GEOPHYSICAL REPORT

on the

THOMAS TOWNSHIP PROPERTIES

INDUCED POLARIZATION/MAGNETIC SURVEY

PORCUPINE MINING DIVISION, ONTARIO

for

BROWNSTONE RESOURCES INC.

Submitted by: R.J. Meikle
Geophysical Engineering & Surveys Inc.
March 1999

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INTRODUCTION

Brownstone Resources Inc., contracted Geophysical Engineering & Surveys Inc., of Timmins, Ontario to conduct an Induced Polarization Survey and Magnetometer Survey on their Night Hawk Lake Grid and McLeod Creek Grid, both in Thomas Township, located in the Porcupine Mining Division, Ontario.

The purpose of the surveys was to locate and deliniate weak AEM Input conductors indicated on both grids. This report describes the survey parameters used and an interpretation of the results. An interpretation report on the results of a Geotem EM survey over the properties is included as an appendix "D" in this report.

LOCATION AND ACCESS

Both the Night Hawk Lake Grid and McLeod Creek Grid are located approximately 32km east-southeast of the city of Timmins, Ontario, Thomas Township, Porcupine Mining Division (fig.2,3).

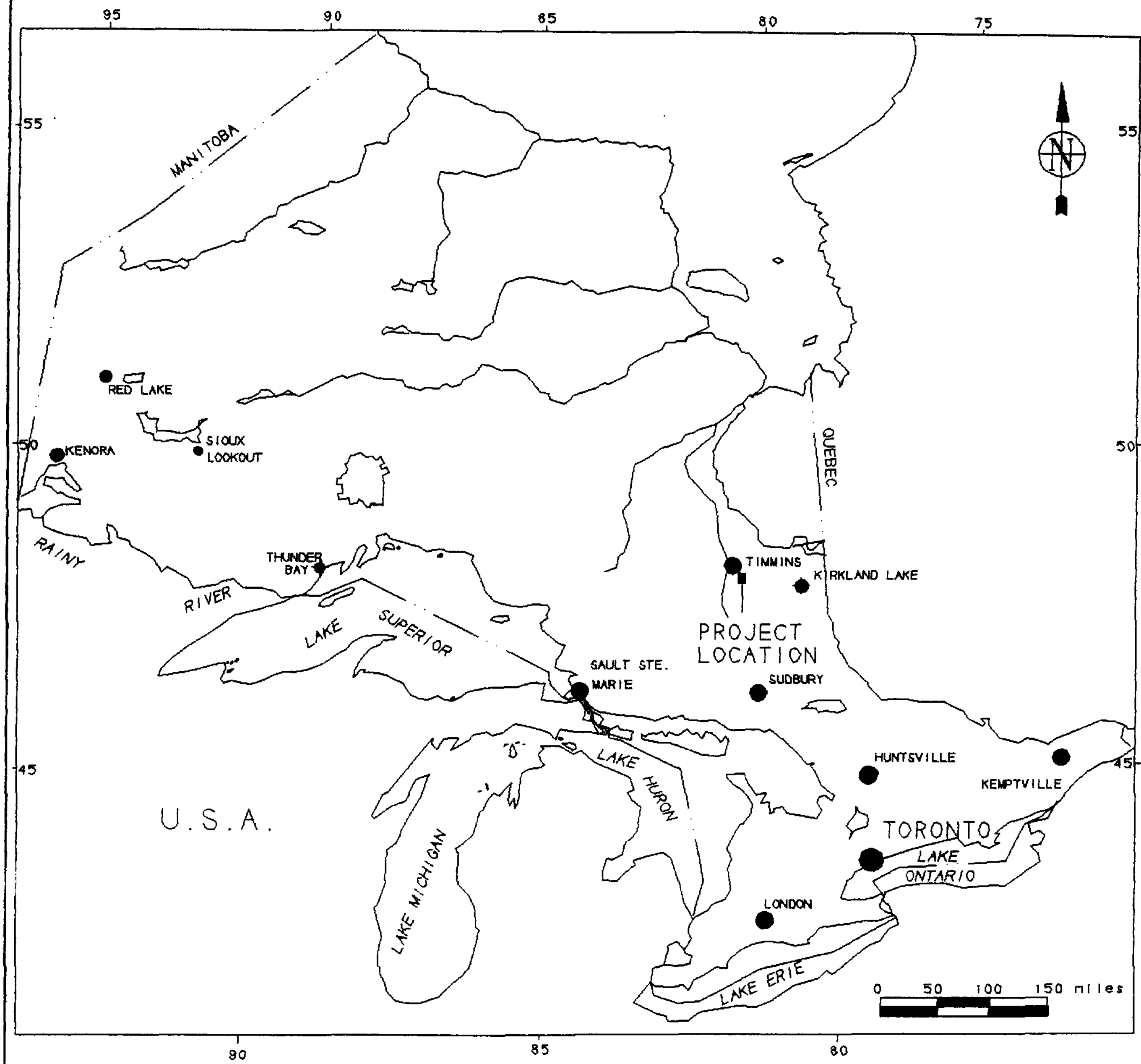
The Night Hawk Lake Grid is almost entirely on Night Hawk Lake in the southeast corner at the mouth of the Whitefish River. The McLeod Creek Grid is approximately 3.5km southeast of the Night Hawk Lake Grid.

Access to both grids is via Hwy 101E, approximately 30km, and south on Night Hawk Lake to the Night Hawk Lake Grid by snowmobile and down the Whitefish River and McLeod Creek to the other grid.

CLAIM STATUS

The Night Hawk Lake Grid is located in the northeast corner of a 16 unit, unpatented, block claim, #1214568, Thomas township, Porcupine Mining Division, Ontario (fig.3).

The McLeod Creek Grid is located within a 16 unit, unpatented, block claim, #1223582, Thomas township, Porcupine Mining Division, Ontario (fig.4).



PROVINCE OF ONTARIO

FIG 1

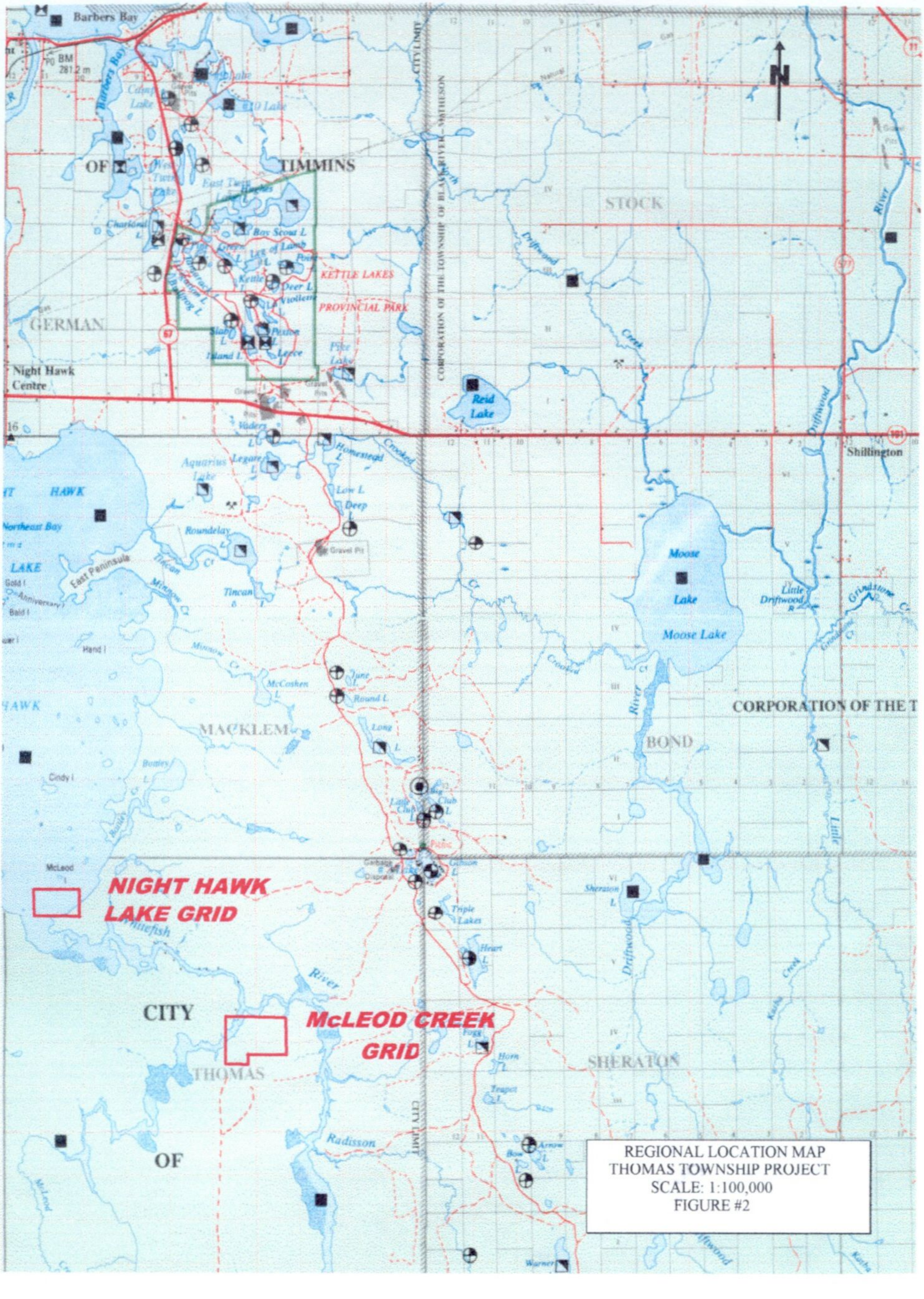
Client: BROWNSTONE RESOURCES

Property: THOMAS TOWNSHIP

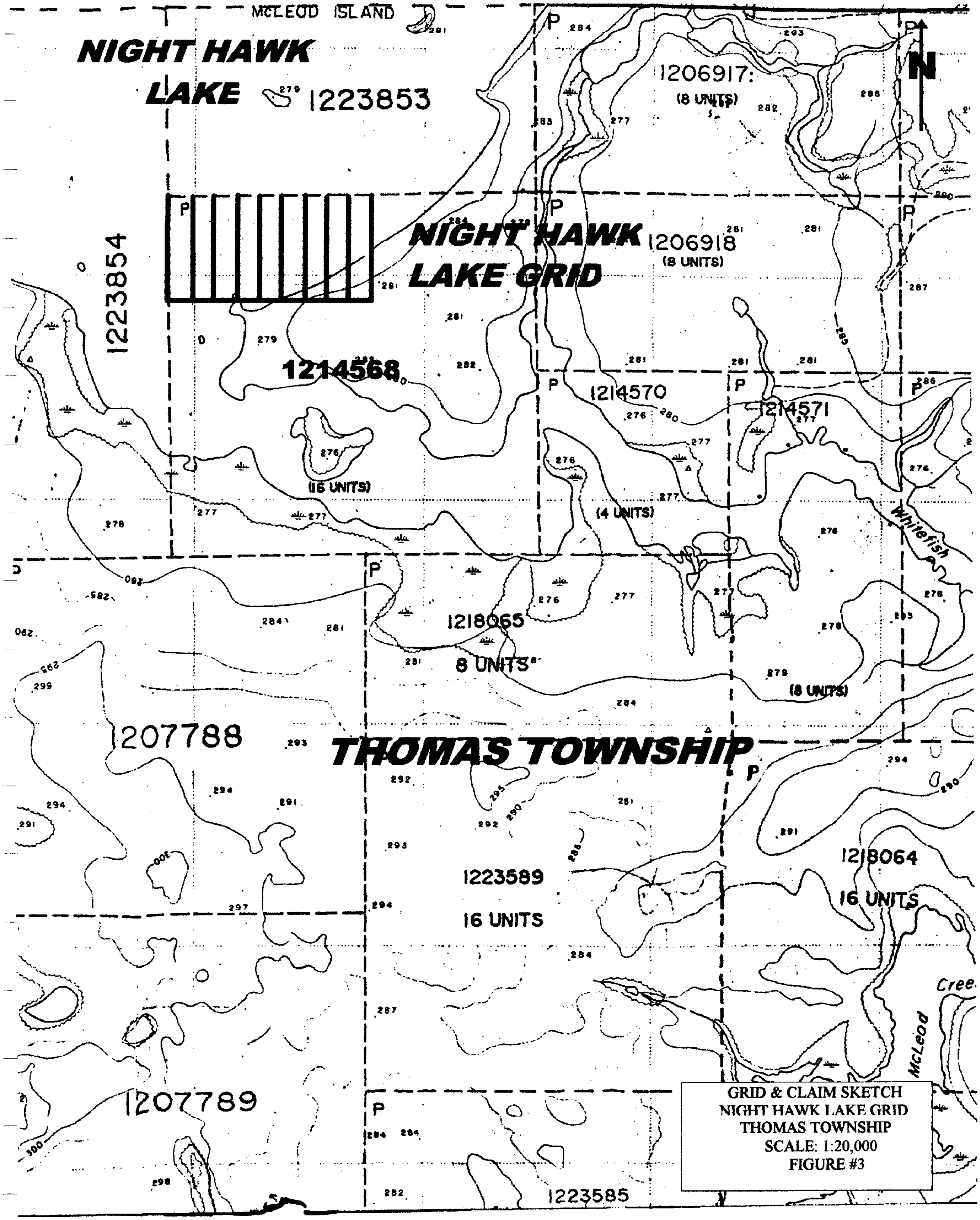
Title:

LOCATION MAP

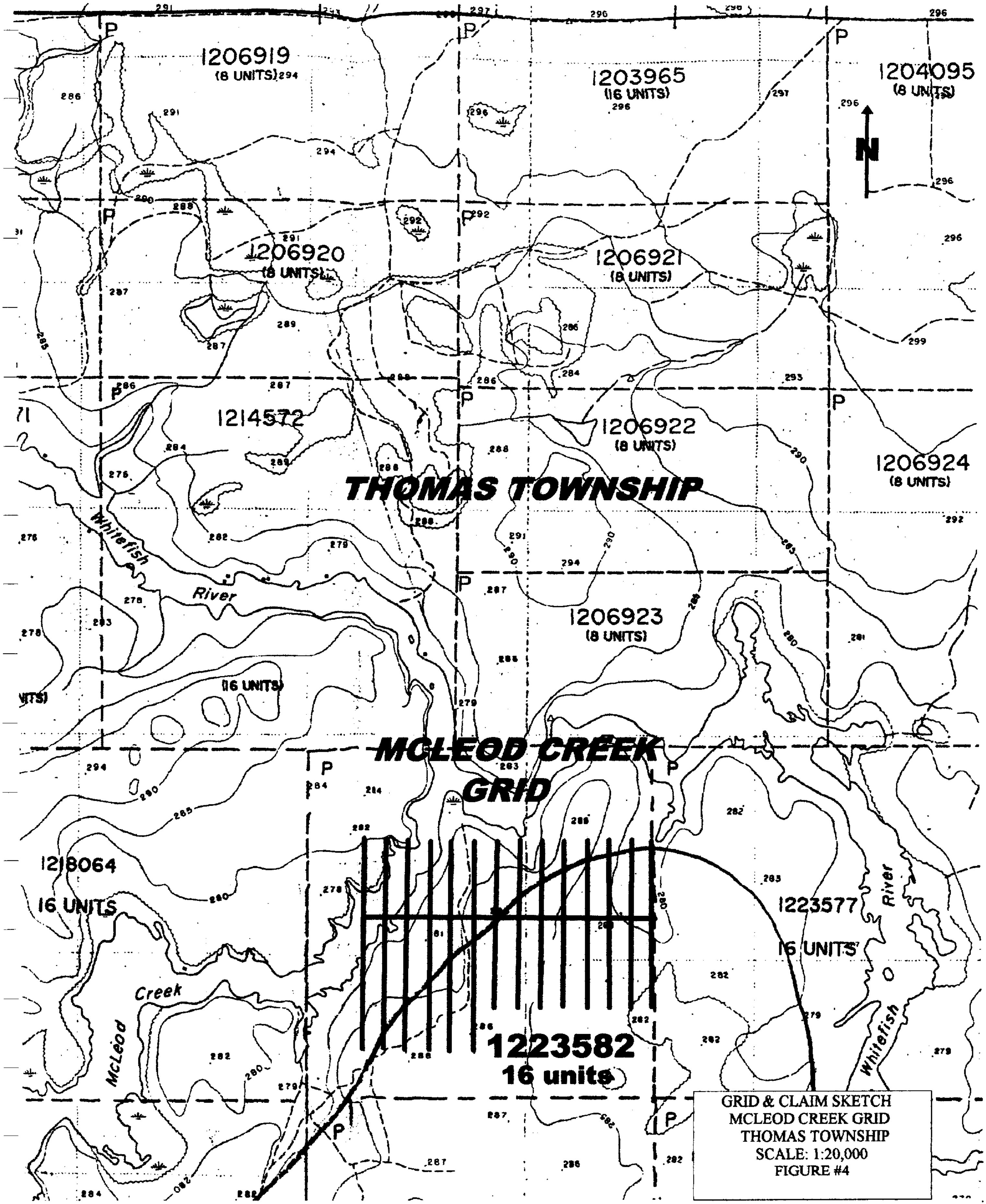
Processed: RJM	Checked: RJM	GEOPHYSICAL ENGINEERING & SURVEYS INC TIMMINS ONTARIO
Date: MARCH/99	Township: THOMAS	
Province: ONT	N.T.S.: 42A/NE	
Scale: 1 in = 1/2 mi	Drawing:	



REGIONAL LOCATION MAP
THOMAS TOWNSHIP PROJECT
SCALE: 1:100,000
FIGURE #2



GRID & CLAIM SKETCH
NIGHT HAWK LAKE GRID
THOMAS TOWNSHIP
SCALE: 1:20,000
FIGURE #3


1206919
(8 UNITS)
1203965
(16 UNITS)
1204095
(8 UNITS)
N
1206920
(8 UNITS)
1206921
(8 UNITS)
1214572
1206922
(8 UNITS)
1206924
(8 UNITS)
THOMAS TOWNSHIP
Whitefish
River
1206923
(8 UNITS)
(16 UNITS)
MCLEOD CREEK
GRID
1218064
16 UNITS
1223577
16 UNITS
Creek
McLeod
1223582
16 units
Whitefish
River
GRID & CLAIM SKETCH
MCLEOD CREEK GRID
THOMAS TOWNSHIP
SCALE: 1:20,000
FIGURE #4

PERSONNEL

The I.P./Magnetic Survey was carried out by Geophysical Engineering & Surveys Inc., Timmins, Ontario, in March,1999, using the following personnel:

R. Meikle	Timmins, Ontario
K. Giroux	Timmins, Ontario
B. Etherington	Timmins, Ontario
D. McKinnon	Timmins, Ontario
S. Polson	Timmins, Ontario
S. Anderson	Timmins, Ontario
L. Anderson	Timmins, Ontario
R. Williams	Timmins, Ontario
J. Middleton	Timmins, Ontario

GENERAL GEOLOGY

The property is located within the eastern portion of the "Abitibi Greenstone Belt". OGS map no. 2201, shows the property to be underlain by mafic volcanics. However, there is little if any outcrops on the grids.

GEOPHYSICAL PROGRAM

Linecutting

A total of 18.9 km of grid lines were established, 5.9km on the Night Hawk Lake Grid and 13.0km on the McLeod Creek Grid. A baseline azimuth of 90 deg. was used for both grids with cross lines at 100m intervals and stations every 25m.

Magnetometer Survey

All of the baselines and crosslines were covered by the magnetometer survey.

The following is a brief description of the theory and parameters of the Magnetic Survey:

MAGNETOMETER THEORY

A GEM GSM-19 Proton Precession magnetometer was used to carry out the magnetometer survey. The instrument is synchronised with an identical recording base station to help eliminate magnetic diurnal variation. This should ensure an accuracy of less than 1 Nt.

The Proton Precession method involves energising a wire coil immersed in a hydrocarbon fluid. This causes the protons in the proton rich fluid to spin or precess simulating spinning magnetic dipoles. When the current is removed the protons precess about the direction of the earth's magnetic field, generating a signal in the same coil which is proportional to the total magnetic field intensity. In this way, the horizontal gradient of the earth's magnetic field can be measured and plotted in plan form with values of equal intensity joined to form a contour map.

This presentation is useful in correlating with other data sets to aid in structural interpretation. Individual magnetic
responses can be interpreted for dip, depth and width estimates after profiling the data.

The following parameters were employed for the survey:

Instrument - GEM GSM-19 Proton Precession Magnetometer
Station Interval - 12.5m
Line Interval - 100m
Diurnal Correction Method - GSM-19 recording Base Station
Data Presentation - Posted and Contoured data
- Night Hawk Lake Grid & McLeod Creek Grid
    - 1:2500 scale
    - Contour interval = 20 nano-teslas
    - datum subtracted = 58,000 Nt

Induced Polarization Survey

The I.P. Survey was carried out on all crosslines on both grids for a total of 5.0km on the Night Hawk Lake Grid and 11.7km on the McLeod Creek Grid. A Pole-Dipole array with a 50m "a" spacing was used because of the depth and conductivity of the overburden.

