid area related to a gas pipeline, the only other conductor of note occurs on or in the vicinity of the east and west portions of the baseline. A single conductive trend is suggested at the west end of the baseline while at the east end of the baseline a more complex multiple zoned conductive area is indicated.

CONCLUSIONS

The horizontal loop electromagnetic survey has identified several conductive trends having coincident magnetic signatures. The source of these conductors is most probably oxide and sulphide iron formation as indicated by previous drilling and prospecting on and along strike from the conductors. However, not all of the conductive indications have been explained.

In addition to the conductors delineated by the horizontal loop survey, the VLF electromagnetic survey detected one intermittent conductive horizon which is coincident with a contact between felsic and mafic to intermediate metavolcanics. Other than the erratic readings obtained over the gas pipeline, other isolated VLF responses have no obvious explanation but are possibly related to conductive overburden effects but may have bedrock sources.

RECOMMENDATIONS

The iron formations in the area are known to have an association with gold mineralization. Areas of alteration associated with sulphide iron formation and magnetite/hematite iron formation may occur in structurally complex areas of faulting and folding. Such areas may be recognized from their magnetic/conductive characteristics and, if outcrop exposure exists, from their alteration products and detailed mapping. The conductive trends associated with coincident magnetic responses in the southwest part of the property appear to be faulted and/or folded. These conductive areas are prime exploration targets. Other conductive responses need evaluation on a second priority basis. A detailed program of mapping and prospecting is planned for the next field season. This work will aid in identifying specific targets worth drill investigation.

CERTIFICATE OF QUALIFICATION

I, Roderick W. Woolham of the town of Pickering, Province of Ontario, do hereby certify that:-

1. I am a geophysicist and reside at 1463 Fieldlight Blvd., Pickering, Ontario, L1V 2S3.

2. I graduated from the University of Toronto in 1961 with a degree of Bachelor of Applied Science, Engineering Physics, Geophysics Option.

3. I am a member in good standing of the following organizations: The Association of Professional Engineers of the Province of Ontario (Mining Branch); Society of Exploration Geophysicists; South African Geophysical Association.

4. I have been practising my profession for a period of more than 25 years.

5. I am an Associate with Derry, Michener, Booth & Wahl, Consulting Geologists and Engineers.

6. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the properties or securities of Butte Canyon Resources Incorporated or any affiliate.

7. I personally was involved with the technical supervision of the survey and wrote the report.

8. I consent to the use of this report in submissions for assessment credits and for similar regulatory requirements.

R. W. Woolham

REGISTERED PROFESSIONAL ENGINEER
R. W. WOOLHAM
PROVINCE OF ONTARIO

Toronto, Ontario
February 1, 1988

APPENDIX 1

TECHNICAL DATA STATEMENT

Ontario

Ministry of Natural Resources

File_____

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

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) VLF, HEM Electromagnetic

Township or Area Eby Twp.

Claim Holder(s) Butte Canyon Resources Inc.
Suite 500, 67 Richmond St. W. Toronto

Survey Company Derry Michener Booth & Wahl

Author of Report R.W. Woolham

Address of Author Suite 410, 20 Richmond St. E. Toronto

Covering Dates of Survey Oct. 15 to Nov. 30, 1987
(linecutting to office)

Total Miles of Line Cut 46 km (previously reported)

SPECIAL PROVISIONS CREDITS REQUESTED

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

ENTER 20 days for each additional survey using same grid. * some claims only partial coverage

	DAYS per claim
Geophysical	
–Electromagnetic	20*
–Magnetometer	
–Radiometric	
–Other VLF	20*
Geological	
Geochemical	

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

Magnetometer_____ Electromagnetic_____ Radiometric_____
(enter days per claim)

DATE:_____ SIGNATURE:_____
Author of Report or Agent

Res. Geol._____ Qualifications_____

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
L	735464
	735596
	597
	598
	738544
	545
	546
	547
	548
	577
	802126
	892693
	694
	695
	891900
	901
	902
	903
	905
	906
	907
	908
	909
9	80 065
	066
	067
	068
	069

TOTAL CLAIMS_____

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations _____ Number of Readings _____

Station interval _____ Line spacing _____

Profile scale _____

Contour interval _____

MAGNETIC

Instrument _____

Accuracy – Scale constant _____

Diurnal correction method _____

Base Station check-in interval (hours) _____

Base Station location and value _____

_____

ELECTROMAGNETIC

Instrument APEX MAX MIN II , IGS-2/VLF-3

Coil configuration coplanar (SEE INSTRUMENT SPECIFICATIONS APPENDIX 2 This report)

Coil separation 100 m. (Apex.)