The following is a brief description of the I.P. Survey Method used:

The IP method involves applying voltage across two electrodes in a pulsed manner i.e. 2 seconds on, 2 seconds off. A second "dipole" or electrode pair, measures the residual potential or voltage between them after the voltage is shut off or during the 2 second off cycle. The potential is recorded at different times after the shut off. If, for example, there is sulphide mineralization within the measuring dipoles, they will be polarized or charges set up on the sulphide particles. This polarization gives the zone a capacitor effect, thereby blocking the current delay giving a higher chargeability reading.

A typical signature for many gold showings would be a chargeability high, resistivity high and magnetic low. This would be characteristic of a mineralized, highly altered carbonated and/or silicified zone. However, this is by no means the only geological setting for gold, therefore every profile should be looked at individually and correlated with all other geophysical-geological data.

The electrode array used for the survey was the Pole-Dipole Array. In this array, one current electrode (C1) and two receiver or potential electrodes (P1,P2), are moved down a line in unison. A second current electrode (C2), is placed normal to the expected strike direction an infinite distance away, at least one km. The two current electrodes are hooked up to a motor-generator and a current applied across them, usually less than 3 amperes. The applied voltage is pulsed in a 2 second on, 2 second off pattern controlled by the transmitter.

Thus we have a single pole current electrode following a pair or dipole of potential electrodes moving down the line. The advantage of this "Pole-Dipole" array over the "Dipole-Dipole" array is a deeper current pattern between the infinite and moving current electrode, resulting in better penetration of conductive overburden. Also, this array is considerably faster in areas of high electrode contact impedance due to frozen and or rocky ground conditions because only one current electrode placement is needed for each reading. A disadvantage of the "Pole-Dipole" array is a slightly more ambiguous interpretation due to the isometry of the array.

The distance between the potential electrodes is fixed, usually 25 or 50 meters and this is called the "a" spacing. When the potential dipole is positioned with one "a" spacing between the C1 and the nearest P1, it is called a "N=1" reading with a theoretical plot point at the intersection of a 45 degree line drawn down in a section format from the C1 and nearest P1. When this N=1 reading is finished, the C1 remains stationary and the P1P2 dipole moves ahead one "a" spacing and a N=2 reading is obtained. Using the above plot convention it can be seen that the plot point is now further from the C1 and deeper. This is repeated for as many "N" readings as desired.

I.P. Survey Parameters

The IP survey was carried out using the following parameters:

Method: Time Domain
Electrode Array: Pole-Dipole
"a" spacing: 50 meters
Number of Dipoles Read: 1-5 inclusive
Pulse Duration: 2 seconds on, 2 seconds off
Delay Time: 310 milliseconds
Integration Time: 140 milliseconds
Receiver: Scintrex IPR-12
Transmitter: Scintrex TSQ-3 3KVA.
Data Presentation: Individual Psuedosections
Night Hawk Lake Grid - Plates 1 of 1, 1:2500
- Filtered Chargeability &
Resistivity Plan Map. 1:2500
McLeod Creek Grid - Plates 1,2,3, 1:2500
- Filtered Chargeability &
Resistivity Plan Map 1:2500

SURVEY RESULTS

NIGHT HAWK LAKE GRID

The magnetometer survey shows the northern two-thirds of the grid to have a lower magnetic susceptibility. There is a magnetic high on L0e/3600n, open to the west, with a coincident resistivity low. The other significant feature outlined is a narrow, east-west linear magnetic high on L5e,L6e/3550n.

The I.P. Survey did not outline any chargeability anomalies. The background chargeability is quite low, however, the resistivities indicate that the survey did penetrate to bedrock.

The west end of the grid has a lower apparent resistivity background, possibly indicating the edge of a thicker clay sheet. This area is in the mouth of the Whitefish River. There was little to no water in the majority of the holes drilled through the ice and in the southwest part of the grid, bedrock was encountered immediately below the iced in some holes. This made electrode contact difficult, resulting in some noisy data as indicated on the psuedosections.

MCLEOD CREEK GRID

The magnetometer survey on the McLeod Creek Grid outlined several anomalous features described below:

A northwest trending magnetic high is outlined on L45e to L48e at approximately 600n. It appears to be on the south edge of a broad resistivity low.

There is a strongly magnetic "bullseye" anomaly centered on L54e/900n, within an area of high resistivity.

The magnetic susceptibility is higher on the northeast part of the grid.

There are several isolated, weak, magnetic highs, some with a north south trend.

There is no significant chargeability anomalies indicated. There are several areas of slightly higher background, most of which are coincident with higher resistivities.

RECOMMENDATIONS AND CONCLUSIONS

Results of the I.P./Magnetometer Survey do not indicate any anomalies correlating with the weak AEM Input anomalies. One possible explanation for the AEM conductors could be current channelling at the edge of conductive clay sheets. There are areas on both grids with a significant resistivity contrast especially on the shallower dipoles which could conducive to the above phenomena.

If the weak AEM conductors are considered to be legitimate bedrock responses, it is recommended that a Deep EM Time Domain survey be carried out. This survey should be best suited to match the airborne EM method and would provide an effective method of looking deeper. One transmitter loop would be sufficient for each grid.

CERTIFICATION

I, Raymond Joseph Meikle of Timmins, Ontario hereby certify that:

1. I hold a three year Technologist Diploma from the Haileybury School of Mines, Haileybury, Ontario, obtained in May 1975.

2. I have been practising my profession since 1973 in Ontario, Quebec, Nova Scotia, New Brunswick, Newfoundland, NWT, Manitoba, Germany and Chile.

3. I have been employed directly with Teck Corporation, Metallgessellschaft Canada Ltd. Sabina Industries, .S. Middleton Exploration Services Ltd., self employed 1979-1997 (Rayan Exploration Ltd.) and currently with Geophysical Engineering & Surveys Inc.

4. I have based conclusions and recommendations contained in this report on knowledge of the area, my previous experience and on the results of the field work conducted on the property during 1999.

5. I hold no interest, directly or indirectly in this property, nor do I expect to receive any interest or considerations from the property, other than for professional fees rendered.

Dated this 21st day of March,1999
at Timmins, Ontario.

R.J. Meikle

APPENDIX A

SCINTREX IPR-12 RECEIVER

SCINTREX

IPR-12 Time Domain Induced Polarization/Resistivity Receiver

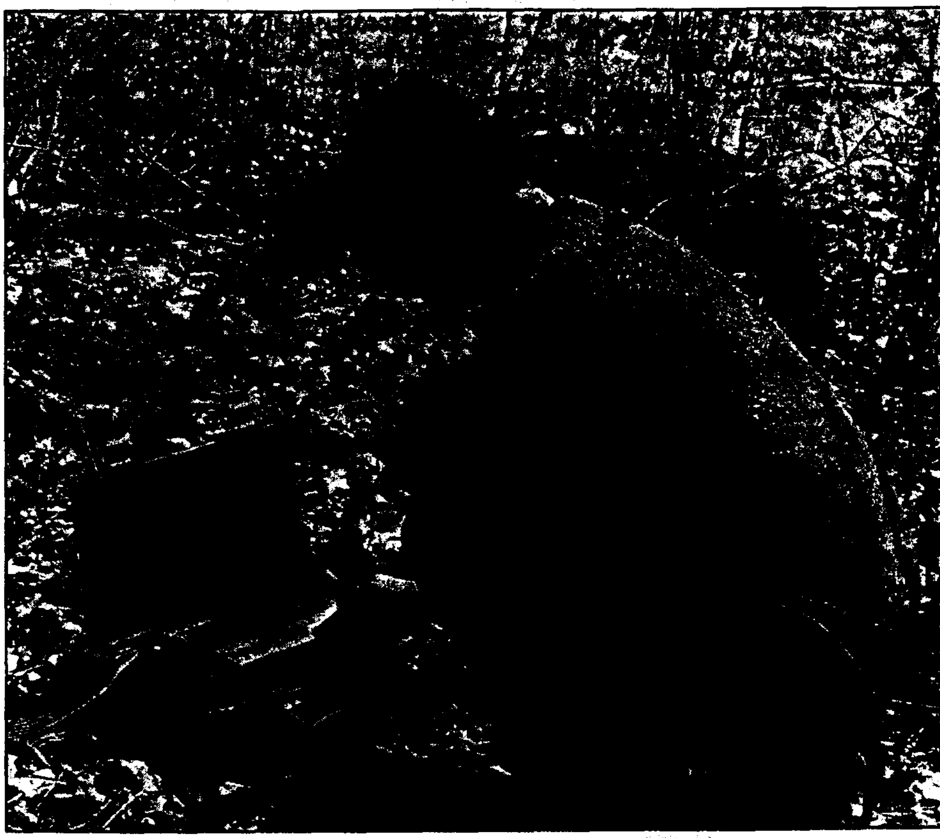
Brief Description

The IPR-12 Time Domain IP/Resistivity Receiver is principally used in exploration for precious and base metal mineral deposits. In addition, it is used in geoelectrical surveying for groundwater or geothermal resources, often to great depths. For these latter targets, the induced polarization measurements may be as useful as the high accuracy resistivity results since it often happens that geological materials have IP contrasts when resistivity differences are absent.

Due to its integrated, lightweight, microprocessor based design and its large, 16 line display screen, the IPR-12 is a remarkably powerful, yet easy to use instrument. A wide variety of alphanumeric and graphical information can be viewed by the operator during and after the taking of readings. Signals from up to eight potential dipoles can be measured simultaneously and recorded in solid-state memory along with automatically calculated parameters. Later, data can be output to a printer or a PC (direct or via modem) for processing into profiles and maps.

The IPR-12 is compatible with Scintrex IPC and TSQ Transmitters, or others which output square waves with equal on and off periods and polarity changes each half cycle. The IPR-12 measures the primary voltage (Vp), self potential (SP) and time domain induced polarization (Mi) characteristics of the received waveform. Resistivity, statistical and Cole-Cole parameters are calculated and recorded in memory with the measured data and time.

Scintrex has been active in induced polarization research, development, manufacturing, consulting and surveying for over thirty years. We offer a full range of instrumentation, accessories and training.



The IPR-12 Receiver measures spectral IP signals from eight dipoles simultaneously then records measured and calculated parameters in memory.

Benefits

Speed Up Surveys

The IPR-12 saves you time and money in carrying out field surveys. Its capacity to measure up to eight dipoles simultaneously is far more efficient than older receivers measuring a single dipole. This advantage is particularly valuable in drillhole logging where electrode movement time is minimal.

The built-in, solid-state memory records all information associated with a reading, dispensing with the need for any hand written notes. PC compatibility means rapid electronic transfer of data from the receiver to a computer for rapid data processing.

Taking a reading is simple and fast. Only a few keystrokes are virtually needed since the IPR-12 features automatic circuit resistance checks, SP buckout and gain setting.

High Quality Data

One of the most important features of the IPR-12 in permitting high quality data to be acquired, is the large display screen which allows the operator easy real time access to graphic and alphanumeric displays of instrument status and measured data. The IPR-12 ensures that the operator obtains accurate data from field work.

The number and relative widths of the IP decay curve windows have been carefully chosen to yield the transient information required for proper interpretation of spectral IP data. Timings are selectable to permit a very wide range of responses to be measured.

Specifications

Inputs
1 to 8 dipoles are measured simultaneously.

Input Impedance
16 Megohms

SP Bucking
±10 volt range. Automatic linear correction operating on a cycle by cycle basis.

Input Voltage (Vp) Range
50 µvolt to 14 volt

Chargeability (M) Range
0 to 300millivolt

Tau Range
1 millisecond to 1000 seconds

Reading Resolution of Vp, SP and M
Vp, 10 microvolt; SP, 1 millivolt; M, 0.01 millivolt/volt

Absolute Accuracy of Vp, SP and M
Better than 1%

Common Mode Rejection
At input more than 100db

Vp Integration Time
10% to 80% of the current on time.

IP Transient Program
Total measuring time keyboard selectable at 1, 2, 4, 8, 16 or 32 seconds. Normally 14 windows except that the first four are not measured on the 1 second timing, the first three are not measured on the 2 second timing and the first is not measured on the 4 second timing. (See diagram on page 2.) An additional transient slice of minimum 10 ms width, and 10ms steps, with delay of at least 40 ms is keyboard selectable.

Transmitter Timing
Equal on and off times with polarity change each half cycle. On/off times of 1, 2, 4, 8, 16 or 32 seconds. Timing accuracy of ±100 ppm or better is required.

External Circuit Test
All dipoles are measured individually in sequence, using a 10 Hz square wave. The range is 0 to 2 Mohm with 0.1kohm resolution. Circuit resistances are displayed and recorded.

Synchronization
Self synchronization on the signal received at a keyboard selectable dipole. Limited to avoid mistriggering.

Filtering
RF filter, 10 Hz 6 pole low pass filter, statistical noise spike removal.

Internal Test Generator
1200 mV of SP; 807 mV of Vp and 30.28 mV/V of M.

Analog Meter
For monitoring input signals; switchable to any dipole via keyboard.

Keyboard
17 key keypad with direct one key access to the most frequently used functions.

Display
16 lines by 42 characters, 128 x 256 dots, Backlit Liquid Crystal Display. Displays instrument status and data during and after reading. Alphanumeric and graphic displays.

Display Heater
Available for below -15°C operation.

Memory Capacity
Stores approximately 400 dipoles of information when 8 dipoles are measured simultaneously.

Real Time Clock
Data is recorded with year, month, day, hour, minute and second.

Digital Data Output
Formatted serial data output for printer and PC etc. Data output in 7 or 8 bit ASCII, one start, one stop bit, no parity format. Baud rate is keyboard selectable for standard rates between 300 baud and 51.6 kBaud. Selectable carriage return delay to accommodate slow peripherals. Handshaking is done by X-on/X-off.

Standard Rechargeable Batteries
Eight rechargeable Ni-Cad D cells. Supplied with a charger, suitable for 110/230V, 50 to 60 Hz, 10W. More than 20 hours service at +25°C, more than 8 hours at -30°C.

Ancillary Rechargeable Batteries
An additional eight rechargeable Ni-Cad D cells may be installed in the console along with the Standard Rechargeable Batteries. Used to power the Display Heater or as back up power. Supplied with a second charger. More than 6 hours service at -30°C.

Use of Non-Rechargeable Batteries
Can be powered by D size Alkaline batteries, but rechargeable batteries are recommended for longer life and lower cost over time.

Operating Temperature Range
-30°C to +50°C

Storage Temperature Range
-30°C to +50°C

Dimensions
Console: 355 x 270 x 165 mm
Charger: 120 x 95 x 55mm

Weights
Console: 5.8 kg
Standard or Ancillary Rechargeable Batteries: 1.3 kg
Charger: 1.1 kg

Transmitters available

IPC-9	200 W
TSQ-2E	750 W
TSQ-3	3 kW
TSQ-4	10 kW

SCINTREX

In Canada

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Canada, L4K 1B5

Tel.: (905) 669-2280
Fax: (905) 669-6403
Telex: (905) 06-964570

In the U.S.A.

85 River Rock Drive
Unit # 202
Buffalo, N.Y.
U.S.A. 14207

Tel.: (716) 298-1219
Fax: (716) 298-1317

IPR-12/94

APPENDIX B

SCINTREX TSQ-3 TRANSMITTER

SCINTREX TSQ-3 3000 W

Time and Frequency Domain IP and Resistivity Transmitter

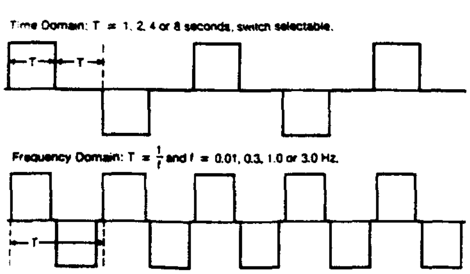
Function

The TSQ-3 is a multi-frequency, square wave transmitter suitable for induced polarization and resistivity measurements in either the time or frequency domain. The unit is powered by a separate motor-generator.

The favourable power/weight ratio and compact design of this system make it portable and highly versatile for use with a wide variety of electrode arrays. The medium range power rating is sufficient for use under most geophysical conditions.

The TSQ-3 has been designed primarily for use with the Scintrex Time Domain and Frequency Domain Receivers, for combined induced polarization and resistivity measurements, although it is compatible with most standard time domain and frequency domain receivers. It is also compatible with the Scintrex Commutated DC Resistivity Receivers for resistivity surveying. The TSQ-3 may also be used as a very low frequency electromagnetic transmitter.

Basically the transmitter functions as follows. The motor turns the generator (alternator) which produces 800 Hz, three phase, 230 V AC. This energy is transformed upwards according to a front panel voltage setting by a large transformer housed in the TSQ-3. The resulting AC is then rectified in a rectifier bridge. Commutator switches then control the DC voltage output according to the waveform and frequency selected. Excellent output current stability is ensured by a unique, highly efficient technique based on control of the phase angle of the three phase input power.



Waveforms output by the TSQ-3

Features

Current outputs up to 10 amperes, voltage outputs up to 1500 volts, maximum power 3000 VA.

Solid state design for both power switching and electronic timing control circuits.

Circuit boards are removable for easy servicing.

Switch selectable wave forms: square wave continuous for frequency domain and square wave interrupted with automatic polarity change for time domain.

Switch selectable frequencies and pulse times.

Overload, underload and thermal protection for maximum safety.

Digital readout of output current.

Programmer is crystal controlled for very high stability.

Low loss, solid state output current regulation over broad range of load and input voltage variations.

Rectifier circuit is protected against transients.

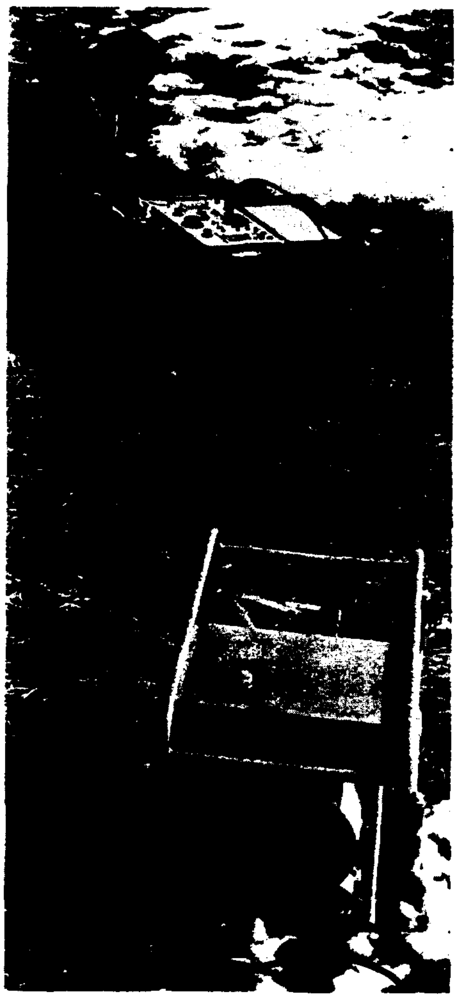
Excellent power/weight ratio and efficiency.

Designed for field portability; motor-generator is installed on a convenient frame and is easily man-portable. The transmitter is housed in an aluminum case.

The motor-generator consists of a reliable Briggs and Stratton four stroke engine coupled to a brushless permanent magnet alternator.

New motor-generator design eliminates need for time domain dummy load.

Technical Description of TSQ-3/3000W Time and Frequency Domain IP and Resistivity Transmitter



TSQ-3 transmitter with portable motor generator unit

Transmitter Console	
Output Power	3000 VA maximum
Output Voltages	300, 400, 500, 600, 750, 900, 1050, 1200, 1350 and 1500 volts, switch selectable
Output Current	10 amperes maximum
Output Current Stability	Automatically controlled to within ±0.1% for up to 20% external load variation or up to ±10% input voltage variation
Digital Display	Light emitting diodes permit display up to 1999 with variable decimal point; switch selectable to read input voltage, output current, external circuit resistance. Dual current range, switch selectable
Absolute Accuracy	±3% of full range
Current Reading Resolution	10 mA on coarse range (0-10A) 1 mA on fine range (0-2A)
Frequency Domain Waveform	Square wave, continuous with approximately 6% off time at polarity change
Frequency Domain Frequencies	Standard: 0.1, 0.3, 1.0 and 3.0 Hz, switch selectable Optional: any number of frequencies in range 0 to 5 Hz.
Time Domain Cycle Timing	t:t:t:t;on:off:on:off;automatic
Time Domain Polarity Change	each 2t; automatic
Time Domain Pulse Durations	Standard: t = 1, 2, 4 or 8 seconds Optional: any other timings
Time and Frequency Stability	Crystal controlled to better than .01%
Efficiency	.78
Operating Temperature Range	−30°C to +50°C
Overload Protection	Automatic shut-off at 3300 VA
Underload Protection	Automatic shut-off at current below 75mA
Thermal Protection	Automatic shut-off at internal temperature of +85°C
Dimensions	350 mm x 530 mm x 320 mm
Weight	25.0 kg.
Power Source	
Type	Motor flexibly coupled to alternator and installed on a frame with carrying handles.
Motor	Briggs and Stratton, four stroke, 8 H.P.
Alternator	Permanent magnet type, 800 Hz, three phase 230 V AC
Output Power	3500 VA maximum
Dimensions	520 mm x 715 mm x 560 mm
Weight	72.5 kg
Total System	
Shipping Weight	150 kg includes transmitter console, motor generator, connecting cables and re-usable wooden crates

SCINTREX

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Telephone: (416) 669-2280
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Telex: 06-964570

Geophysical and Geochemical Instrumentation and Services

APPENDIX C

GEM SYSTEMS

GSM-19 PROTON MAGNETOMETER

Instrument Specifications

Magnetometer / Gradiometer

Resolution:	0.01 nT (gamma), magnetic field and gradient.
Accuracy:	0.2 nT over operating range.
Range:	20,000 to 120,000 nT.
Gradient Tolerance:	Over 10,000 nT/m
Operating interval:	3 seconds minimum, faster optional. Readings initiated from keyboard, external trigger, or carriage return via RS-232-C.
Input/Output:	6 pin weatherproof connector, RS-232C, and (optional) analog output.
Power Requirements:	12 V, 200 mA peak (during polarization), 30 mA standby. 300mA peak in gradiometer mode.
Power Source:	Internal 12 V, 2.6 Ah sealed lead-acid battery standard, others optional. An External 12V power source can also be used.
Battery Charger:	**Input:** 110 VAC, 60 Hz. Optional 110/220 VAC, 50/60 Hz. **Output:** dual level charging.
Operating Ranges:	Temperature: **-40 °C to +60 °C.** Battery Voltage: **10.0 V minimum to 15V maximum.** Humidity: **up to 90% relative, non condensing.**
Storage Temperature:	-50°C to +65°C
Display:	**LCD**: 240 x 64 pixels, or 8 x 30 characters. Built in heater for operation below -20°C
Dimensions:	**Console:** 223 x 69 x 240mm. **Sensor staff:** 4 x 450mm sections. **Sensor:** 170 x 71mm dia. **Weight:** Console 2.1kg, Staff 0.9kg, Sensors 1.1kg each.

VLF

Frequency Range:	15 - 30.0 kHz.
Parameters Measured:	Vertical In-phase and Out-of-phase components as percentage of total field. 2 components of horizontal field. Absolute amplitude of total field.
Resolution:	0.1%.
Number of Stations:	Up to 3 at a time.
Storage:	Automatic with: time, coördinates, magnetic field/gradient, slope, EM field, frequency, in- and out-of-phase vertical, and both horizontal components for each selected station.
Terrain Slope Range:	0° - 90° (entered manually).
Sensor Dimensions:	14 x 15 x 9 cm. (5.5 x 6 x 3 inches).
Sensor Weight:	1.0 kg (2.2 lb).

APPENDIX D

GEOTEM EM SURVEY INTERPRITATION REPORT
BY: ROBERT J. de CARLE

3. AIRBORNE GEOPHYSICS

3.1 Introduction

The results of a GEOTEM EM survey over Brownstone Resources' claim block, which was flown by Geoterrex Limited in 1987 for the Ontario Geological Survey (O.G.S.) as part of a larger Timmins Area survey, will be the subject for a discussion in this section. A total of 50.4 kilometres of airborne survey are contained within this claim block, which is located in Thomas Township, southeast of Timmins, Ontario.

A complete analysis of all electromagnetic responses within the claim block, including all of the weaker anomalies that never did get on the final published maps, will be undertaken. All of these weaker anomalies have been plotted on the enclosed re-interpreted O.G.S. GEOTEM EM map of Thomas Township, along with the original anomalies.

A full interpretation of all electromagnetic anomalies will be carried out, including location of conductor axes, direction and amount of dip (if possible), and depth estimate to the top of the conductors.

A table summarizing the characteristics of all EM responses within the claim block, as well as prioritizing the potential bedrock conductors for further follow-up is given.

3.2 SYSTEM PARAMETERS

3.2.1 Platform

Aircraft:	CASA C-212 STOL twin engine
Survey speed:	120 knots (approximately 62 m/s)
Flying height:	Nominal terrain clearance of 120 m.

3.2.2 GEOTEM® system

Base frequency:	90 Hz.
Pulse width:	1050 μs
Pulse delay:	300 μs
Off-time:	3414 μs
Transmitter:	vertical axis loop of 232 m^2,
	number of turns: 3,
	current of 650 amperes,

	dipole moment of 4.5 x 10^5 Am^2
Receiver:	nominal height above ground of 40 metres.
	1 horizontal axis coils (x)
	final recording rate of 4 samples/sec, for full waveform recording of 12 channels of x coil data, gate centers in the off-time (in milliseconds from the end of the pulse

channel 1:	350	channel 11:	1680
channel 2:	450	channel 12:	1870
channel 3:	550		
channel 4:	670		
channel 5:	790		
channel 6:	910		
channel 7:	1050		
channel 8:	1110		
channel 9:	1350		
channel 10:	1510		

3.2.3 Magnetometer

Type: CS-2 cesium vapour, towed-bird installation

Sensitivity: 0.01 nT

Sample rate: continuous

Height above ground: 75 metres

3.2.4 Navigation equipment

GPS receiver: Sercel NR103 10-channel receiver, linked to the OMNISTAR real-time differential network.

Video camera: Panasonic VHS

3.2.5 Acquisition system

MADACS system, DOS 486 based, recording to disk and transferred to the field processing system via removable hard disk. Real-time analogue display of multichannel data (software selectable) on a RMS GR33a-1 heat-sensitive graphic recorder.

3.2.6 Base station equipment

Magnetometer: Cesium vapour, sampling at 1 sec and 0.01 nT sensitivity

GPS receiver: Sercel NR103 10-channel receiver

Digital acquisition: DOS 386 laptop

Analogue display: ink jet printer

3.3 GEOTEM INTERPRETATION

There were a number of new electromagnetic responses intercepted within the claim block that never did get on the final published map by the O.G.S. However, many of them do exhibit low conductances. Because of the generally high conductivity and the thickness of the overlying Quaternary clay sequences, some of the primary electromagnetic field being transmitted from the GEOTEM system will be lost in the overlying clays, thus inhibiting somewhat the secondary effects from any deeper seated bedrock conductors, particularly with any weaker bedrock conductors.

The surficial materials within almost the entire claim block are highly conductive and would seem to indicate the nature of the overlying glaciolacustrine deposits of massive to varved silt and clay. They are perhaps thicker throughout the central region of the block, where Whitefish River is located. There is also a region of similar conductivity near the west end of the block, in Nighthawk Lake, where again the surficial materials have been described as being Barlow-Ojibway Formation massive to varved silt and clay.

Because of the nature of the mineralization within some conductors (sphalerite) in the region, one would expect a rather poor EM response over some of these targets. The present exercise is to interpret the X-coil data and if possible, to discriminate between the conductive overburden cover and any bedrock conductors. Of importance in this area, will be weak, steeply dipping conductors, with EM responses that exhibit sharp EM profiles.

This process involved the line-by-line assessment of the data set, assigning conductor axes, direction and amount of dip where possible.
A conductor axis has been assigned a solid line where the location of the interpreted conductor should be found on the ground. A dotted axis is one where the exact location of the conductor is unknown, although the conductor is still believed to be bedrock related.

The GEOTEM EM system, as with the INPUT EM system, produces characteristic EM responses, both for vertical and dipping conductors for the X-coil. For the former, two peaks are noted with a ratio between the first and second of approximately 1:10. This phenomenon will be seen regardless of the flight direction.

With respect to a dipping conductor, the first peak becomes larger compared to the second peak, with a flattening of the dip. With a flat-lying conductor, the total EM response is related to the first peak, with very little or no second peak.

The depth estimates were based on a Vertical 600m x 300m Plate nomogram, 90 Hz/2ms configuration, which was used for this airborne survey. Amplitudes for a few of the anomalies were established and then on a best fit basis, a depth was estimated. It should be understood that these depth estimates are approximate and are probably within 20% of the actual depth.

There would also appear to be a direct relationship between the changes in altitude of the aircraft, with the impending effects from the conductive overburden. As the aircraft becomes closer to the ground, a stronger secondary field is received in the bird. Conversely, the higher the aircraft is from the conductive clays, the more the EM traces go back to background. One only has to look at the EM analog charts to see the results of this phenomenon.

There were three (3) short, isolated, potential bedrock conductors intercepted, each displaying poor to very poor conductivity. Each of them does not have direct magnetic correlation, which would preclude iron formation as being a source. They tend to be either located on the flanks of magnetic features, suggesting the relationship with geological contacts, or with magnetic lows.

The attitudes of most conductors are generally towards the north at a steep to almost vertical angle. One area in particular, towards the eastern region of the claim block, the direction of dip may be towards the south.

The following is a table briefly summarizing some of the characteristics for each of the EM responses within the claim block.

Flight Line	Anomaly	Comments
3440	h	could be a dip indicator to k (south dip?)
	k	very poor conductivity, fast decay rate
	m	poor conductivity, a very subtle magnetic anomaly associated with the conductor, near a contact
3450	AK	would appear to be bedrock related, 3 siemens, near contact, a subtle magnetic feature to the south (100 nanoTeslas)
3460	A	could be a dipping (north?) bedrock conductor,located within a magnetic low
3460/5	a	very poor conductivity, probably lake bottom sediments,
	b	anomaly somewhat sharper, although decay rate fall-off is fast. It could be correlating with 3450AK.
3470	b	very poor conductivity, probably lake bottom sediments
	c,d	very poor conductivity, could be corresponding to conductive river bottom sediments from Whitefish River.
3480B	B	this anomaly exhibits fair to poor conductivity, with no magnetic association. The EM profile is reasonably sharp, suggesting a possible bedrock source.
	m,n	probably conductive overburden
3490/5	a,b,c,d	probably conductive overburden
3500	B	exhibits fair to poor conductivity, no magnetic association, could be dipping to the north
	p	could be conductive overburden, associated with the Whitefish River
	r,s	conductive overburden
3510/2	b,c,d,e	conductive overburden
3520	s	could be bedrock related, although the decay rate is very

		fast, no magnetic association
	t,u,v	conductive overburden
3530	e,f,g	conductive overburden
3540	h,j	conductive river bottom sediments
3550	d,e	conductive river bottom sediments
3560	r,s,t,u,v,w	conductive overburden
3570	c,d,e,f	conductive overburden, f has a little sharper EM profile
3580	q,r,s,t	conductive overburden
3590	c,d,e,f	conductive overburden, d is correlating with Whitefish River
3600	e,f,g,h	conductive overburden
3610	d	conductive overburden
3610/4	e	conductive overburden
	f	could be a very weak bedrock conductor
3620	s	conductive overburden
3620/3	q,r	could be a poor bedrock conductor
3630/3	d,e,f	conductive overburden
	g	could be bedrock related, a slower decay rate, indicating fair conductivity. There is a magnetic feature associated with the conductor.
3640	p,q,r,s,t,u	conductive overburden
3650		no data
3660	p,q,r,s	r may be a poor bedrock conductor, although it is located near the Whitefish River
3670	b,c,d,e,f,g	conductive overburden
3680	p,q,r	conductive overburden. p probably caused by lower aircraft.
3690	g,h,k,m	conductive overburden
3700	m,n,p	conductive overburden
3710	h,k,m	conductive overburden
3720	m,n,p	conductive overburden

Three (3) zones, which have potential for being bedrock related conductors within the claim block, have been outlined on the enclosed map. Of the three zones, Conductor A exhibits the best EM response, as it would appear to be bedrock related. Although it is located within Nighthawk Lake, a trough of highly conductive clay within the lake bottom could also be the source. However, most EM responses within the lake are less than 1 siemen, while Conductor A has 3 siemens.

Conductor B is not considered to be as attractive as either Conductors A or C. Its location with respect to the Whitefish River suggests a wide, thick source, with the outlined conductor axis on the map being the northern edge. Conductor C exhibits a slight improvement in the EM response, suggesting a possible bedrock conductor. The EM responses are a little stronger when the conductor was flown in a southerly direction. This suggests a possible southerly dip. The conductor could be upwards to being 400 metres long.

In summary, on the basis of the results from re-interpreting the O.G.S. GEOTEM EM airborne data within Brownstone Resources' claim block in Thomas Twp., ground follow-up work is recommended for two (2) of the selected targets, namely Conductors A and C, as outlined on the Interpretation Map. It is felt that each of these targets will be of primary interest for their VMS Cu-Zn potential, although precious metals and Ni-Cu mineralization may be of secondary interest. As mentioned previously, there is generally a thin, sometimes thick, layer of overburden material with poor to very poor conductivity, over most regions of the claim block. As a result, there may be a masking effect throughout the entire region. However, it was not considered to be a major obstacle to the penetrating ability of the high powered GEOTEM EM system to detect bedrock conductors.

Northeast-southwest cross-cutting faults are evident within the western half of the claim block. These are extremely important with respect to any mineralogical controls for base metals and as such, the development of these structural events through interpreting the magnetic data will be strongly advised. Strike slip fault

zones or deformation zones are also extremely important horizons for potential

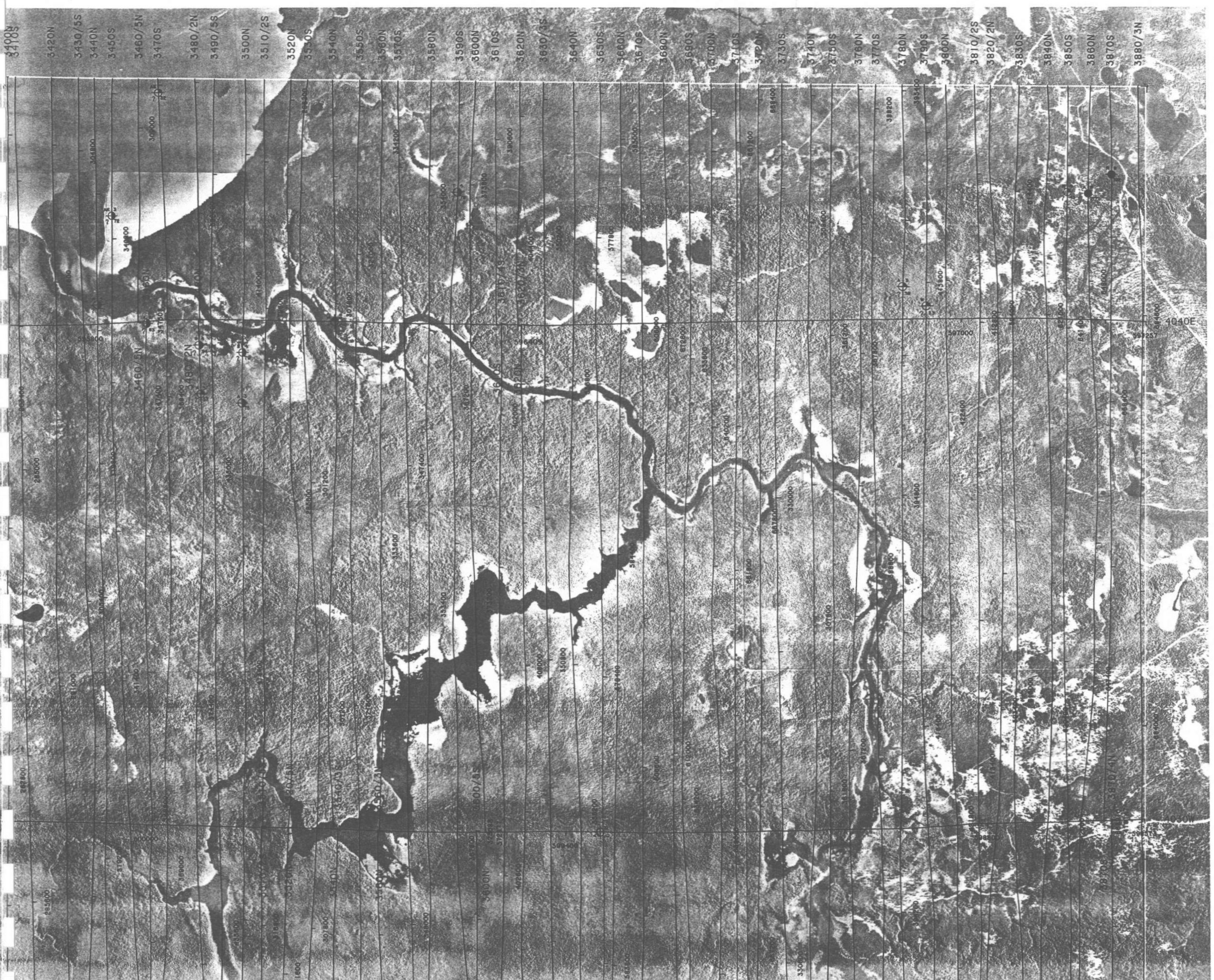
zones or deformation zones are also extremely important horizons for potential precious metal bearing environments.

As a result of the re-interpretation of the O.G.S. GEOTEM airborne data, some confidence has been gained with respect to distinguishing between bedrock conductors, both strong and weak, and conductive overburden. In evaluating the X-coil profiles across the claim block, unique characteristics were noted in the shape of the profiles, that assisted with the selection of bedrock conductors.

There are certain conductor geometries however, that would hinder or make it very difficult to distinguish between a bedrock source and conductive overburden, one such source being a flat-lying orebody. More interpretive assessment would certainly have to be carried out. It is assumed however, and there are always exceptions, that most conductors in this area are moderately to steeply dipping.

Most of the new anomalies plotted on the Interpretation Map are deemed to be related to conductive overburden. However, ground reconnaissance surveys are certainly warranted for two (2) of the outlined zones, namely Conductors A and C.

In regards to a ground follow-up geophysical system, a horizontal loop Max-Min EM system (150 or 200 metre spread, variable frequency) could be utilized. It would seem that detectability should be easy for each of the conductors recommended for further work. In areas of poorly mineralized conductors, but with high anomalous geochemical results, then an induced polarization (IP) survey may be more appropriate. It may also be more beneficial, if a deeper penetrating electromagnetic system (TEM) were utilized, particularly if the conductors are deep and if semi-massive sulphides are involved. Obviously, the cost factors for both systems will have to be considered.



Ministry of Northern Development and Mines
Ontario

Sean Conway, Minister of Mines

ONTARIO GEOLOGICAL SURVEY
GEOPHYSICAL/GEOCHEMICAL SERIES
MAP 81090

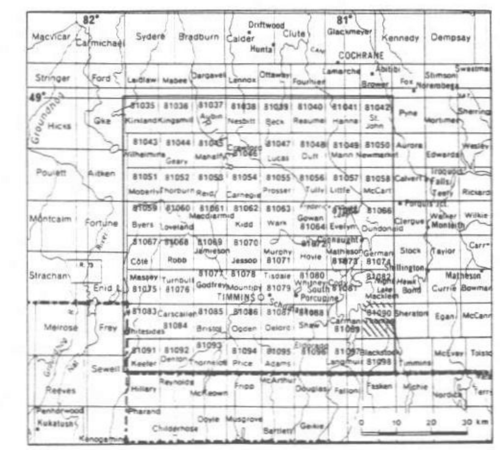
TIMMINS AREA
THOMAS TOWNSHIP

Airborne Electromagnetic Survey

DISTRICTS OF COCHRANE AND TIMISKAMING

Scale 1:31 680

NTS References: 42 A/7
ODM-GSC Aeromagnetic Map: 294 G
O.G.S. Geological Compilation Map: 2205



GEOTEM® Peak Response Symbols

ANOMALY	DECAY INTERVAL CLASSIFICATION
	1-2 Channel (350, 450 microseconds)
	3-4 Channel (550, 670 microseconds)
	5-6 Channel (790, 910 microseconds)
	7-8 Channel (1050, 1190 microseconds)
	9-10 Channel (1350, 1510 microseconds)
	11-12 Channel (1680, 1870 microseconds)

Anomaly Letter — Apparent Conductance (siemens) — Ch. 3 Amplitude — Interpreted as a possible Overburden Response — Type of Source not clear

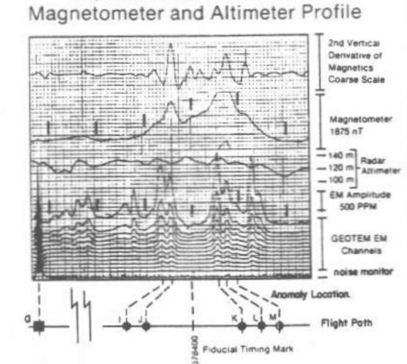
Culture Response

Anomaly Letter

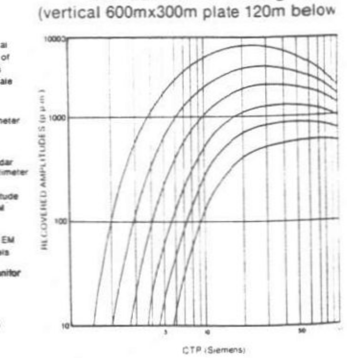
Note: Responses clearly identifiable as overburden are not represented on this map.