Accuracy _____

Method: ☐ Fixed transmitter ☐ Shoot back ☒ In line ☐ Parallel line

Frequency 1777 Hz / Cutler Maine
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

_____

Base station value and location _____

_____

Elevation accuracy _____

INDUCED POLARIZATION RESISTIVITY

Instrument _____

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time _____ Frequency _____

– Off time _____ Range _____

– Delay time _____

– Integration time _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____

APPENDIX 2

INSTRUMENT SPECIFICATIONS

Technical Description of the VLF-3 VLF Electromagnetic System

Frequency Tuning
Automatic digital tuning. Can be tuned to any frequency in the range 15.0 to 29.0 Hz with a bandwidth of 150 Hz. Up to three frequencies can be chosen by keyboard entry for sequential measurements.

Field Strength Range
Fields as low as 100 nA/m can be received. Maximum received field is 2 mA/metre. These values are specified for 20 kHz. For any other frequency, normalize the above limits with station frequency in kHz/20.

Signal Filtering
Narrow bandpass, low pass and sharp cut-off high pass filters.

Measuring Time
0.5 seconds sample interval. As many as 2^{16} samples can be stacked to improve measurement accuracy.

VLF-Magnetic Field Components Measured
1) Horizontal amplitude, 2) vertical in-phase component, and 3) vertical quadrature components. Vertical components are displayed as a percentage of horizontal component and are related in phase to the horizontal component. Their range is ± 120%; reading resolution 1%.

VLF-Magnetic Field Sensor
Two air-cored coils in a backpack mounted housing with an electronic level for automatic tilt compensation. The error in the vertical in-phase component is less than 1% for tilts up to 25°.

VLF-Electric Field Dipole
Two capacitive electrodes with integral preamplifiers and 5 m of cable. Probe input impedance exceeds 100 megaohms and capacitance is less than 1 picofarad.

VLF-Electric Field Components Measured
In-phase and quadrature components of the horizontal electric field phase related to the horizontal VLF-magnetic field. These components are not recorded but are used in the calculations of resistivity and phase. The reading resolution is 1 ohm.

Apparent Resistivity Calculation

$$\rho = \frac{1}{2\pi f \mu_o} \left| \frac{E_x}{H_y} \right|^2$$

where:

- ρ = apparent resistivity in ohm-meters
- E_x = horizontal electric amplitude, calculated. $E_x = (E_x(I)^2 + E_x(Q)^2)^{1/2}$
- H_y = horizontal magnetic amplitude, measured
- f = VLF station frequency in Hertz
- μ_o = permeability of the ground in Henries/meter, a constant

The resistivity calculation has a range of 1 to 100,000 ohm-meters with a resolution of 1 ohm-meter.

Phase Angle Calculation
The phase angle θ is expressed as:

$$\theta = \arctan \frac{E_x(Q)}{E_x(I)}$$

where:

- $E_x(Q)$ = horizontal quadrature VLF electric field, measured
- $E_x(I)$ = horizontal in-phase VLF electric field, measured

The phase angle calculation has a range of -180° to + 180° with a resolution of 1°. By definition the angle is positive when the E field leads the H field.

Digital Display
32 character, 2 line LCD display

Keyboard Input
14 keys for entering all commands, coordinates, header and ancillary information.

Languages
English plus French is standard.

Standard Memory
The internal 16K RAM solid-state memory records up to 1100 VLF-magnetic or 600 combined VLF-magnetic and VLF-electric measurements.

Clock
Real time clock with day, month, year, hour, minute and second. One second resolution, ± 1 second stability over 12 hours. Needs keyboard initialization only after battery replacement.

Digital Data Output
RS-232C serial interface for digital printer, modem, microcomputer or cassette tape recorder. Data outputs in 7 or 8 bit ASCII, one start, two stop bits, no parity format. Baud rate is keyboard selectable at 110, 300, 600 and 1200 baud. Carriage return delay is keyboard selectable in increments of one from 0 to 999. Handshaking is done through X-on/X-off protocol.