Mean magnetometer sensor altitude .... 120 m
Mean electromagnetic sensor altitude .... 40 m
Mean flight line spacing .... 200 m
Flight lines .... 2630 N

Representative GEOTEM®, Magnetometer and Altimeter Profile



Conductance Nomogram
(vertical 600mx300m plate 120m below



APPENDIX I

REFERENCES

Ontario Geological Survey
1988: Airborne Electromagnetic and Total Intensity Survey. Timmins Area, Thomas Township, Districts of Cochrane Timiskaming Ontario; by Geoterrex Limited, for Ontario Geological Survey, Geophysical/Geochemical Series Map 81090. Scale 1:20,000. Survey and Compilation from March 1987 to October 1987.

APPENDIX II

CERTIFICATE OF QUALIFICATIONS

I, ROBERT J. DE CARLE, certify that: -

1. I hold a B.A. Sc. in Applied Geophysics with a minor in geology from Michigan Technological University, having graduated in 1970.

2. I reside at 28 Westview Crescent in the town of Palgrave, Ontario.

3. I have been continuously engaged in both professional and managerial roles in the minerals industry in Canada and abroad for the past twenty-nine years.

4. I have been an active member of the Society of Exploration Geophysicists since 1967 and I hold memberships as a Fellow in good standing in The Geological Association of Canada and other professional societies involved in the minerals extraction and exploration industry.

5. The accompanying geophysical report was prepared from information published by government agencies, materials supplied by Brownstone Resources Inc., and from a review of the proprietary airborne geophysical survey flown by Geoterrex Limited for the Ontario Geological Survey. I have not personally visited the property.

6. I have no interest, direct or indirect, in the property described, but I do hold securities in Brownstone Resources Inc.

7. This report may be used for filing with the various regulatory bodies as may be required.

Signed,

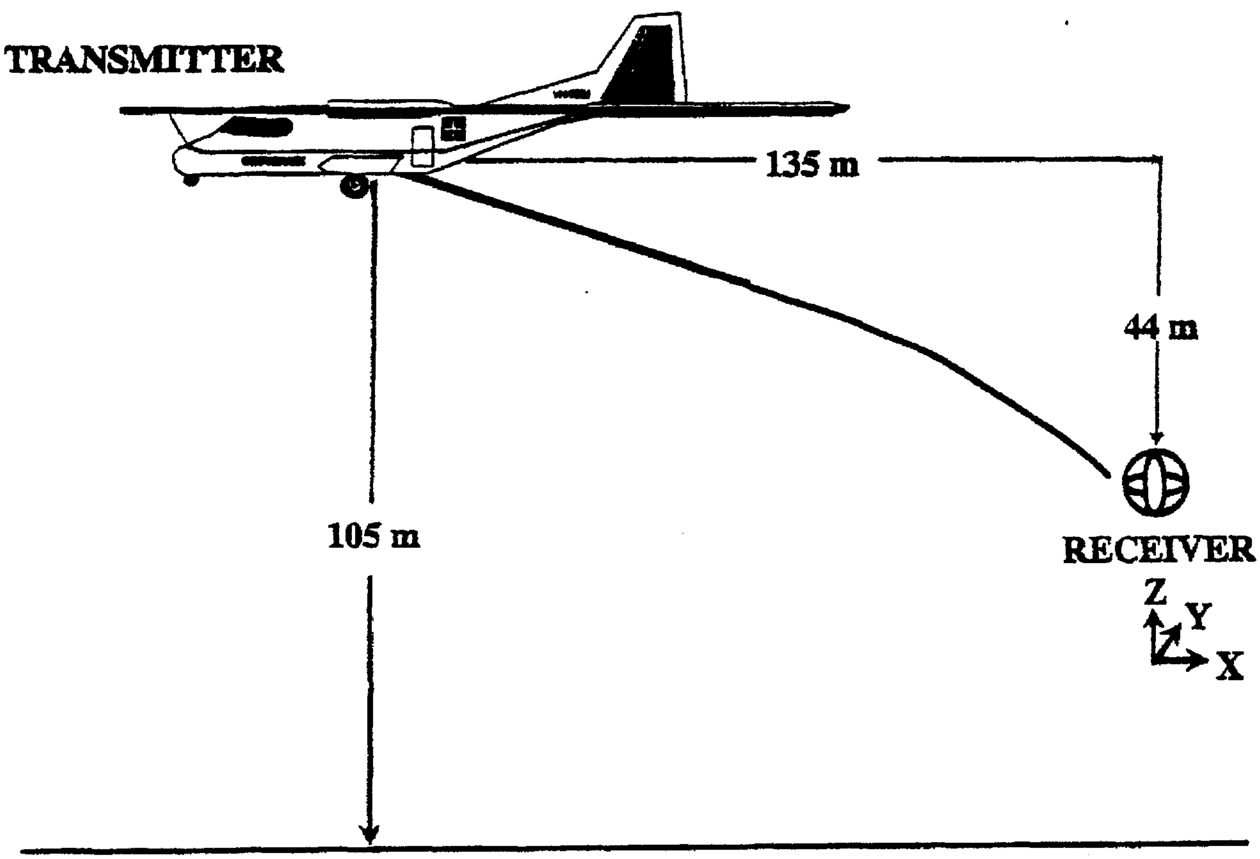
Palgrave, Ontario
February 2, 1999

Robert J. de Carle
Consulting Geophysicist

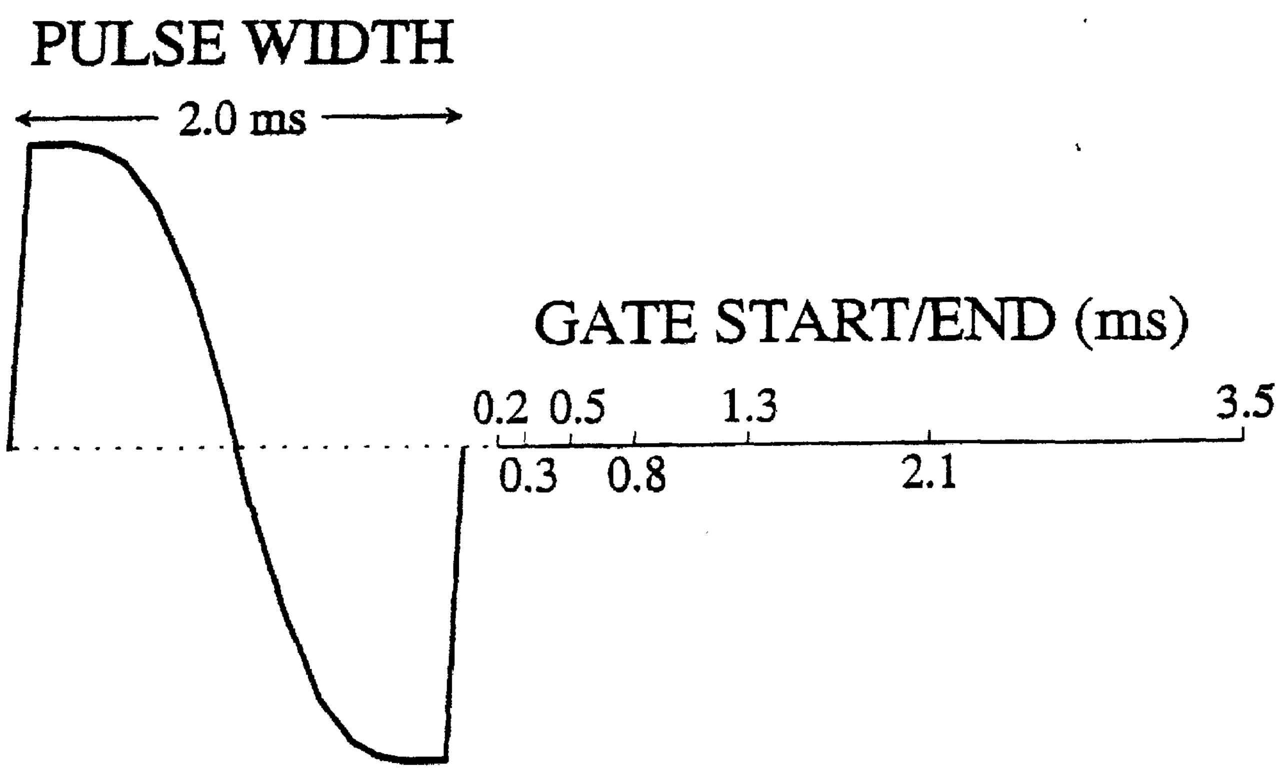
APPENDIX III

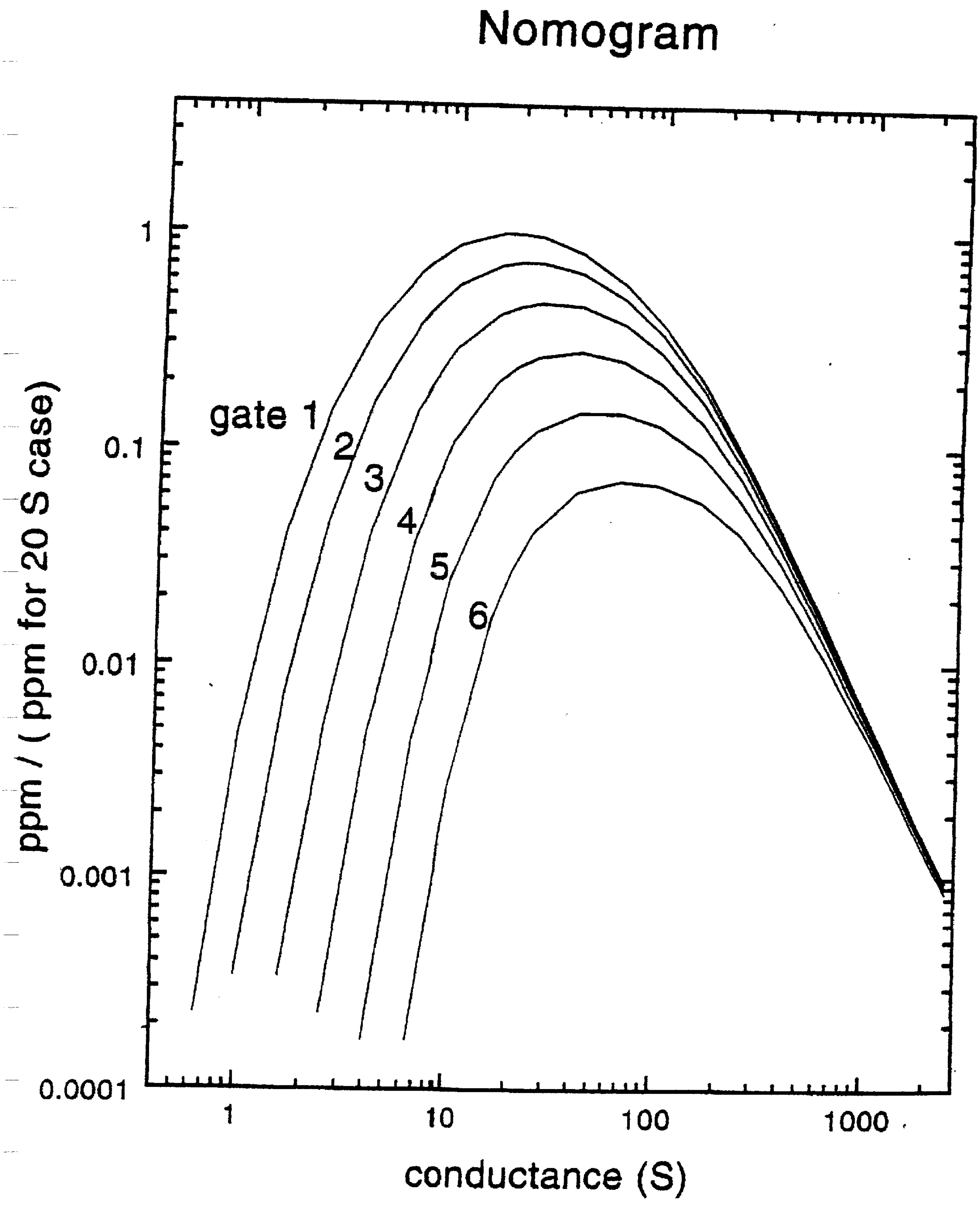
MULTICOMPONENT GEOTEM MODELLING

GEOTEM Geometry for modelling



Transmitter Waveform and Receiver sampling




Nomogram
gate 1
2
3
4
5
6
1
0.1
0.01
0.001
0.0001
ppm / (ppm for 20 S case)
1
10
100
1000
conductance (S)

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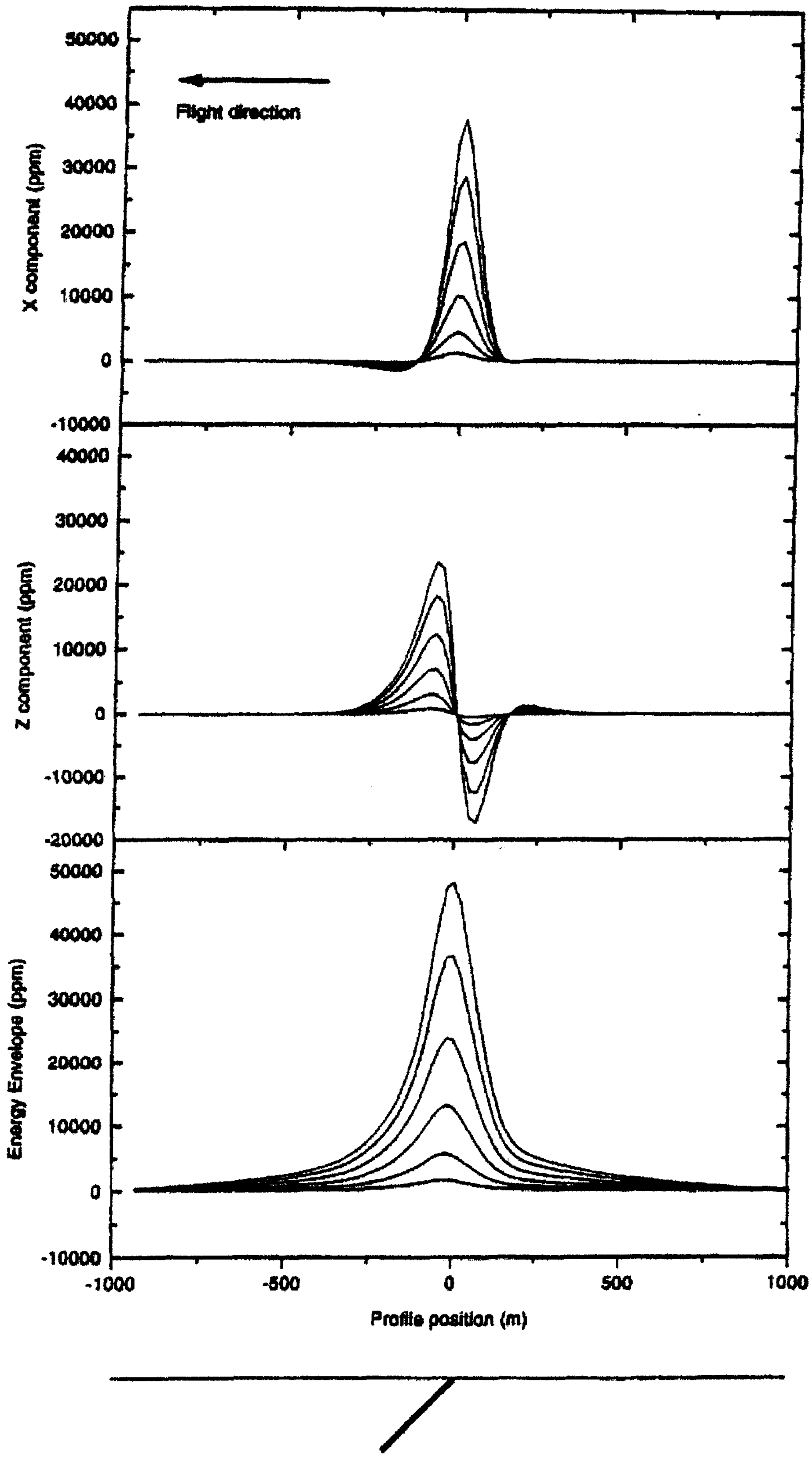

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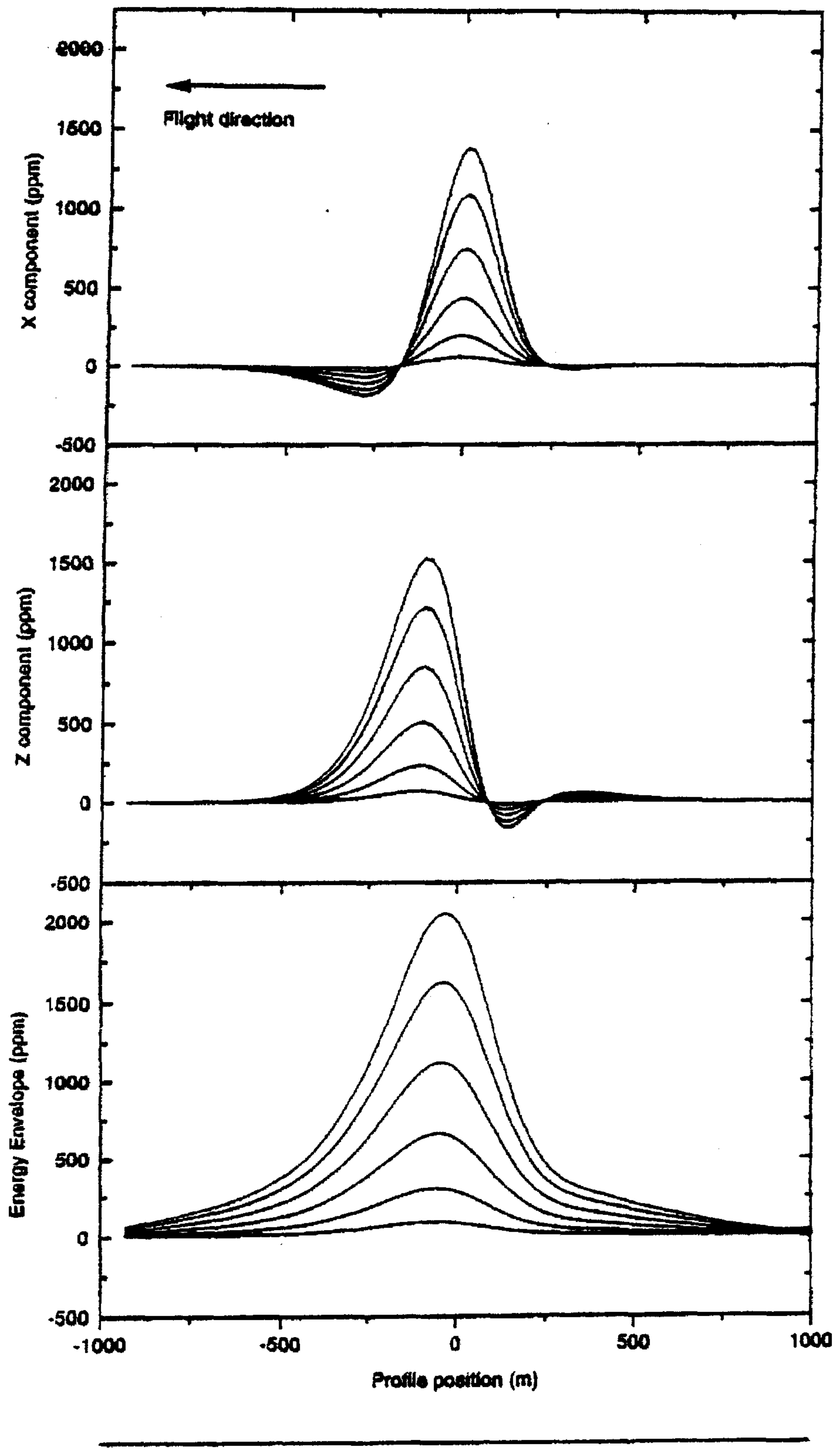

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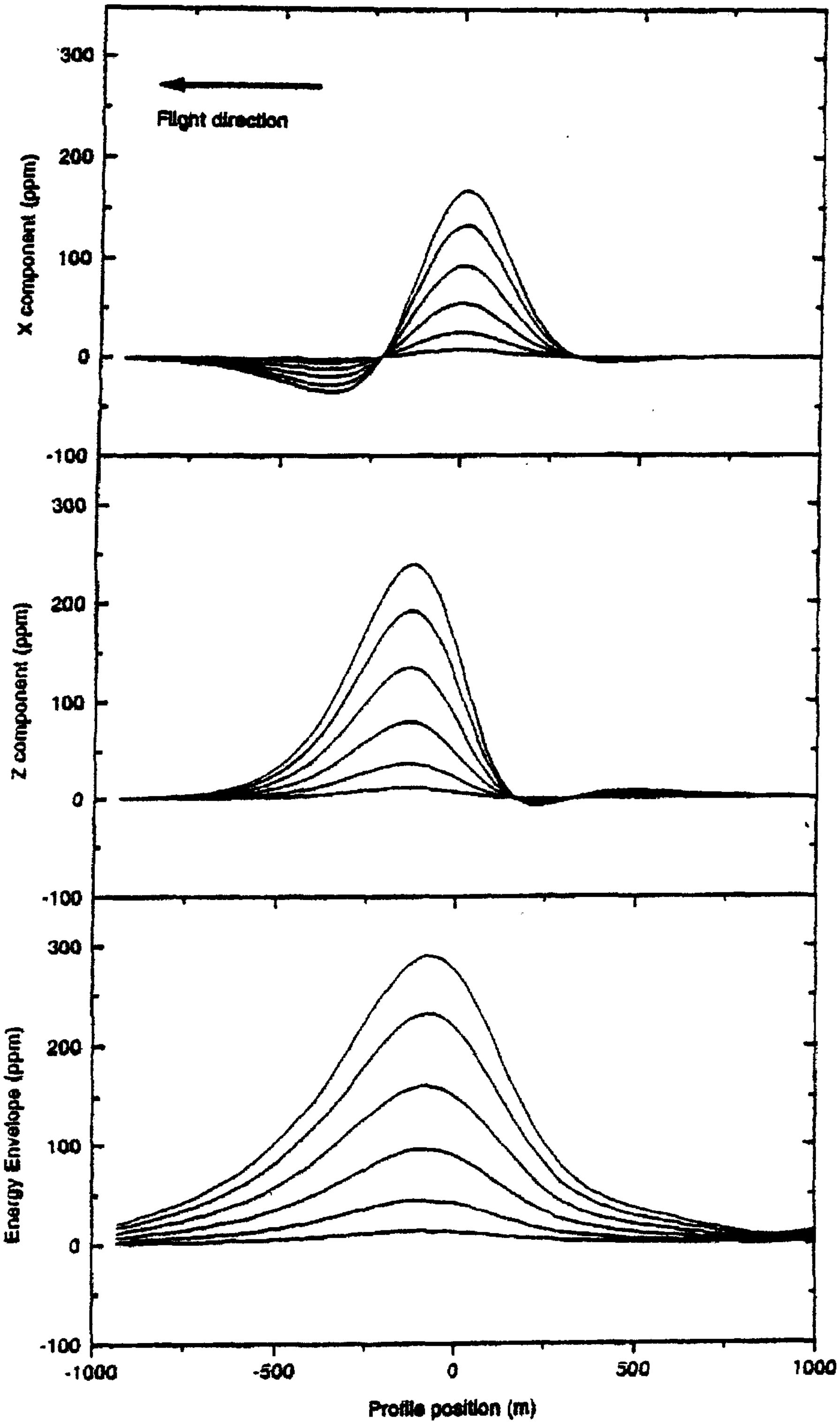

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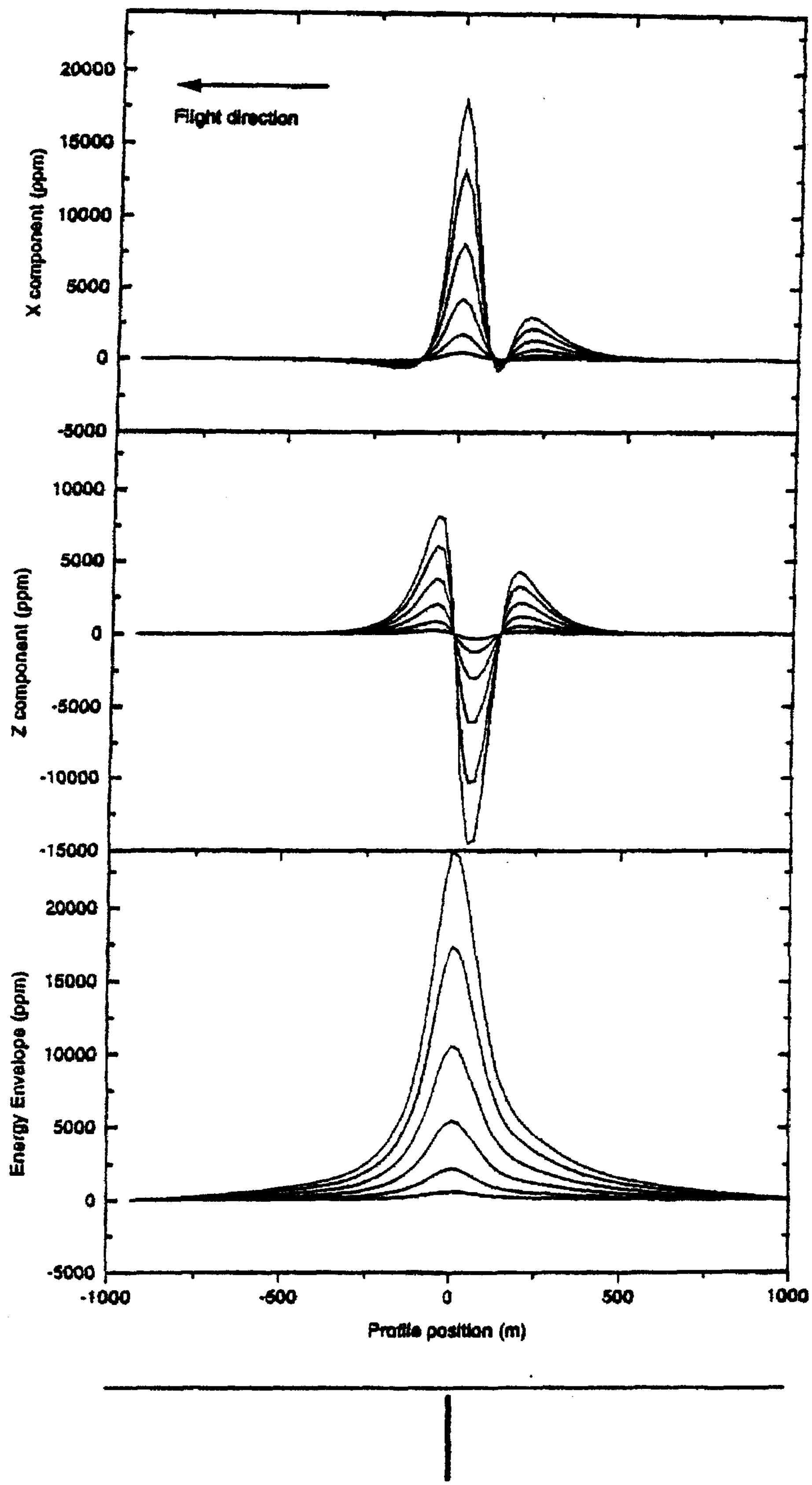

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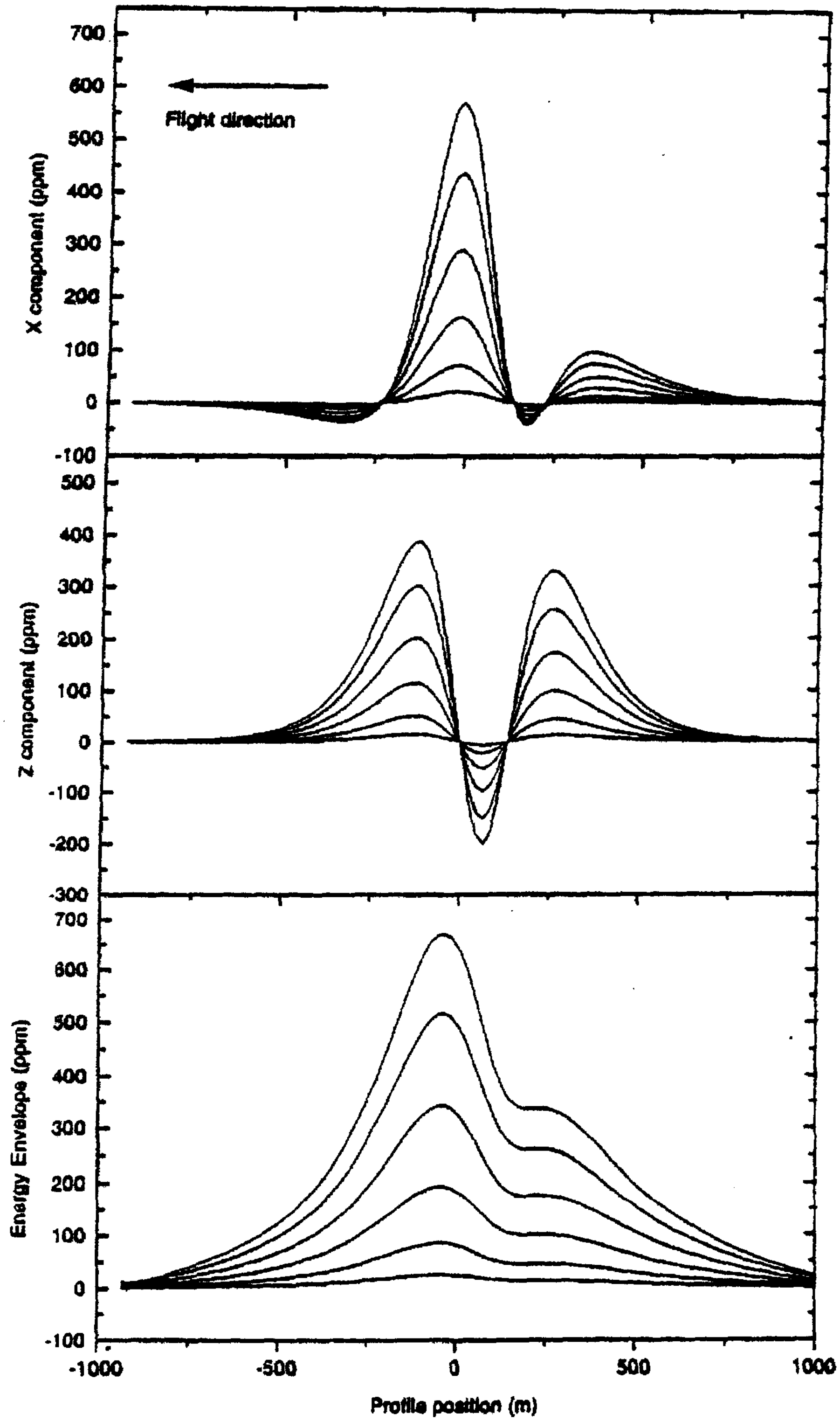

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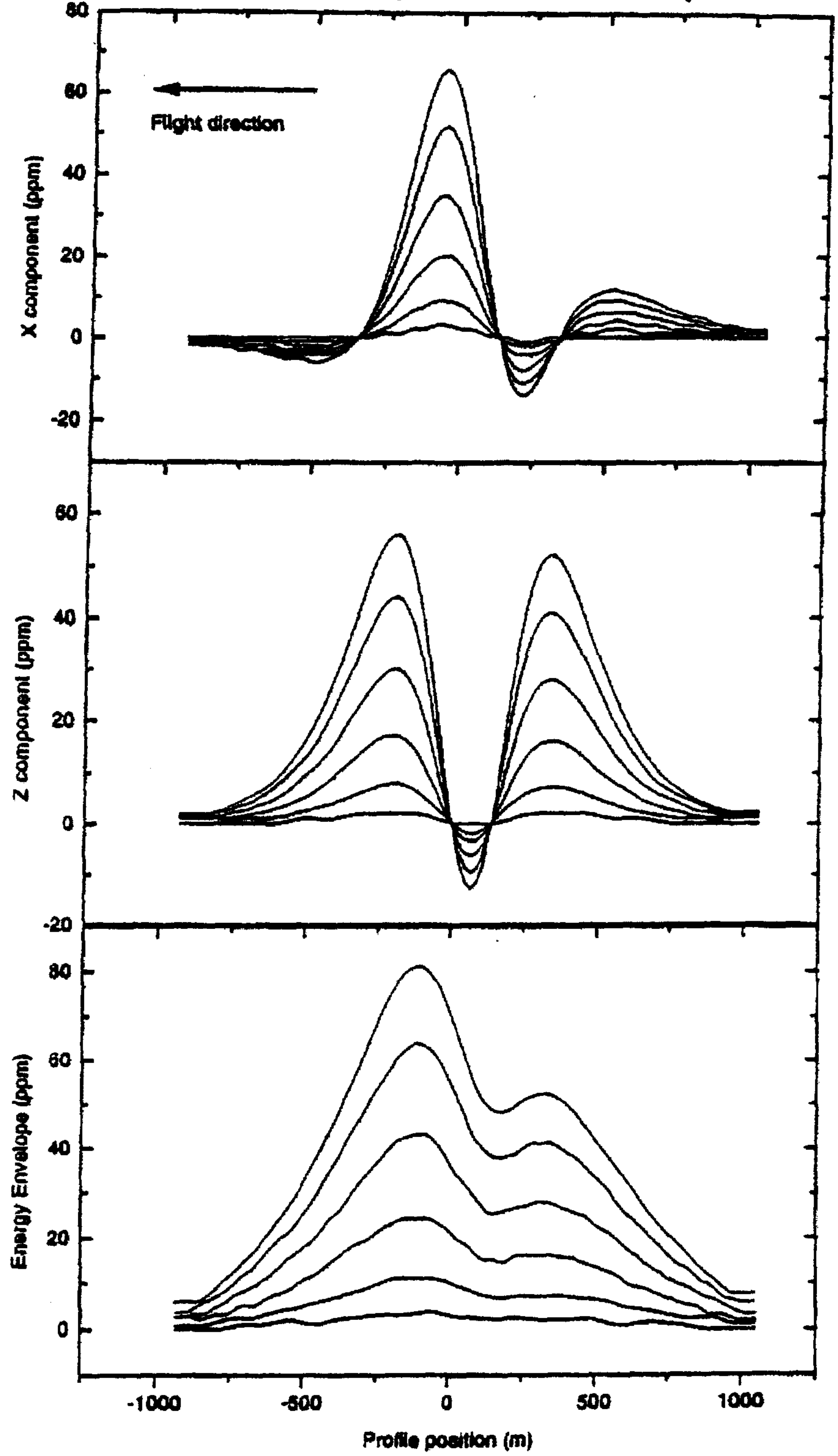

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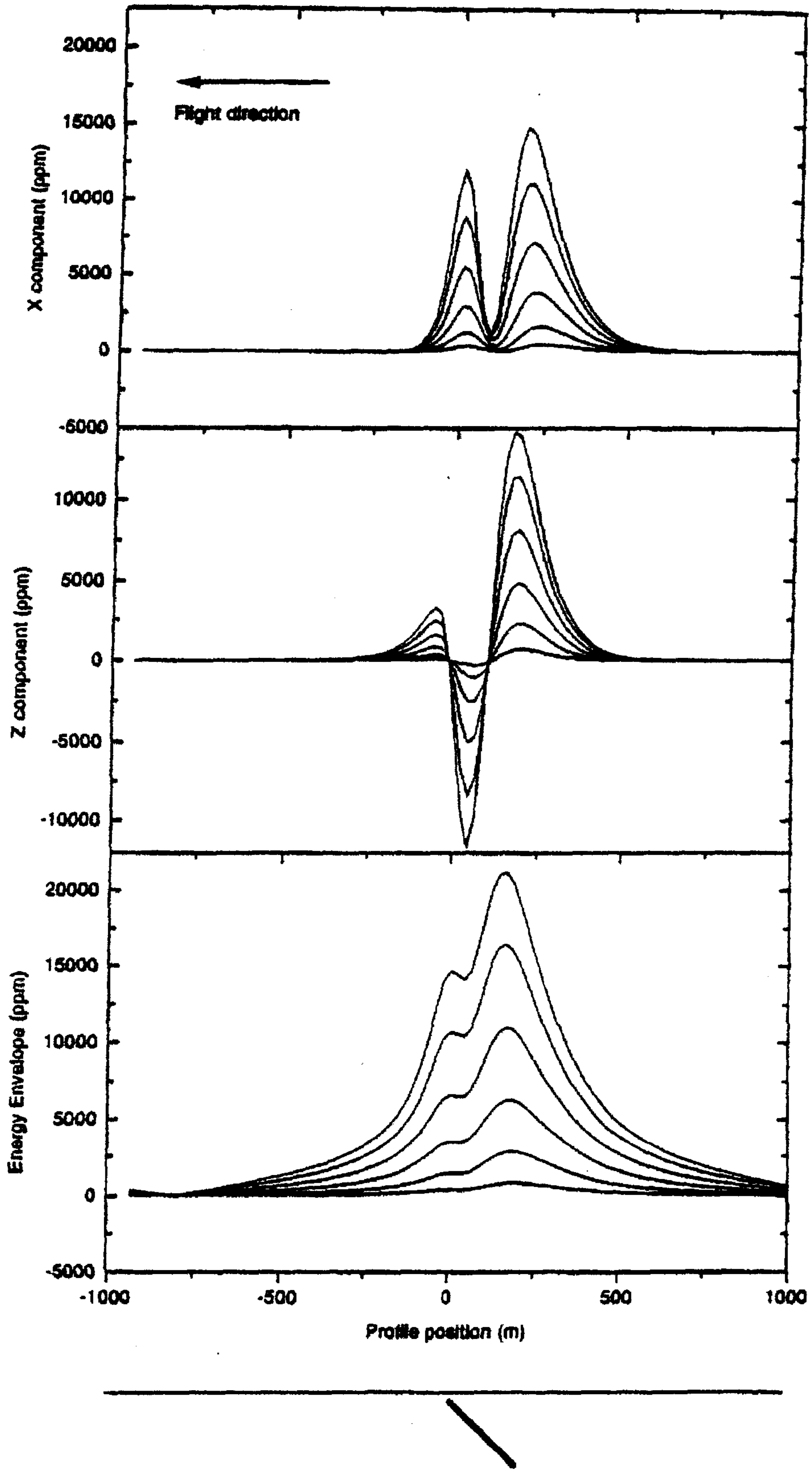

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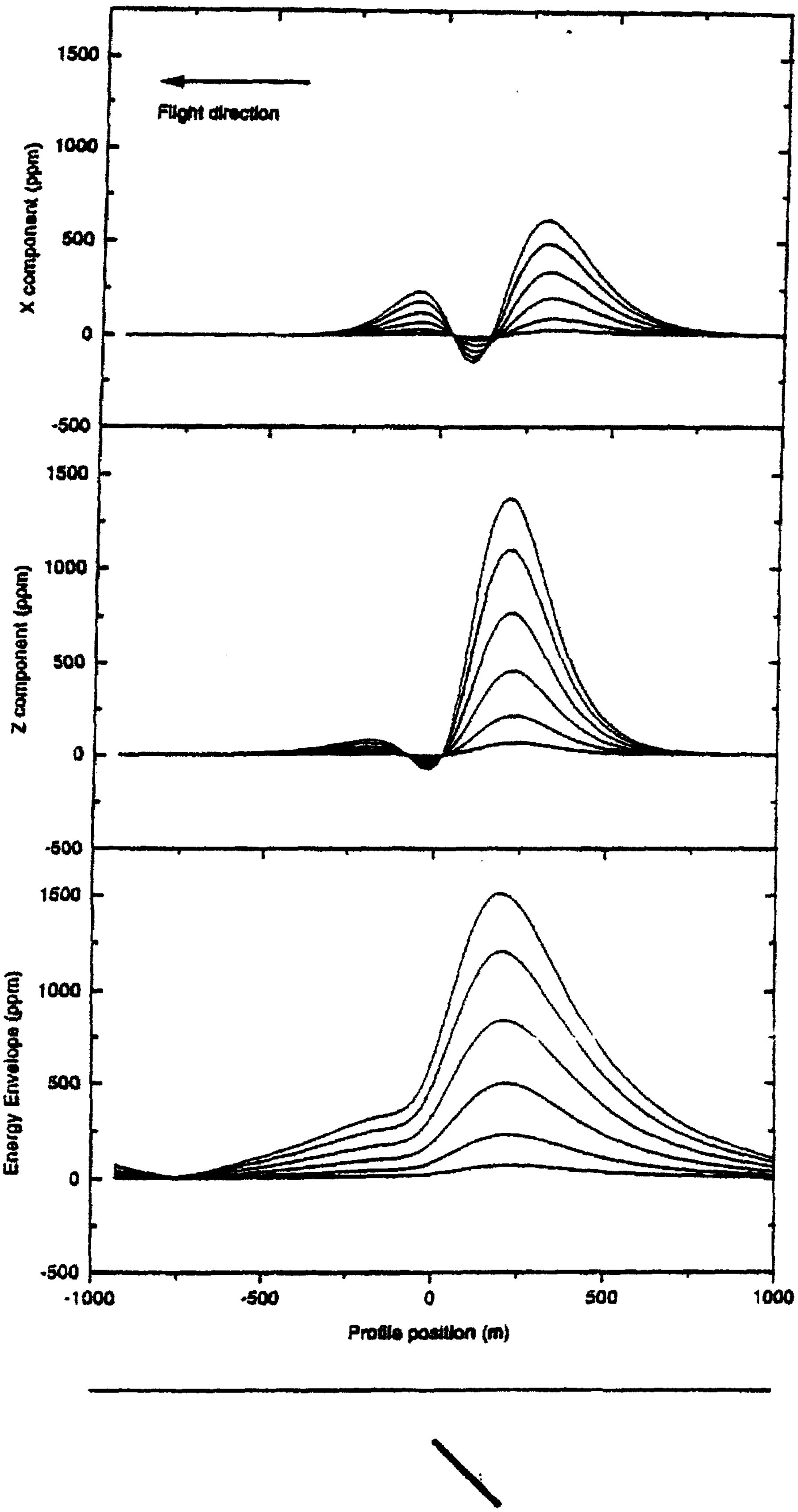