Dimensions
Console: 240 x 90 x 240 mm
VLF-Magnetic Sensor: 110 mm diameter, length 120 mm

Weights
Console with Non-Rechargeable Battery Pack; 3.5 kg.
Console with Rechargeable Battery Pack; 4.0 kg.
VLF-magnetic Sensor with harness; 1.5 kg
VLF-electric Sensor; total weight of capacitive electrodes plus cables is 0.9 kg.

Operating Temperature Range
-40°C to + 50° provided optional Display Heater is used below -20°C.

Power Requirements
Can be powered by external 12 V DC or one of the Battery Pack Options listed below. The current consumption is 0.2 A.

Technical Description of the VLF-3 VLF Electromagnetic System

Optional and Accessory Items

Non-Rechargeable Battery Pack Option
10 disposable alkaline C cell for installation inside VLF-3 console provide 6000 readings at 25°C assuming each measurement requires the typical time of about 15 seconds.

Rechargeable Battery Pack and Charger Option
Six rechargeable lead-acid batteries in holder for installation in VLF-3 console provide 3400 readings at 25°C, assuming each measurement requires 15 seconds. Suggested for cold weather operation.

The charger runs from 115 or 230 V AC, 50 or 60 Hz and draws 20VA. It is overload protected; 140 x 95 x 65 mm; 1.0 kg.

Low Temperature Battery Extender Kit
Comprises a cover for the bottom of the instrument console, a battery pack cover, a waist belt and a battery cable. Slots on the battery pack cover permit belt mounting next to the operator's body for warmth.

Optional RS-232 Cable and Adaptor
Used for communicating between VLF-3 and peripheral devices such as a digital printer, microcomputer, cassette recorder or modem.

Optional Memory Expansion
Increases the memory four times, to a maximum of 64K RAM in 8K RAM increments. Each 16K RAM increments holds as many readings as the Standard Memory.

Electric Field Sensor Option
This option, consisting of two capacitive electrodes with integral preamplifiers and an interconnecting cable permits VLF resistivity measurements to be made. Five metres is the standard cable length, however, longer lengths are available on request.

Primary Field Drift Correction Option
This option consists of a special program EPROM which permits the VLF-3 to operate in a cycling mode, measuring and storing data from up to three transmitters. It also permits communication between a portable and a base station VLF-3 for the purpose of correcting the horizontal VLF-magnetic field vector for changes in primary field strength.

Display Heater
Required for cold weather operation. Powered by main batteries, thermostatically controlled to turn off above -20°C.

Peripheral Devices
Scintrex is prepared to recommend or supply digital printers, modems, cassette tape recorders and microcomputers with software.

Language Options
In addition to English, a second language using Latin characters can replace English.

Carrying Case
Scintrex carrying case CC-4 will carry console, sensor, battery pack, RS-232 cable with adapter and manual.

Applications Software
Scintrex supplies fully documented software written for the IBM PC computer and certain other microcomputers which use the MS-DOS operating system. This software is designed to permit: 1) archiving of data, 2) calculation of parameters such as VLF ellipticity, dip angle, total field and Fraser filters and 3) profile and contour outputs on digital printers.