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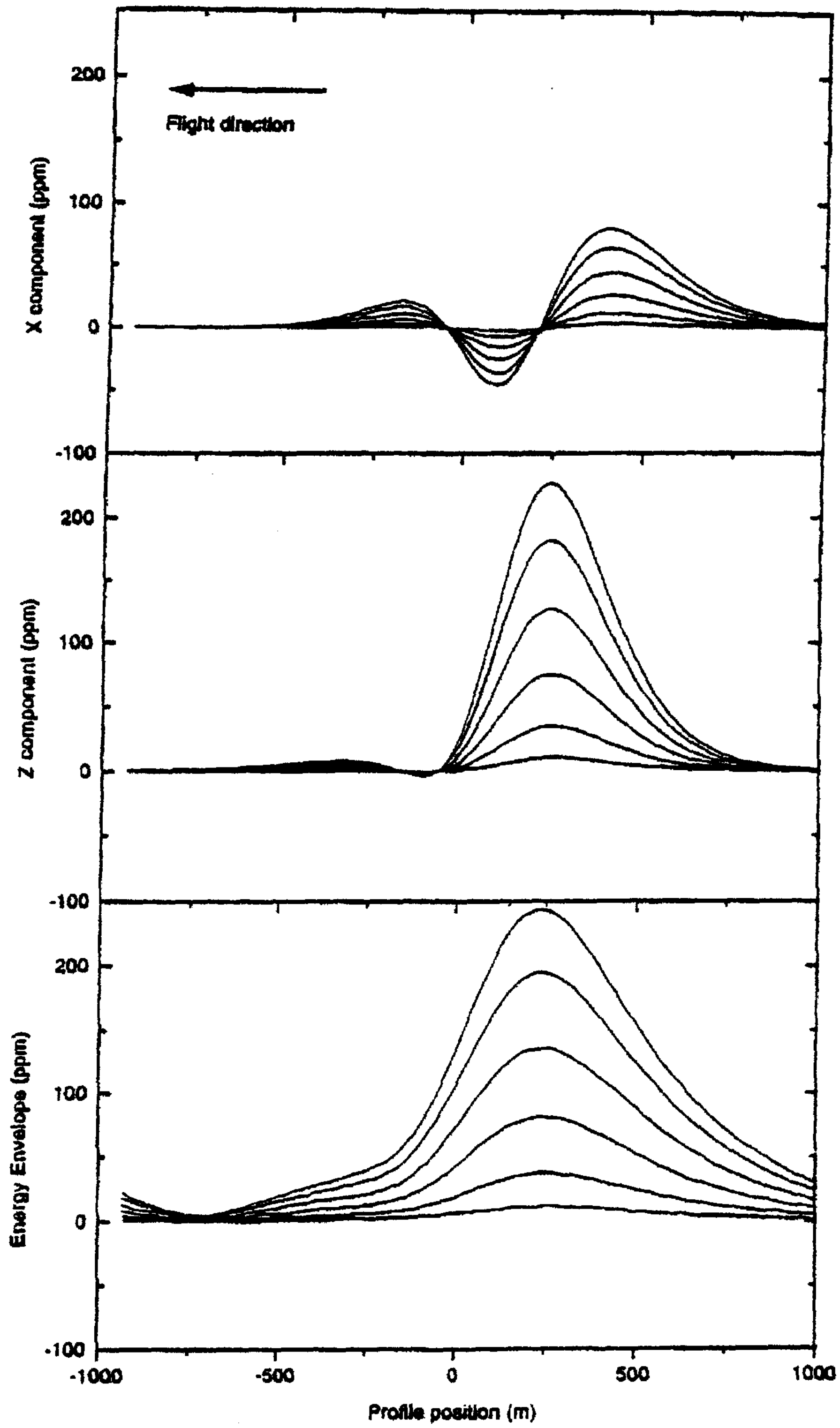

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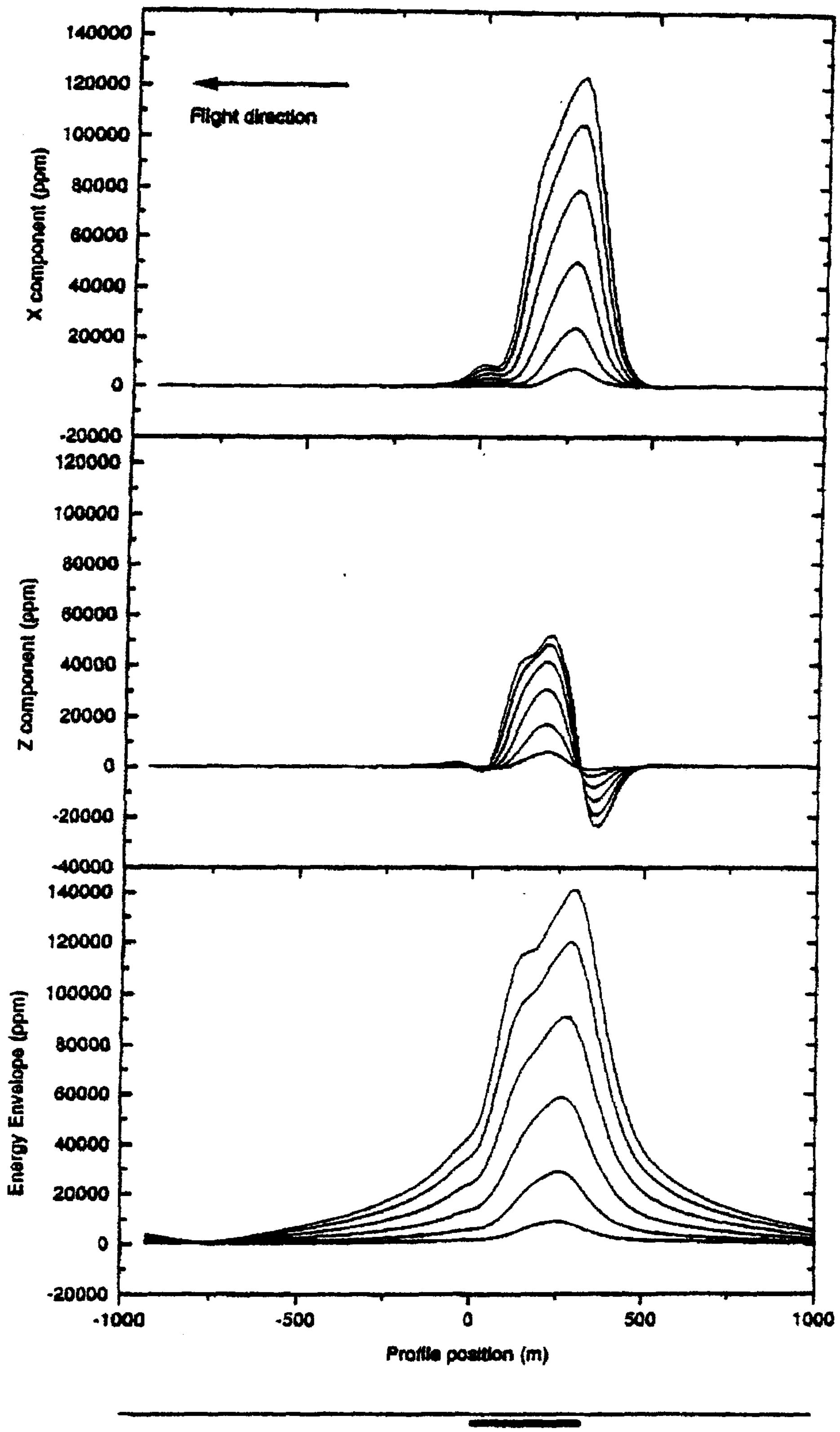

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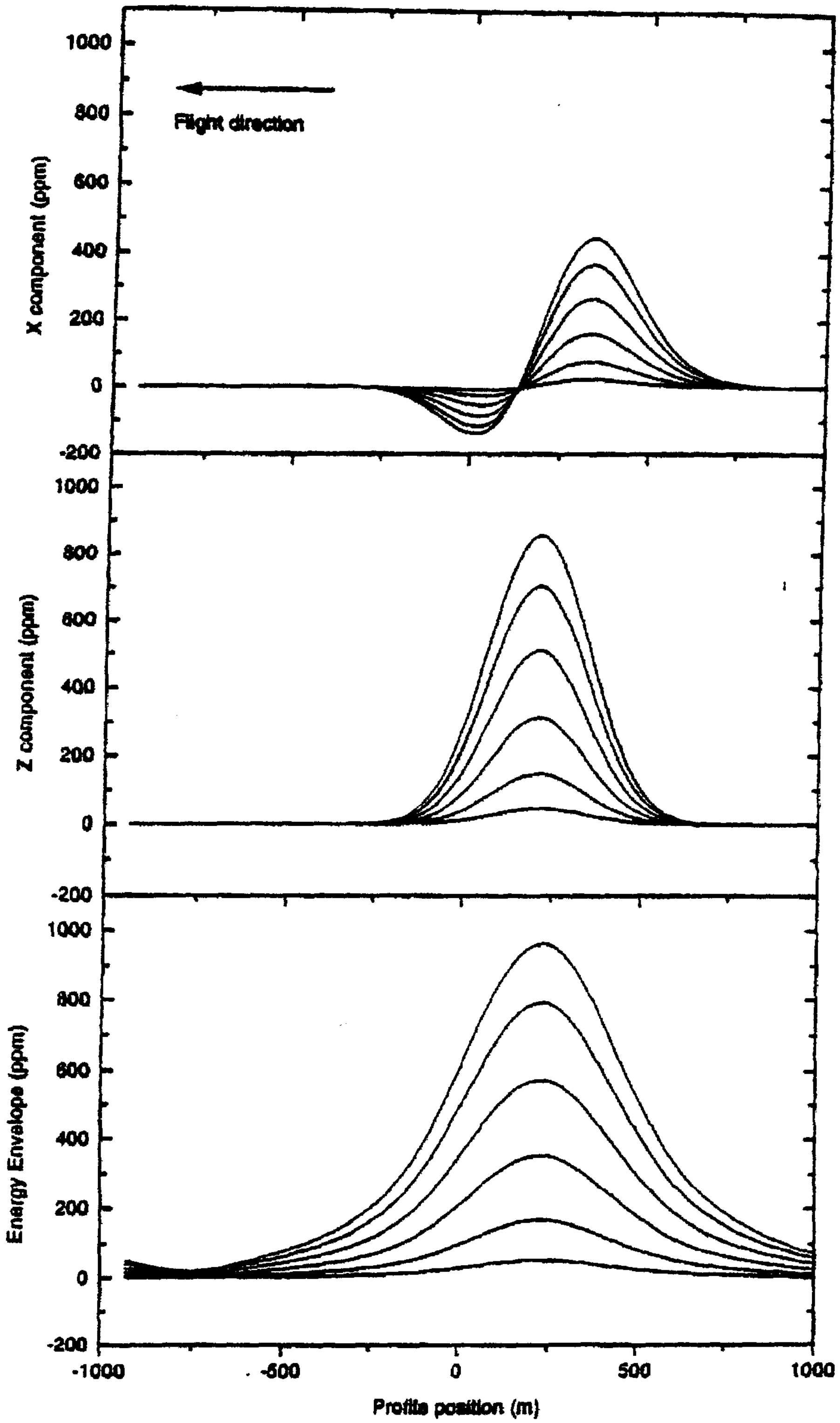

APPENDIX IV

GEOTEM INTERPRETATION

GEOTEM[R] INTERPRETATION[1]

I. INTRODUCTION

The basis of the transient electromagnetic (EM) geophysical surveying technique relies on the premise that changes in the primary EM field produced in the transmitting loop will result in eddy currents being generated in any conductors in the ground. The eddy currents then decay to produce a secondary EM field which may be sensed as a voltage in the receiver coil.

GEOTEM (GEOterrex Transient ElectroMagnetic system) is an airborne transient (or time-domain) towed-bird EM system incorporating a high-speed digital receiver which records the secondary field response with a high degree of accuracy. Most often the total magnetic field is recorded concurrently.

Although the approach to GEOTEM interpretation varies from one survey to another depending on the type of data presentation, objectives and local conditions, the following generalizations may provide the reader with some helpful background information.

The main purpose of the interpretation is to determine the probable origin of the conductors detected during the survey and to suggest recommendations for further exploration. This is possible through an objective analysis of all characteristics of the different types of conductors and associated magnetic anomalies, if any. If possible the airborne results are compared to other available data. A certitude is seldom reached, but a high probability is achieved in identifying the conductive causes in most cases. One of the most difficult problems is usually the differentiation between surface conductors and bedrock conductors.

II. TYPES OF CONDUCTORS

A. Bedrock Conductors

The different types of bedrock conductors normally encountered are the following:

1. Graphites. Graphitic horizons (including a large variety of carbonaceous rocks) occur in sedimentary formations of the Precambrian as well as in volcanic tuffs, often concentrated in shear zones. They correspond generally to long, multiple conductors lying in parallel bands. They have no magnetic expression unless associated with pyrrhotite or magnetite. Their conductivity is variable but generally high.

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[1] GEOTEM[R]: Registered Trade Mark of Geoterrex Limited.

2. Massive sulphides. Massive sulphide deposits usually manifest themselves as short conductors of high conductivity, often with a coincident magnetic anomaly. Some massive sulphides, however, are not magnetic, others are not very conductive (discontinuous mineralization), and some may be located among formational conductors so that one must not be too rigid in applying the selection criteria.

   In addition, there are syngenetic sulphides whose conductive pattern may be similar to that of graphitic horizons but these are generally not as prevalent as graphites.

3. Magnetite and some serpentinized ultrabasics. These rocks are conductive and very magnetic.

4. Manganese oxides. This mineralization may give rise to a weak EM response.

B. Surficial Conductors

1. Beds of clay and alluvium, some swamps, and brackish ground water are usually poorly conductive to moderately conductive.

2. Lateritic formations, residual soils and the weathered layer of the bedrock may cause surface anomalous zones, the conductivity of which is generally low to medium but can occasionally be high. Their presence is often related to the underlying bedrock.

C. Cultural Conductors (Man-Made)

1. Power lines. These frequently, but not always, produce a conductive type of response on the GEOTEM record. In the case of direct radiation of its field, a power line is easily recognized by a GEOTEM anomaly which exhibits phase changes between different channels. In the case of a grounded wire, or steel pylon, the anomaly may look very much like a bedrock conductor.

2. Grounded fences or pipelines. These will invariably produce responses much like a bedrock conductor. Whenever they cannot be identified positively, a ground check is recommended.

3. General culture. Other localized sources such as certain buildings, bridges, irrigation systems, tailings ponds etc., may produce GEOTEM anomalies. Their instances, however, are rare and often they can be identified on the visual path recovery system.

III. ANALYSIS OF THE CONDUCTORS

The apparent conductivity alone is not generally a decisive criterion in the analysis of a conductor. In particular, one should note:

- its shape and size,
- all local variations of characteristics within a conductive zone,
- any associated geophysical parameter (e.g. magnetics),
- the geological environment,
- the structural context, and
- the pattern of surrounding conductors.

The first objective of the interpretation is to classify each conductive zone according to one of the three categories which best defines its probable origin. The categories are cultural, surficial and bedrock. A second objective is to assign to each zone a priority rating as to its potential as an economic prospect.

A. Cultural Conductors

The majority of cultural anomalies occur along roads and are accompanied by a response on the power line monitor. (This monitor is set to 50 or 60 Hz, depending on the local power grid.) Power lines are the most common source of the anomalies and many are recognized immediately by virtue of phase reversals or an abnormal rate of decay. A certain number yield normal GEOTEM anomalies which could be mistaken for bedrock responses. There are also some power lines which have no GEOTEM response whatsoever.

The power line monitor, of course, is of great assistance in identifying cultural anomalies of this type. It is important to note, however, that geological conductors in the vicinity of power lines may exhibit a weak response on the monitor because of current induction via the earth.

Fences, pipelines, communication lines, railways and other man-made conductors can give rise to GEOTEM responses, the strength of which will depend on the grounding of these objects.

Another facet of this analysis is the line-to-line comparison of anomaly character along suspected man-made conductors. In general, the amplitude, the rate of decay, and the anomaly width should not vary a great deal along any one conductor, except for the change in amplitude related to terrain clearance variation. A marked departure from the average response character along any given feature gives rise to the possibility of a second conductor.

In most cases a visual examination of the site will suffice to verify the presence of a man-made conductor. If a second conductor is suspected the ground check is more difficult to accomplish. The object would be to determine if there is (i) a change in the man-made construction, (ii) a difference in the grounding conditions, (iii) a second cultural source, or (iv) if there is, indeed, a geological conductor in addition to the known man-made source.

B. Surficial Conductors

This term is used for geological conductors in the overburden, either glacial or residual in origin, and in the weathered layer of the bedrock. Most surficial conductors are probably caused by clay minerals. In some environments the presence of salts will contribute to the conductivity. Other possible electrolytic conductors are residual soils, swamps, brackish ground water and alluvium such as lake or river-bottom deposits, flood plains and estuaries.

Normally, most surficial materials have low to intermediate conductivity so they are not easily mistaken for highly conductive bedrock features. Also, many of them are wide and their anomaly shapes are typical of broad horizontal sheets.

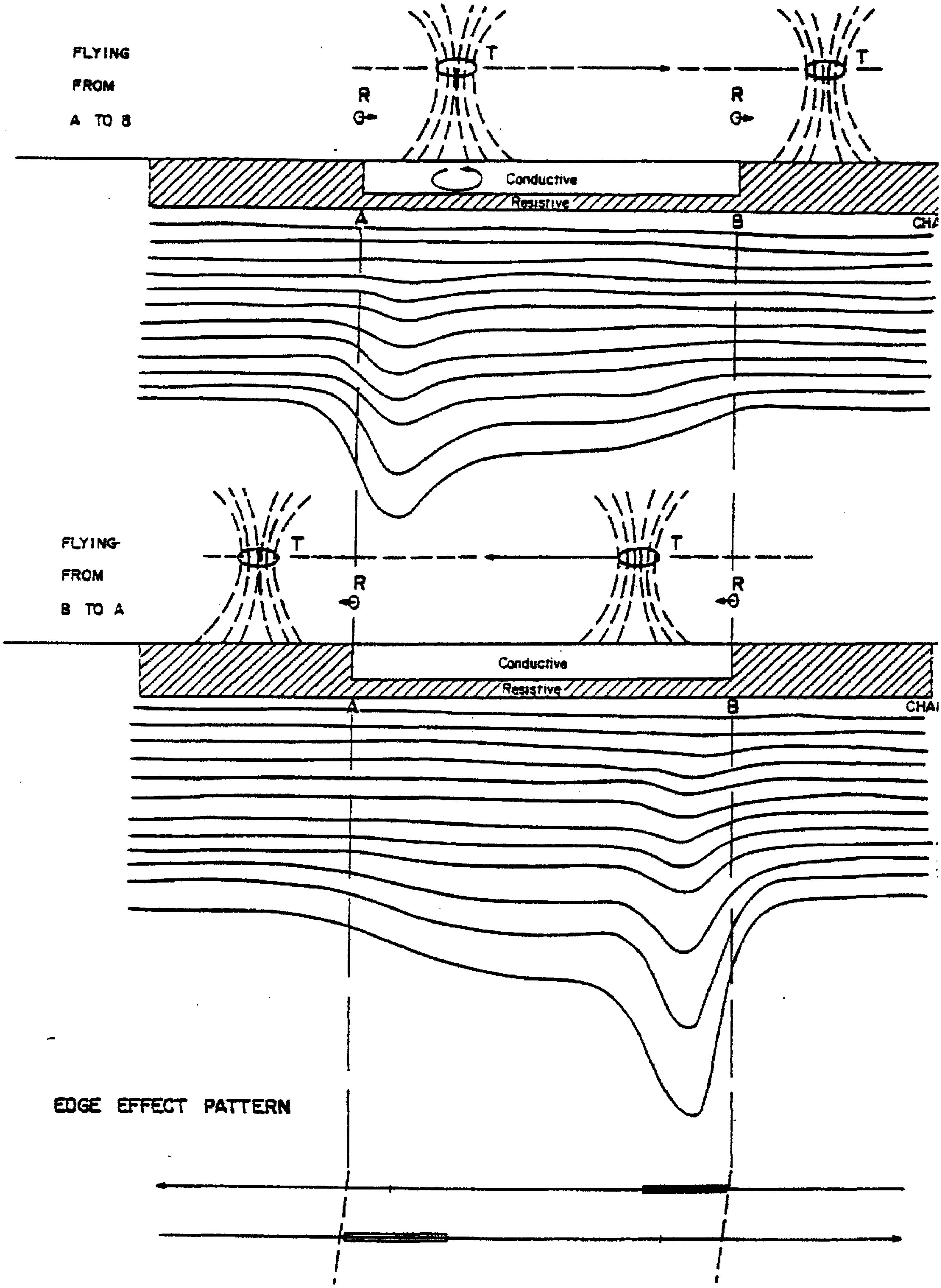
When surficial conductivity is high it is usually still possible to distinguish between a horizontal plate (more likely to be surficial material) and a vertical body (more likely to be a bedrock source) thanks to the asymmetry of the GEOTEM responses observed at the edges of a broad conductor when flying adjacent lines in opposite directions. The configuration of the system is such that the response recorded at the leading edge is more pronounced than that registered at the trailing edge. Figure 1 illustrates the "edge effect" and the resulting conductive pattern in plan view. In practice there are many variations on this very diagnostic phenomenon.