SCINTREX

222 Snidercroft Road
Concord Ontario Canada
L4K 1B5

Telephone: (416) 669-2280
Cable: Geoscint Toronto
Telex: 06-964570

Geophysical and Geochemical
Instrumentation and Services

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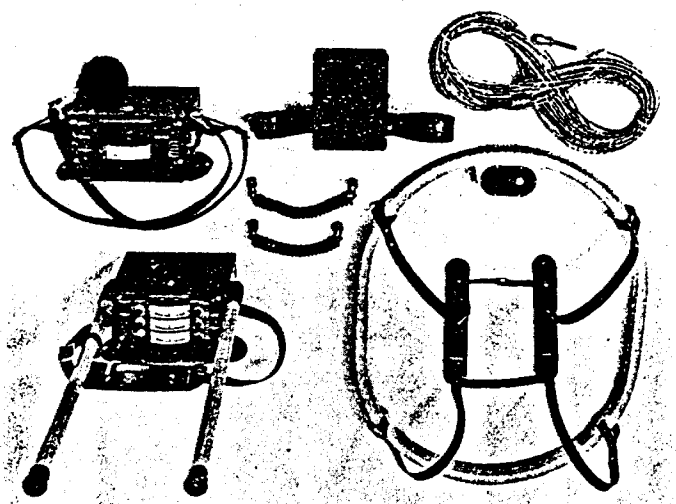
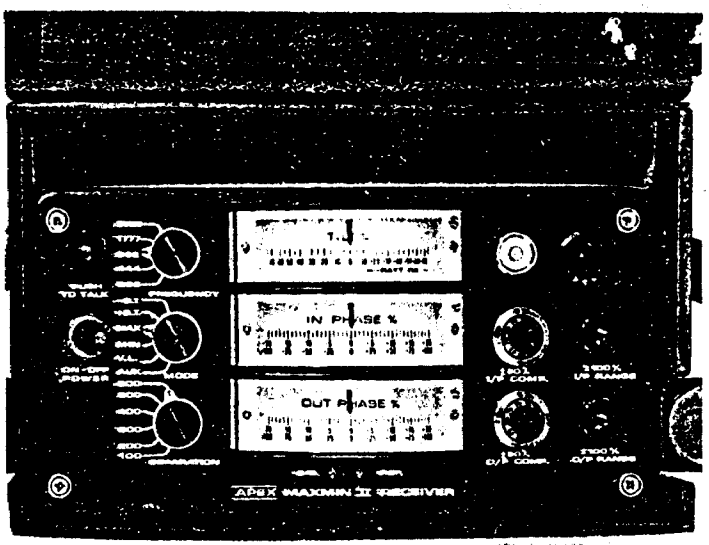




MAXMIN II

SPECIFICATIONS:

Frequencies: 222, 444, 888, 1777 and 3555 Hz.

Modes of Operation:
MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with reference cable.
MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.
V.L.: Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coil Separations: 25, 50, 100, 150, 200 & 250 m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIIF). Coil separations in V.L. mode not restricted to fixed values.

Parameters Read:
- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

Readouts:
- Automatic, direct readout on 90 mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90 mm edgewise meters in V.L. mode.

Scale Ranges:
In-Phase: ±20%, ±100% by push-button switch.
Quadrature: ±20%, ±100% by push-button switch.
Tilt: ±75% slope.
Null (V.L.): Sensitivity adjustable by separation switch.

Readability: In-Phase and Quadrature: 0.5%. Tilt: 1%

Repeatability: ± 0.5% to ±1% normally, depending on conditions, frequencies and coil separation used.

Transmitter Output:
- 222 Hz : 175 Atm^2
- 444 Hz : 160 Atm^2
- 888 Hz : 100 Atm^2
- 1777 Hz : 60 Atm^2
- 3555 Hz : 30 Atm^2

Receiver Batteries: 9V trans. radio type batteries (4). Life: approx. 35 hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.

Transmitter Batteries: 12V 7.5Ah Gel-Cell rechargeable batteries (2 × 6V in series).

Reference Cable: Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify.

Voice Link: Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.

Indicator Lights: Built-in signal and reference warning lights to indicate erroneous readings.

Temperature Range: -40°C to +60°C (-40°F to +140°F).

Receiver Weight: 6kg (13 lbs.)

Transmitter Weight: 13kg (29 lbs.)

Shipping Weight: Typically 60kg (135 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shipping cases.

Specifications subject to change without notification.

APEX PARAMETRICS LIMITED
200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612 Cables: APEXPARA TORONTO Telex: 06-966773 NORDVIK TOR

Ontario

Ministry of
Northern Developmer
and Mines

Ministère du
Développement du Nord
et des Mines

42A01SE0174 2.10813 EBY

900

March 18, 1988

Your File: W8808-034
Our File: 2.10813

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

Dear Sir:

RE: Notice of Intent dated March 2, 1988
Geophysical (Electromagnetic) 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, Manager
Mining Lands Section
Mines and Minerals Division

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
OFFICE
MAR 30 1988
RECEIVED

Whitney Block, Room 6610
Queen's Park
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-4888

SH:pl
Enclosure: Technical Assessment Work Credits

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

Resident Geologist
Kirkland Lake, Ontario

Butte Canyon Resources Inc.
Suite 500
67 Richmond Street West
Toronto, Ontario
M5H 1Z5

Ministry of Northern Development and Mines
Ontario

Technical Assessment Work Credits

File: 2.10813

Date: March 3, 1988

Mining Recorder's Report of Work No.: W8808-034

Recorded Holder: Butte Canyon Resources Inc.

Township or ~~Area~~: Eby

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	L 735464 735596 to 598 inclusive 738544 to 548 inclusive 738577 802126 842693 to 695 inclusive 891900 to 903 inclusive 891905 to 907 inclusive 891909 980065 to 069 inclusive
Electromagnetic _____ days	
Magnetometer _____ days	
Radiometric _____ days	
Induced polarization _____ days	
Other VLF EM 17 days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ days	
Geochemical _____ 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

No credits have been allowed for the following mining claims

☒ not sufficiently covered by the survey ☐ insufficient technical data filed

L 891908

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.

Ministry of Northern Development and Mines
Ontario

Technical Assessment Work Credits

File: 2.10813

Date: March 3, 1988

Mining Recorder's Report of Work No.: W8808-034

Recorded Holder: Butte Canyon Resources Inc.

Township or ~~Area~~: Eby

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	L 735464 735596 738545 to 548 inclusive 802126 842693 to 695 inclusive 891900-01-05 891907 to 909 inclusive 980065-66-68-69
Electromagnetic 14 days	
Magnetometer ____ days	
Radiometric ____ days	
Induced polarization ____ days	
Other ____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological ____ days	
Geochemical ____ 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

No credits have been allowed for the following mining claims

☒ not sufficiently covered by the survey ☐ insufficient technical data filed

L 735597-98
738544-77
891902-03-06
980067

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.

Land Management

Ministry of Natural Resources — Ontario

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

The Mining Act

DOCUMENT No. W8808.034

2.10813

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)	Township or Area
VLF and Horizontal Loop Electromagnetic	E by Twp.

Claim Holder(s)	Prospector's Licence No.
Butte Canyon Resources Inc.	T 4886

Address: Suite 500, 67 Richmond St. W. Toronto M5H 1Z5

Survey Company	Date of Survey (from & to) Day / Mo. / Yr. / Day / Mo. / Yr.	Total Miles of line Cut
Derry Michener Booth & Wahl	15 10 87 / 30 11 87	approx 46 Km.

Name and Address of Author (of Geo-Technical report): R. Woolham 20 Richmond St. East, Toronto M5C 2R9

Credits Requested per Each Claim in Columns at right

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

Man Days		Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

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

RECEIVED
FEB 9 1988
Mining Lands Section

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
L	735464	
	735596	
	597	
	598	
	738544	
	545	
	546	
	547	
	548	
	738577	
	802126	
	892693	
	694	
	695	
	891900	
	901	
	902	
	903	
	905	
	906	
	907	
	908	
	909	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
L	980065	
	066	
	067	
	068	
	069	

Total number of mining claims covered by this report of work: 28

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. Recorded	Date Recorded	Mining Recorder
1120	Feb 9/88	M.A. Wernee
	Date Approved as Recorded	Branch Director
	See Revised Statement	