One of the more ambiguous situations as to the true source of the response is when surface conductivity is related to bedrock lithology as for example, surface alteration of an underlying bedrock unit. At times, it is also difficult to distinguish between a weak conductor within the bedrock (e.g. near-massive sulphides) and a surficial source.

In the search for massive sulphides or other bedrock targets, surficial conductivity is generally considered as interference but there are situations where the interpretation of surficial-type conductors is the primary goal. When soils, weathered or altered products are conductive, and in-situ, the GEOTEM responses are a very useful aid to geologic mapping. Shears and faults are often identified by weak, usually narrow, anomalies.

Analysis of surficial conductivity can be used in the exploration for such features as lignite deposits, kimberlites, paleochannels and ground water. In coastal or arid areas, surficial responses may serve to define the limits of fresh, brackish and salty water.

EDGE EFFECT



FLYING
FROM
A TO B
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Conductive
Resistive
A
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FLYING
FROM
B TO A
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T
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Conductive
Resistive
A
B
CHA
EDGE EFFECT PATTERN

C. Bedrock Conductors

This category comprises those anomalies which cannot be classified according to the criteria established for cultural and surficial responses. It is difficult to assign a universal set of values which typify bedrock conductivity because any individual zone or anomaly might exhibit some, but not all, of these values and still be a bedrock conductor. The following criteria are considered indicative of a bedrock conductor:

1. An intermediate to high conductivity identified by a response with slow decay, with deflections most often present in the later channels.

2. The anomaly should be narrow, relatively symmetrical, with a well-defined peak.

3. There should be no serious displacement of anomaly position or change in anomaly shape (other than mirror image) with respect to flight direction, except in the case of non-vertical dipping bodies. The alternating character of the response as a result of line direction can be diagnostic of conductor geometry. Figures 2 to 6 illustrate anomalies associated with different target models.

4. A small to intermediate amplitude. Large amplitudes are normally associated with surficial conductors. The amplitude varies according to the depth of the source.

5. A degree of continuity of the EM characteristics across several lines.

6. An associated magnetic response of similar dimensions. One should note, however, that those rocks which weather to produce a conductive upper layer will possess this magnetic association. In the absence of one or more of the characteristics defined in 1, 2, 3 and 4, the related magnetic response cannot be considered significant.

Most obvious bedrock conductors occur in long, relatively monotonous, sometimes multiple zones following formational strike. Graphitic material is usually the most probable source. Massive syngenetic sulphides extending for many kilometres are known in nature but, in general, they are not common. Long formational structures associated with a strong magnetic expression may be indicative of banded iron formations.

A bedrock conductor reflecting the presence of a massive sulphide would normally exhibit the following characteristics:

- a high conductivity,
- a good anomaly shape (narrow and well-defined peak),
- a small to intermediate amplitude,
- an isolated setting,

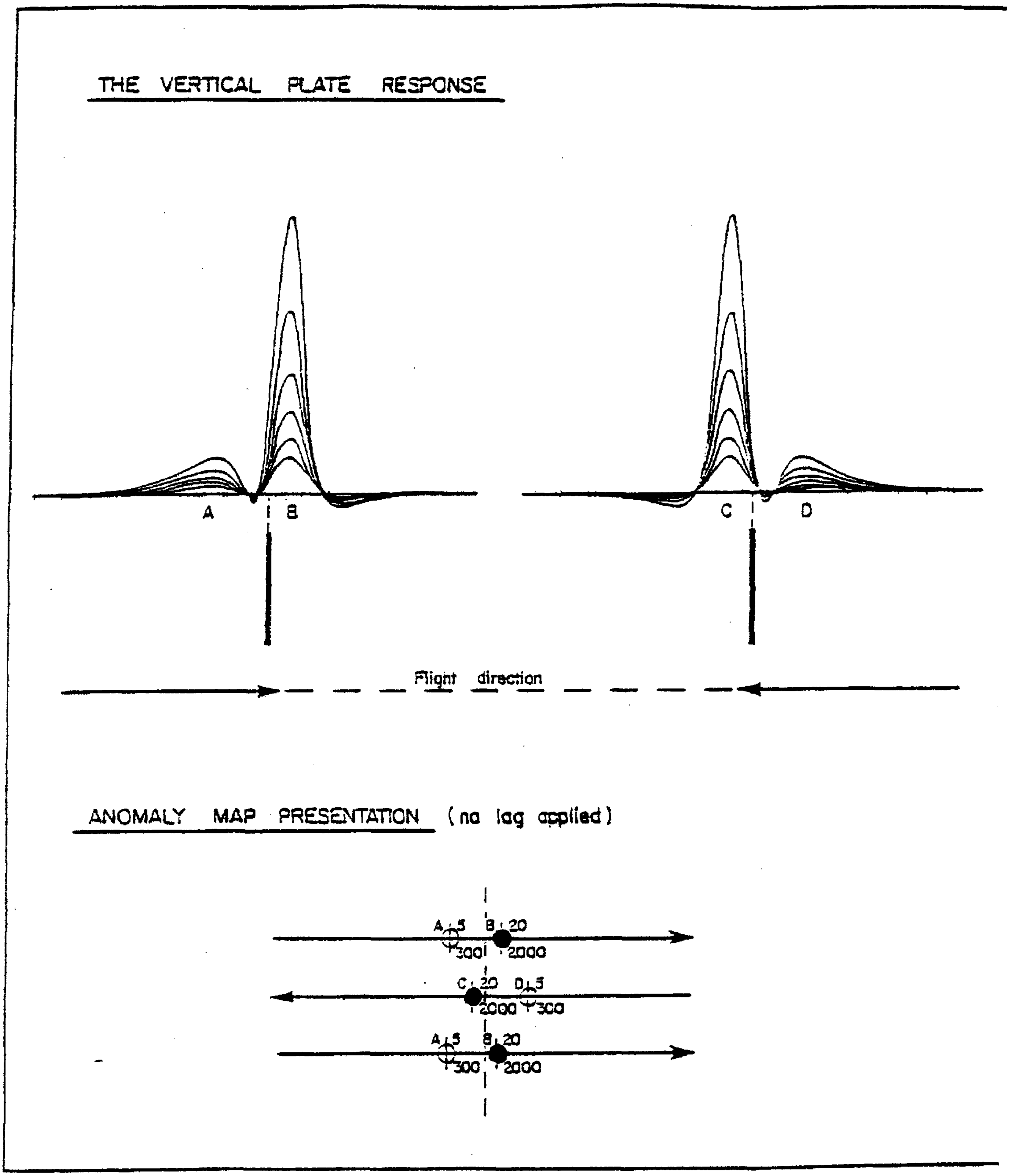

THE VERTICAL PLATE RESPONSE
A
B
C
D
Flight direction
ANOMALY MAP PRESENTATION (no lag applied)
A 5
300
B 20
2000
C 20
2000
D 5
300
A 5
300
B 20
2000

Figure 2

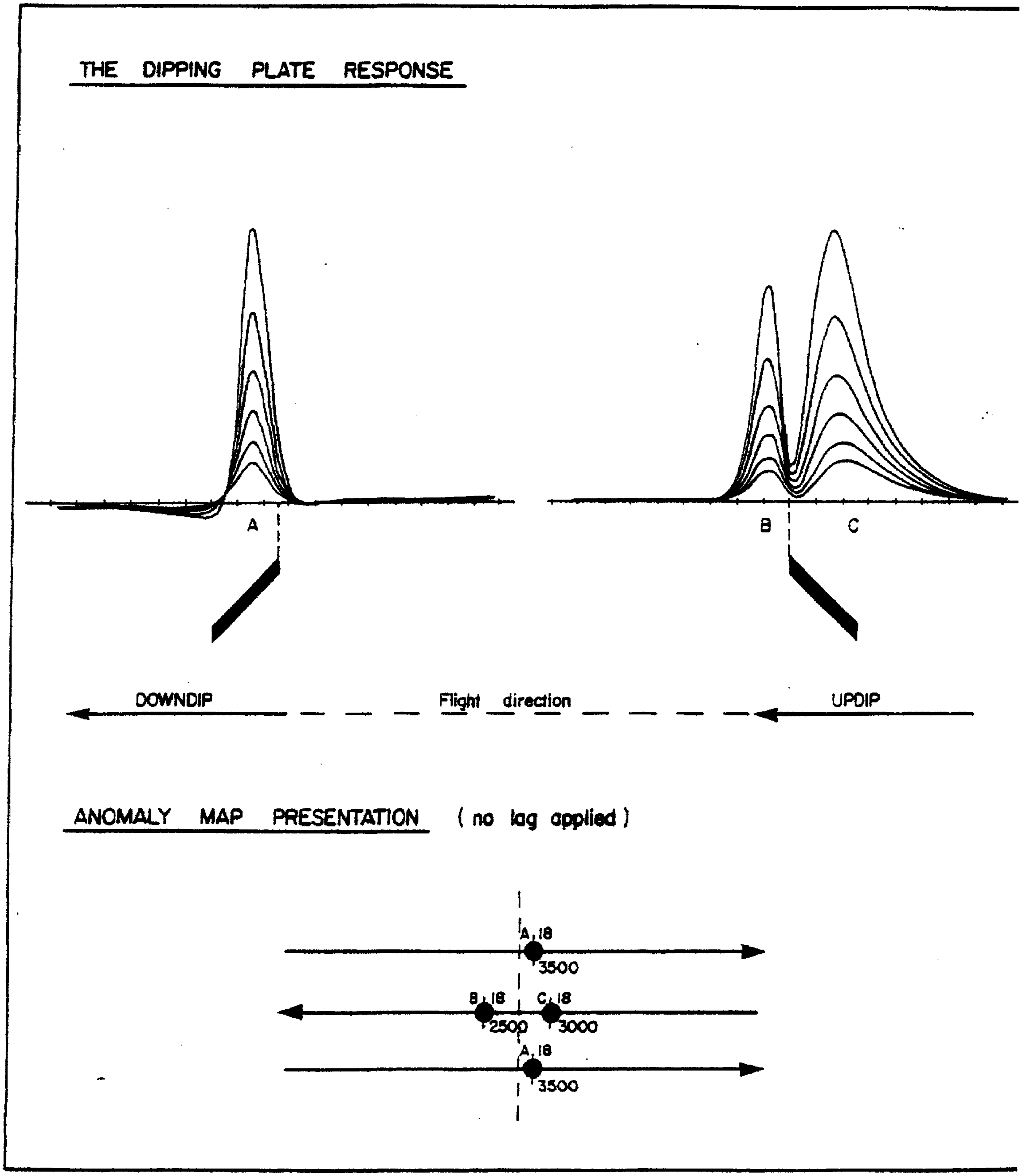
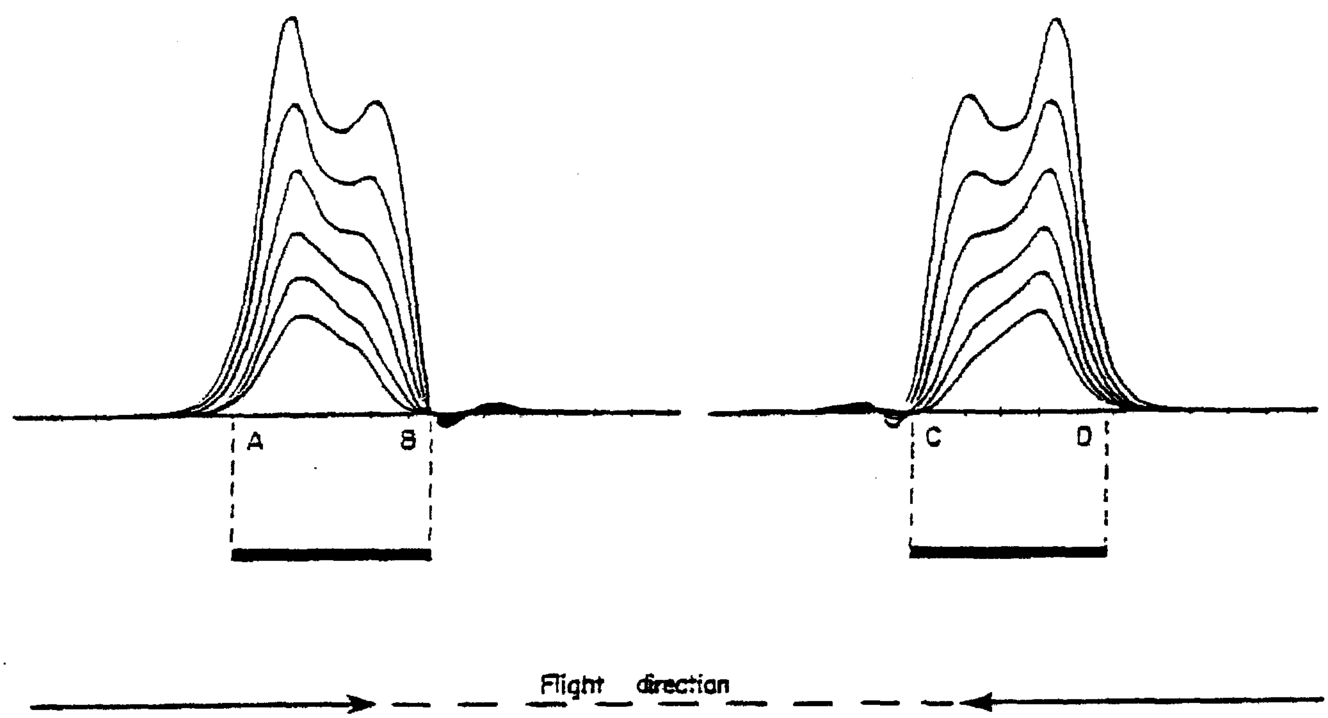

THE DIPPING PLATE RESPONSE
A
B
C
DOWNDIP
Flight direction
UPDIP
ANOMALY MAP PRESENTATION (no lag applied)
A, 18
3500
B, 18
2500
C, 18
3000
A, 18
3500

Figure 3

THE HORIZONTAL PLATE RESPONSE



ANOMALY MAP PRESENTATION (no lag applied)

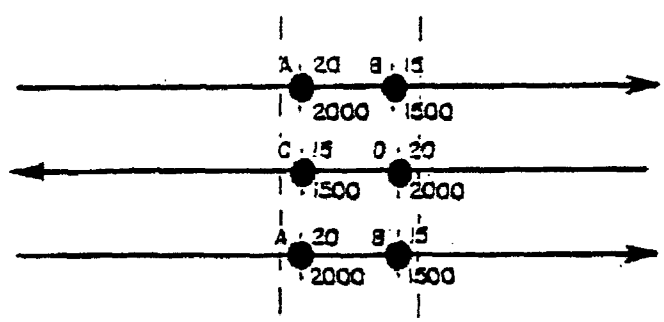


Figure 4

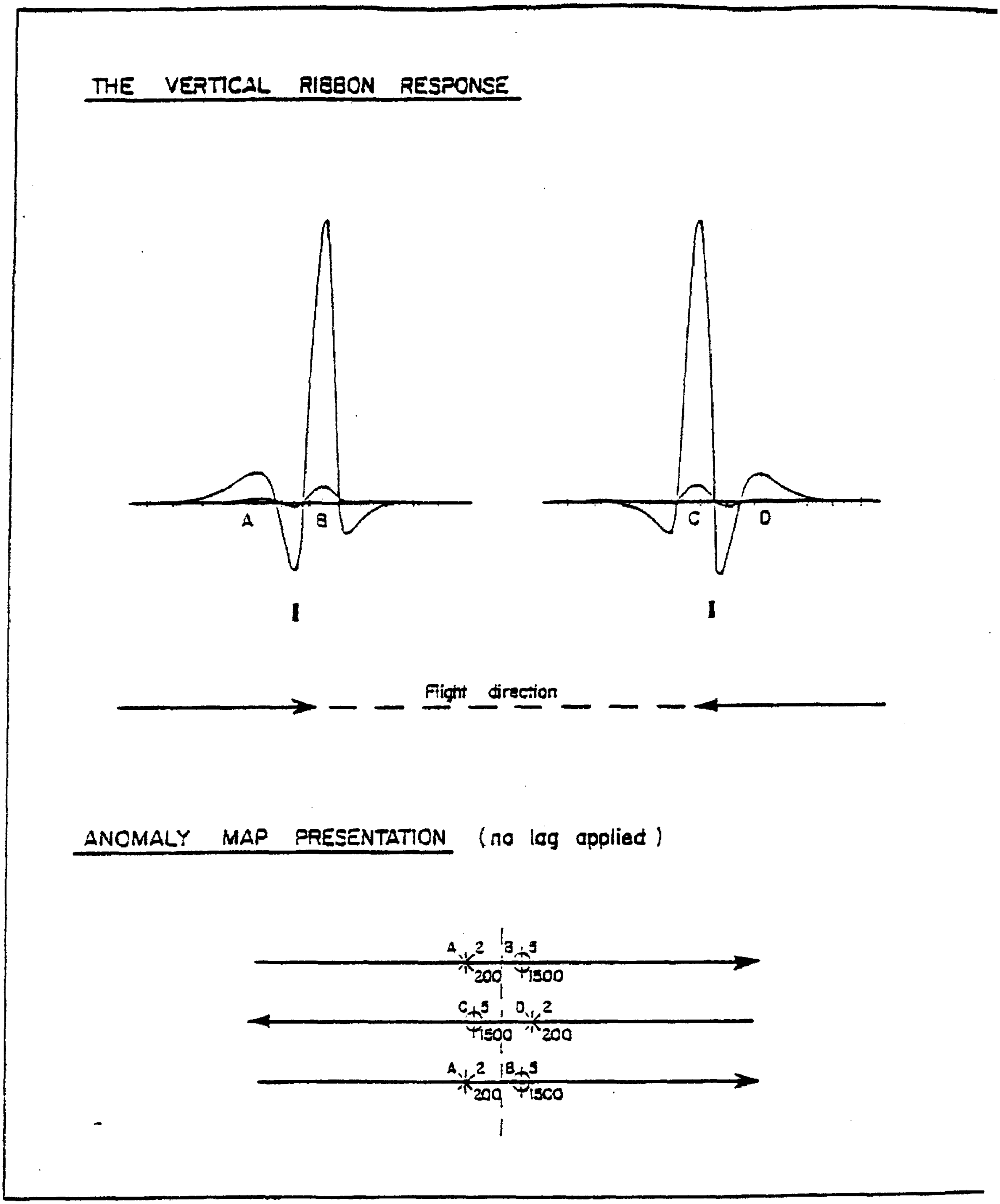
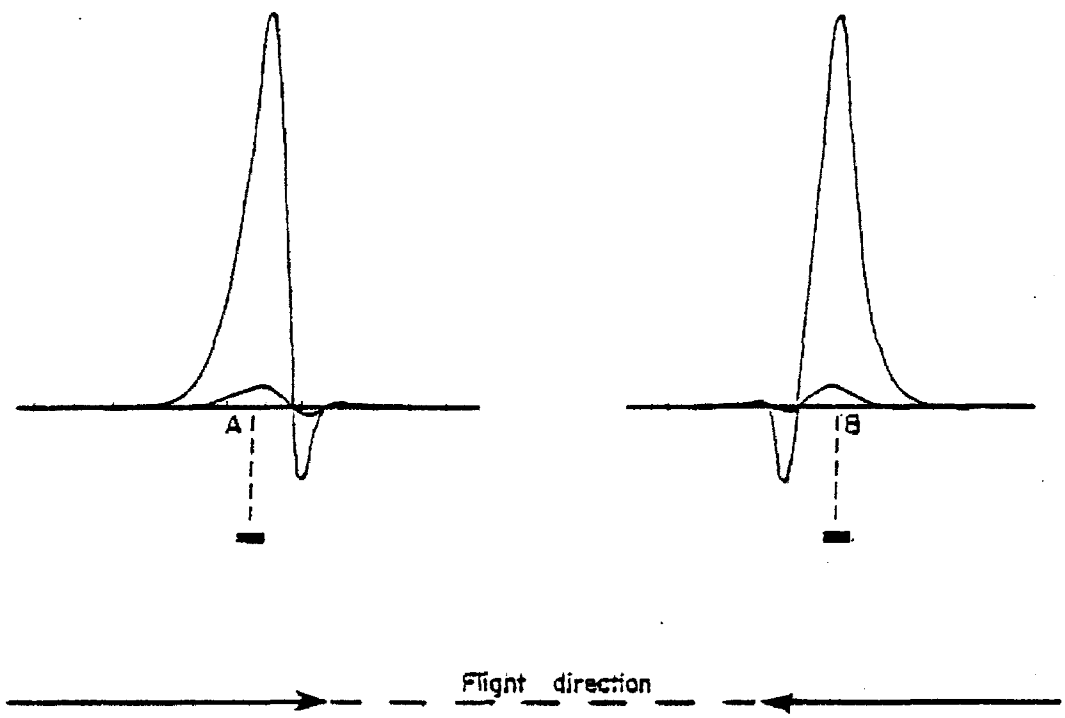

THE VERTICAL RIBBON RESPONSE
A
B
C
D
Flight direction
ANOMALY MAP PRESENTATION (no lag applied)
A 2
B 5
200
1500
C 5
D 2
1500
200
A 2
B 5
200
1500

Figure 5

THE HORIZONTAL RIBBON RESPONSE



ANOMALY MAP PRESENTATION (no lag applied)

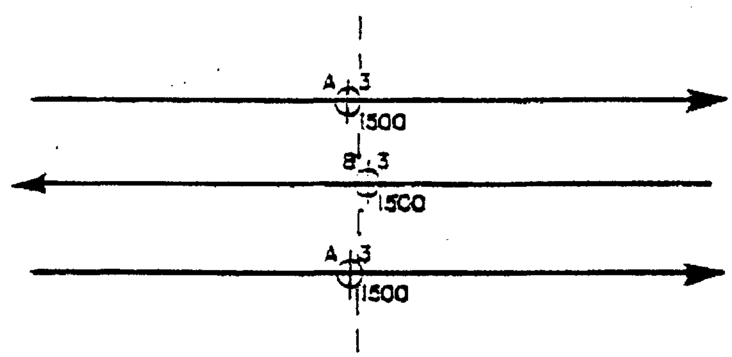


Figure 6

- a short strike length (in general, not exceeding one kilometre), and
- preferably, with a localized magnetic anomaly of matching dimensions.