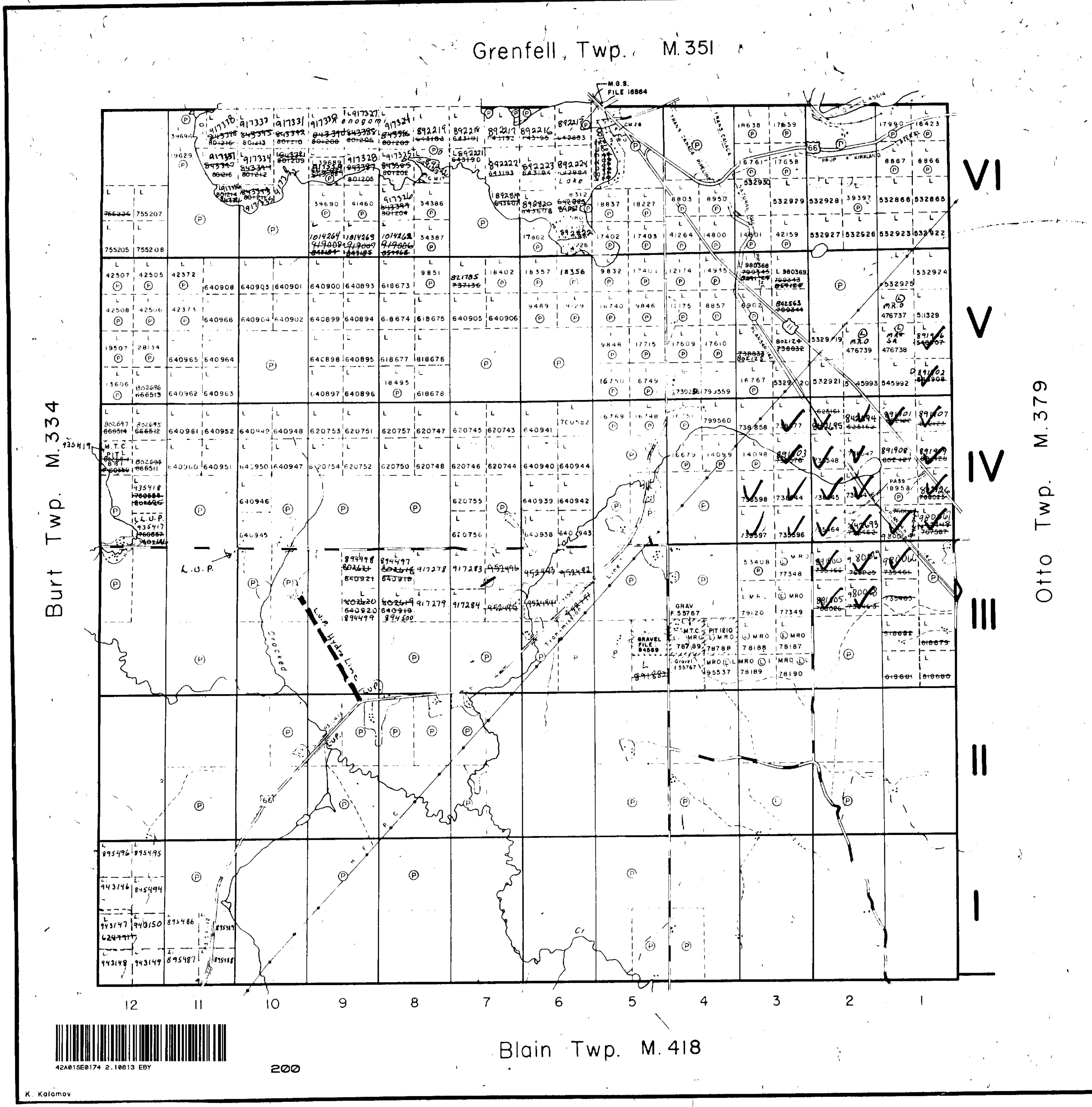
Date	Recorded Holder or Agent (Signature)
Feb. 8/88	R.W. Woolham

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: R.W. Woolham Suite 410, 20 Richmond St. East Toronto M5C 2R9

Date Certified	Certified by (Signature)
Feb 8/88	R.W. Woolham



THE TOWNSHIP OF

EBY

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	⚒
CANCELLED	C.

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

N½ 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., P0K 1T0 705-642-3222

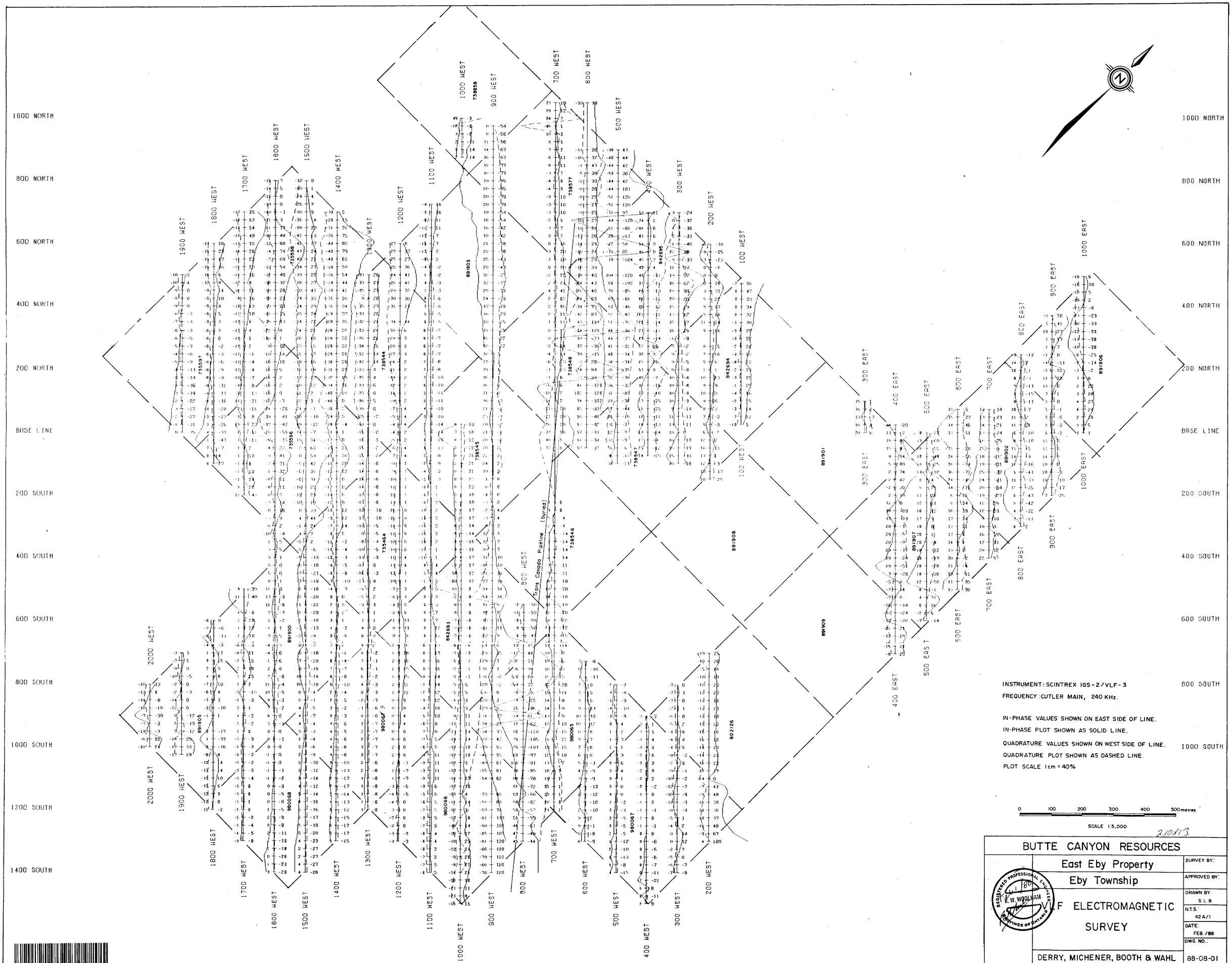
H1

PLAN NO. M-345

ONTARIO

MINISTRY OF NATURAL RESOURCES

SURVEYS AND MAPPING BRANCH



INSTRUMENT: SCINTREX IGS-2/VLF-3

FREQUENCY: CUTLER MAIN, 240 KHz.

IN-PHASE VALUES SHOWN ON EAST SIDE OF LINE.

IN-PHASE PLOT SHOWN AS SOLID LINE.

QUADRATURE VALUES SHOWN ON WEST SIDE OF LINE.

QUADRATURE PLOT SHOWN AS DASHED LINE.

PLOT SCALE 1cm = 40%

0 100 200 300 400 500 metres

SCALE 1:5,000

2.10813

BUTTE CANYON RESOURCES

East Eby Property

Eby Township

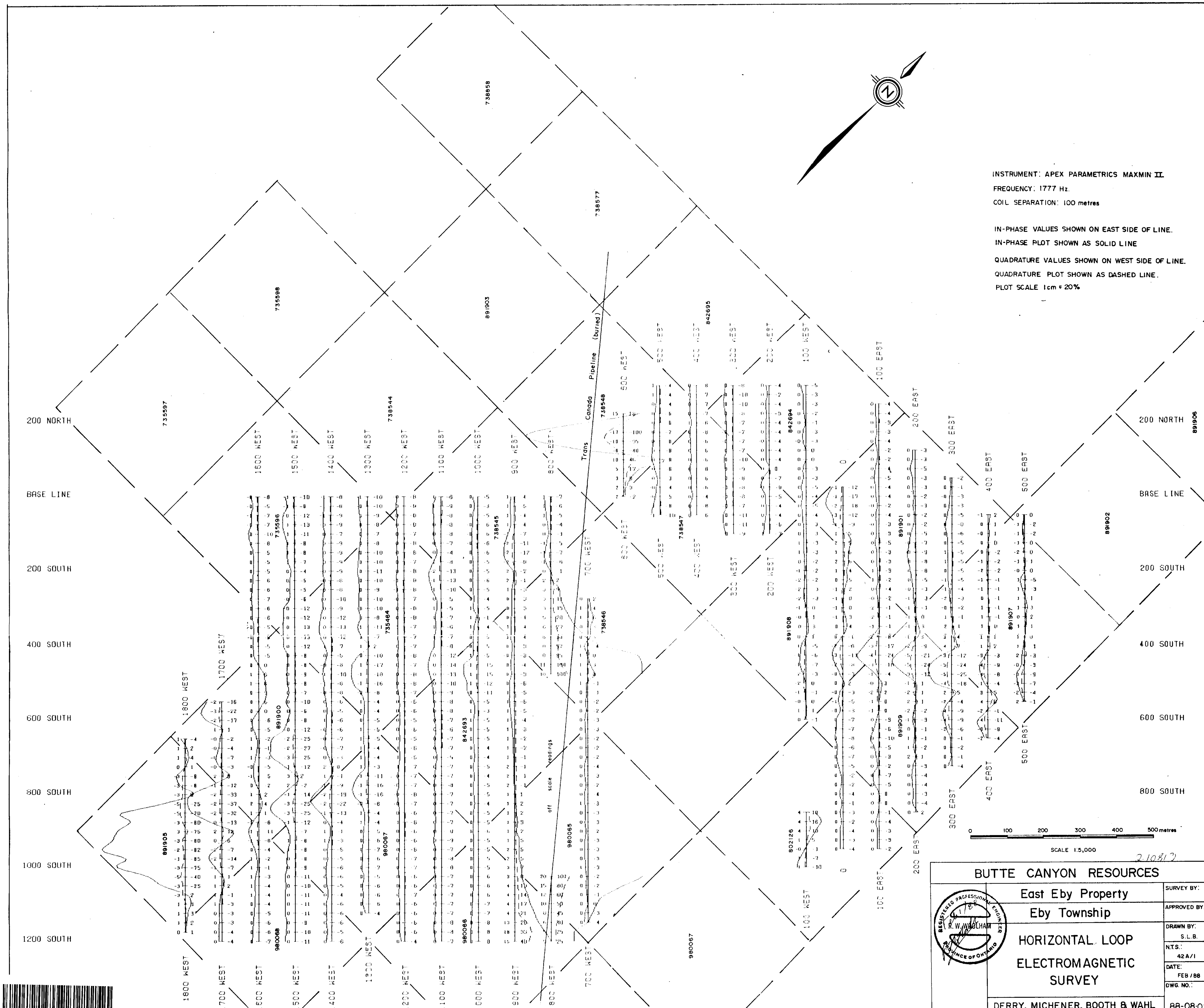
VLF ELECTROMAGNETIC SURVEY

DERRY, MICHENER, BOOTH & WAHL

SURVEY BY:	
APPROVED BY:	
DRAWN BY:	S.L.B.
N.T.S.:	42A/1
DATE:	FEB./88
DWG. NO.:	88-08-01

REGISTERED PROFESSIONAL ENGINEER R.W. WOOLHAM PROVINCE OF ONTARIO

42A01SE0174 2.10813 EBY


INSTRUMENT: APEX PARAMETRICS MAXMIN II
FREQUENCY: 1777 Hz.
COIL SEPARATION: 100 metres
IN-PHASE VALUES SHOWN ON EAST SIDE OF LINE.
IN-PHASE PLOT SHOWN AS SOLID LINE
QUADRATURE VALUES SHOWN ON WEST SIDE OF LINE.
QUADRATURE PLOT SHOWN AS DASHED LINE.
PLOT SCALE 1cm = 20%
200 NORTH
BASE LINE
200 SOUTH
400 SOUTH
600 SOUTH
800 SOUTH
1000 SOUTH
1200 SOUTH
1800 WEST
1700 WEST
1600 WEST
1500 WEST
1400 WEST
1300 WEST
1200 WEST
1100 WEST
1000 WEST
900 WEST
800 WEST
700 WEST
600 WEST
500 WEST
400 WEST
300 WEST
200 WEST
100 WEST
0
100 EAST
200 EAST
300 EAST
400 EAST
500 EAST
Trans Canada Pipeline (buried)
off scale readings
0 100 200 300 400 500 metres
SCALE 1:5,000
BUTTE CANYON RESOURCES
East Eby Property
Eby Township
HORIZONTAL LOOP
ELECTROMAGNETIC
SURVEY
DERRY, MICHENER, BOOTH & WAHL
SURVEY BY:
APPROVED BY:
DRAWN BY: S.L.B.
N.T.S.: 42 A/1
DATE: FEB / 88
DWG. NO.: 88-08-02
REGISTERED PROFESSIONAL ENGINEER
R. W. WOOLHAM
PROVINCE OF ONTARIO
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