The selection of targets from within extensive (formational) belts is much more difficult than in the case of isolated conductors. Local variations in the EM characteristics, such as in the amplitude, decay, shape etc., can be used as evidence for a relatively localized occurrence. Changes in the character of the EM responses, however, may be simply reflecting differences in the conductive formations themselves rather than indicating the presence of massive sulphides and, for this reason, the degree of confidence is reduced.

Another useful guide for identifying localized variations within formational conductors is to examine the magnetic data compiled as isomagnetic contours. Further study of the magnetic data can reveal the presence of faults, contacts and other features which, in turn, help define areas of potential economic interest.

Finally, once ground investigations begin, it must be remembered that the continual comparison of ground knowledge to the airborne information is an essential step in maximizing the usefulness of the GEOTEM data.

NIGHTHAWK LAKE GRID

I.P. PSUEDOSECTIONS

PLATE 1 of 1

FILTERED CHARGEABILITY/RESISTIVITY

MAGNETOMETER SURVEY

MCLEOD CREEK GRID

FILTERED CHARGEABILITY/RESISTIVITY

MAGNETOMETER SURVEY

MCLEOD CREEK GRID

FILTERED CHARGEABILITY/RESISTIVITY
MAGNETOMETER SURVEY

Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use): W9960.00167

Assessment Files Research Imaging

ction 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, this nent work and correspond with the mining land holder. Questions about this)evelopment and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario,

42A07NW2014 2.19363 THOMAS 900

Instructions: - For work performed on Crown Lands before **recording** a claim, use form 0240.
- Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

Name	BROWNSTONE RESOURCES INC.	Client Number	
Address	130 King St. W. P.O. Box 47	Telephone Number	(416) 941-1087
	Toronto ON M5X 1A9	Fax Number	(416) 941-1090
		Client Number	
Address		Telephone Number	
		Fax Number	

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

- [x] Geotechnical: prospecting, surveys, assays and work under section 18 (regs)
- [ ] Physical: drilling stripping, trenching and associated assays
- [ ] Rehabilitation

Work Type: Linecutting, Magnetometer and Induced Polarization Surveys

Dates Work Performed: From 25 (Day) Feb (Month) 1999 (Year) To 22 (Day) March (Month) 1999 (Year)

Global Positioning System Data (if available):

Township/Area: Thomas Township

M or G-Plan Number:

Office Use	
Commodity	
Total $ Value of Work Claimed	$29,119
NTS Reference	
Mining Division	Porcupine
Resident Geologist District	Timmins

Please remember to:
- obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name	GEOPHYSICAL ENGINEERING AND SURVEYS INC.	Telephone Number	(705) 268-4866
Address	170 Second Avenue, P.O. Box 15, Timmins ON P4N 7C5	Fax Number	(705) 360-7733
Name		Telephone Number	
Address		Fax Number	
Name		Telephone Number	
Address		Fax Number	

4. Certification by Recorded Holder or Agent

I, THOMAS E. BURNS (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent: Thomas E Burns		Date April 13, 1999
Agent's Address: 24 Jacob Dr. Whitby ON L1P 1B1	Telephone Number (905) 668-3796	Fax Number (905) 668-7245

0241 (03/97)

Deemed on July 13/99

RECEIVED 11:00 a.m. APR 14 1999 GEOSCIENCE ASSESSMENT OFFICE

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

W9960.00167

	Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	**Number of Claim Units.** For other mining land, list hectares.	**Value of work performed** on this claim or other mining land.	**Value of work applied** to this claim.	**Value of work assigned** to other mining claims.	**Bank.** Value of work to be distributed at a future date
eg	TB 7827	16 ha	$26,825	N/A	$24,000	$2,825
eg	1234567	12	0	$24,000	0	0
eg	1234568	2	$ 8,892	$ 4,000	0	$4,892
1	P1223582	16	$20,029	$6,400	$13,629	$5,119
2	P1214572	16	0	$6,400	0	
3	P1214571	8	0	$3,200	0	
4	P1214570	4	0	$1,600	0	
5	P1214569	16	$9,090	$6,400	$2,690	
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
	Column Totals					

I, Thomas E. Burns (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing	Date
Thomas E Burns	April 13, 1999

6. Instruction for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- ☑ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- ☑ 2. *Credits are to be cut back starting with the claims listed last, working backwards; or*
- ☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or
- ☐ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: *If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first,* followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
	Approved for Recording by Mining Recorder (Signature)	

0241 (03/97)

RECEIVED
11:00 a.m.
APR 14 1999
GEOSCIENCE ASSESSMENT OFFICE

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use) W9960.00167

Personal information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, this information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of work Depending on the type of work, list the number of hours/day worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
Magnetometer Survey	18.9 kilometres	$ 96.09	$ 1,816.00
Induced Polarization Survey	16.7 kilometres	$ 1,261.12	$ 21,061.00
Line Cutting	18.9 kilometres	$ 330.29	$ 6,242.00
Associated Costs (e.g. supplies, mobilization and demobilization).			
Transportation Costs			
Food and Lodging Costs			
		Total Value of Assessment Work	$ 29,119.00

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK x 0.50 = Total $ value of worked claimed.

Note:

- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, Thomas E. Burns, (please print full name) do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as the agent for BROWNSTONE RESOURCES INC. I am authorized to make this certification. (recorded holder, agent, or state company position with signing authority)

Signature: Thomas E Burns Date: April 13, 1999

0212 (03/97)

RECEIVED 11:00 a.m. APR 14 [illegible] GEOSCIENCE ASSESSMENT OFFICE

2.19363

Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

Ontario

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (877) 670-1555

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

May 12, 1999

BROWNSTONE RESOURCES INC.
130 KING STREET W.
P.O. BOX 47
TORONTO, ON
M5X 1A9

Submission Number: 2.19363

Dear Sir or Madam:

Subject: Transaction Number(s):		**Status**
	W9960.00167	Deemed Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Lucille Jerome by e-mail at lucille.jerome@ndm.gov.on.ca or by telephone at (705) 670-5858.

Yours sincerely,

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 13738

Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.19363

Date Correspondence Sent: May 12, 1999 **Assessor:** Lucille Jerome

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9960.00167	1223582	THOMAS	Deemed Approval	April 28, 1999

Section:
14 Geophysical IP
14 Geophysical MAG

Correspondence to:
Resident Geologist
South Porcupine, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):
BROWNSTONE RESOURCES INC.
TORONTO, ON

Correspondence ID: 13738

MAP SYMBOLOGY

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY

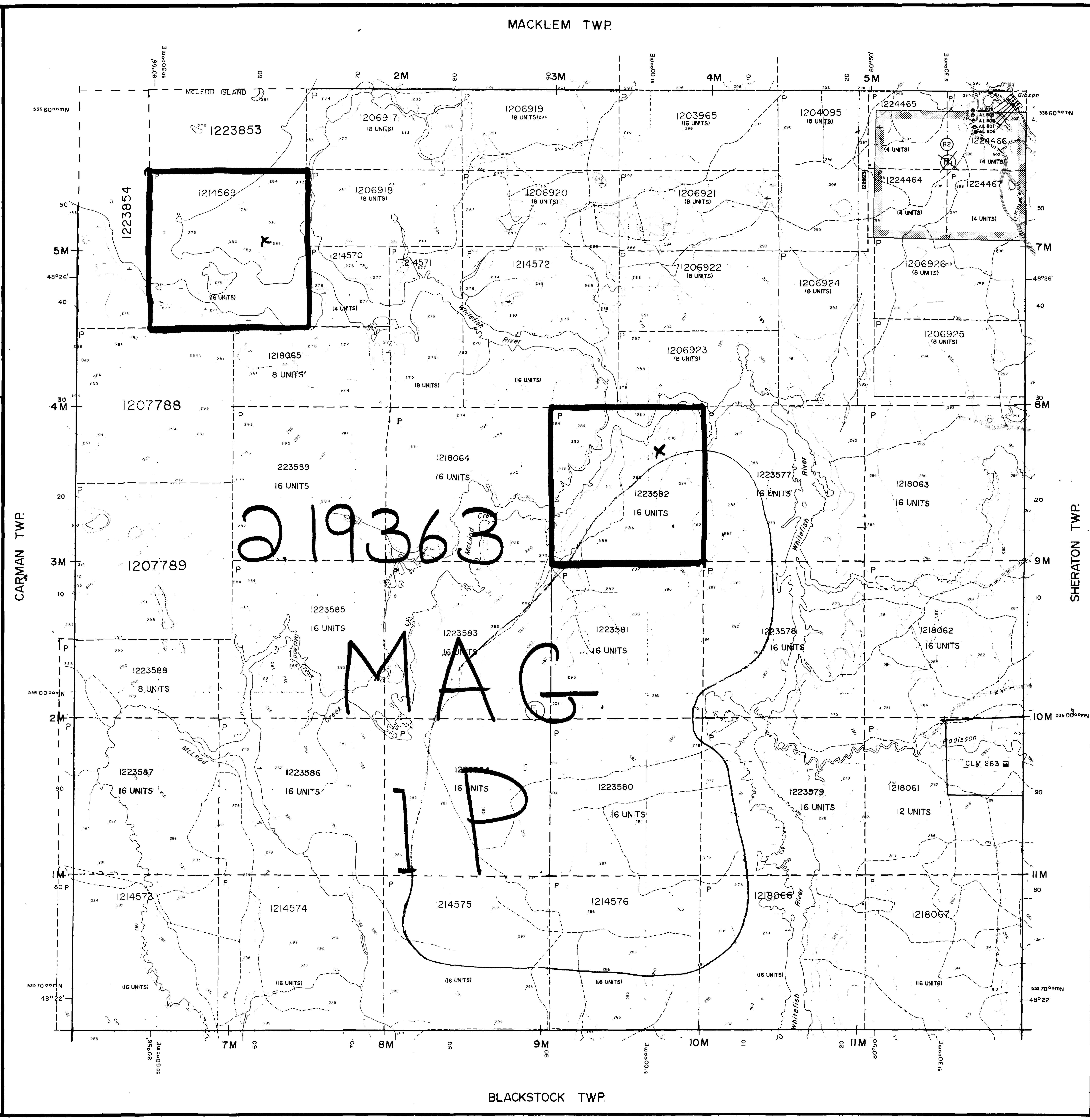
S.R.O. – SURFACE RIGHTS ONLY

M.+ S. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
~~(R1) SEC 36/80 (GEOLOGICAL/GEOPHYSICAL TESTING RANGE)~~	~~NRW 16/82~~		~~M.+ S.~~	

(R2) — MINING AND SURFACE RIGHTS RE-OPENED UNDER SECTION 35 OF THE MINING ACT, R.S.O. 1990 ORDER NO. O-P-13/97 NER DATED MAY 16/97, ORDER COMES INTO EFFECT AT 8AM STD TIME, JUNE 1, 1997.

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.



LEGEND

HIGHWAY AND ROUTE No.
OTHER ROADS
TRAILS
SURVEYED LINES:
TOWNSHIPS, BASE LINES, ETC.
LOTS, MINING CLAIMS, PARCELS, ETC.
UNSURVEYED LINES:
LOT LINES
PARCEL BOUNDARY
MINING CLAIMS ETC.
RAILWAY AND RIGHT OF WAY
UTILITY LINES
NON-PERENNIAL STREAM
FLOODING OR FLOODING RIGHTS
SUBDIVISION OR COMPOSITE PLAN
RESERVATIONS
ORIGINAL SHORELINE
MARSH OR MUSKEG
MINES
TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	
" , MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	
" , MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	(R)
CANCELLED	⊗
SAND & GRAVEL	(S)

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC 1

Metres 500 0 1000 Metres
Chains 10 0 10 20 30 40 50 60 70 Chains
Feet 500 0 1000 2000 3000 4000 5000 Feet

SCALE 1:20 000
GRID ZONE: 17

RESERVE FLOODING RIGHTS TO H.E.P.C. OF ONTARIO TO ELEVATION 903.5 T. & N.O. RAILWAY DATUM ON NIGHT HAWK LAKE.

(F) THIS TWP. IS SUBJECT TO FOREST ACTIVITY IN 1995/96 FURTHER INFORMATION AVAILABLE ON FILE.

DATE OF ISSUE
APR 3 0 1999
PROVINCIAL RECORDING OFFICE - SUDBURY

TOWNSHIP
THOMAS

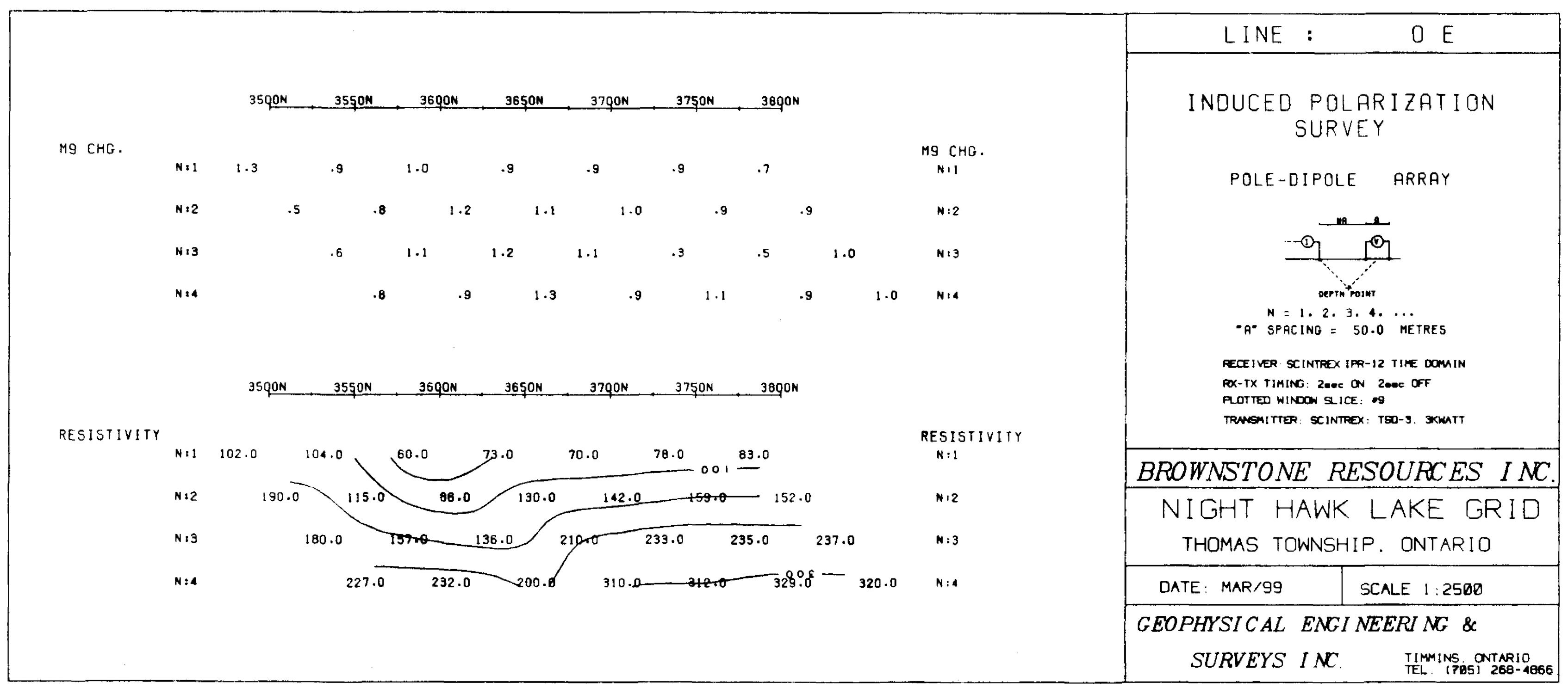
M.N.R. ADMINISTRATIVE DISTRICT
TIMMINS
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE

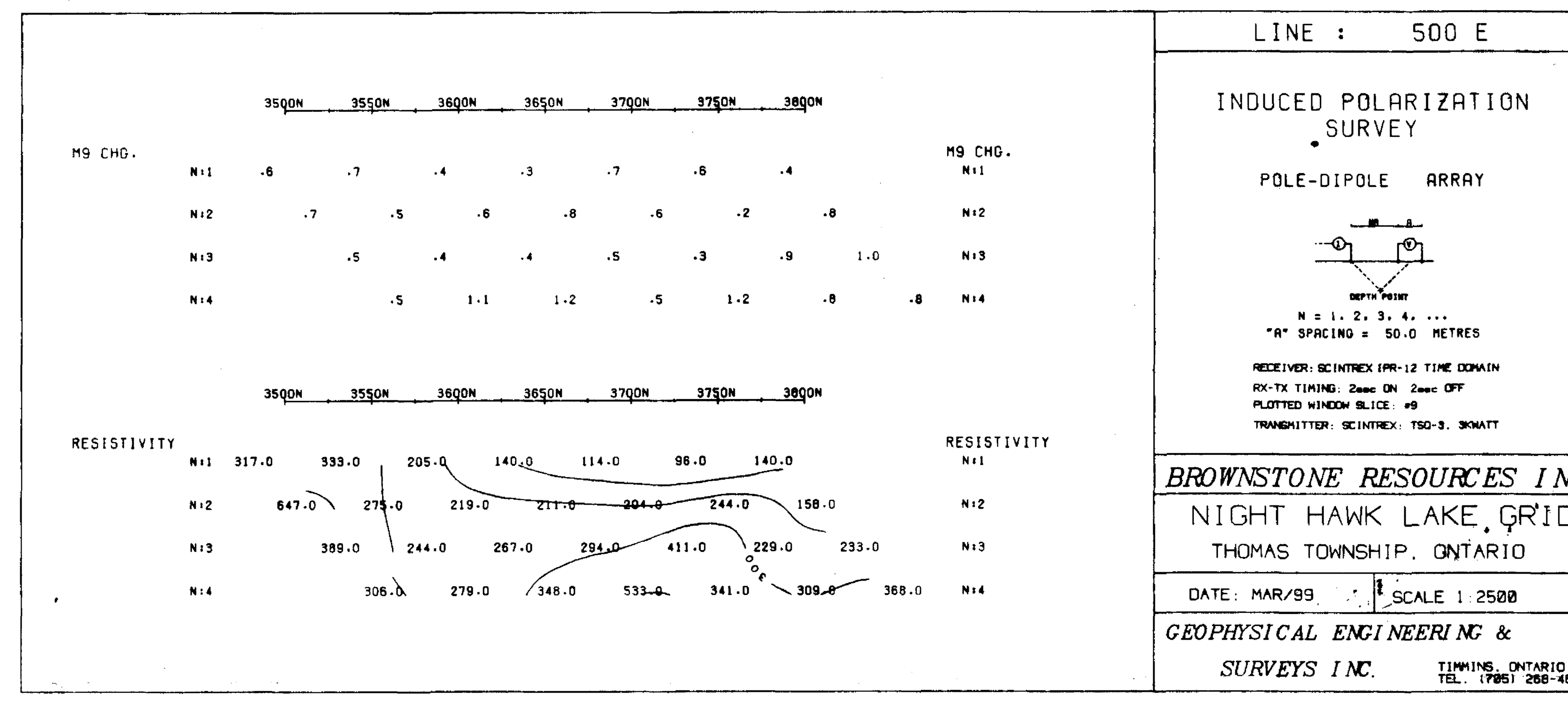
Ontario — Ministry of Natural Resources — Land Management Branch

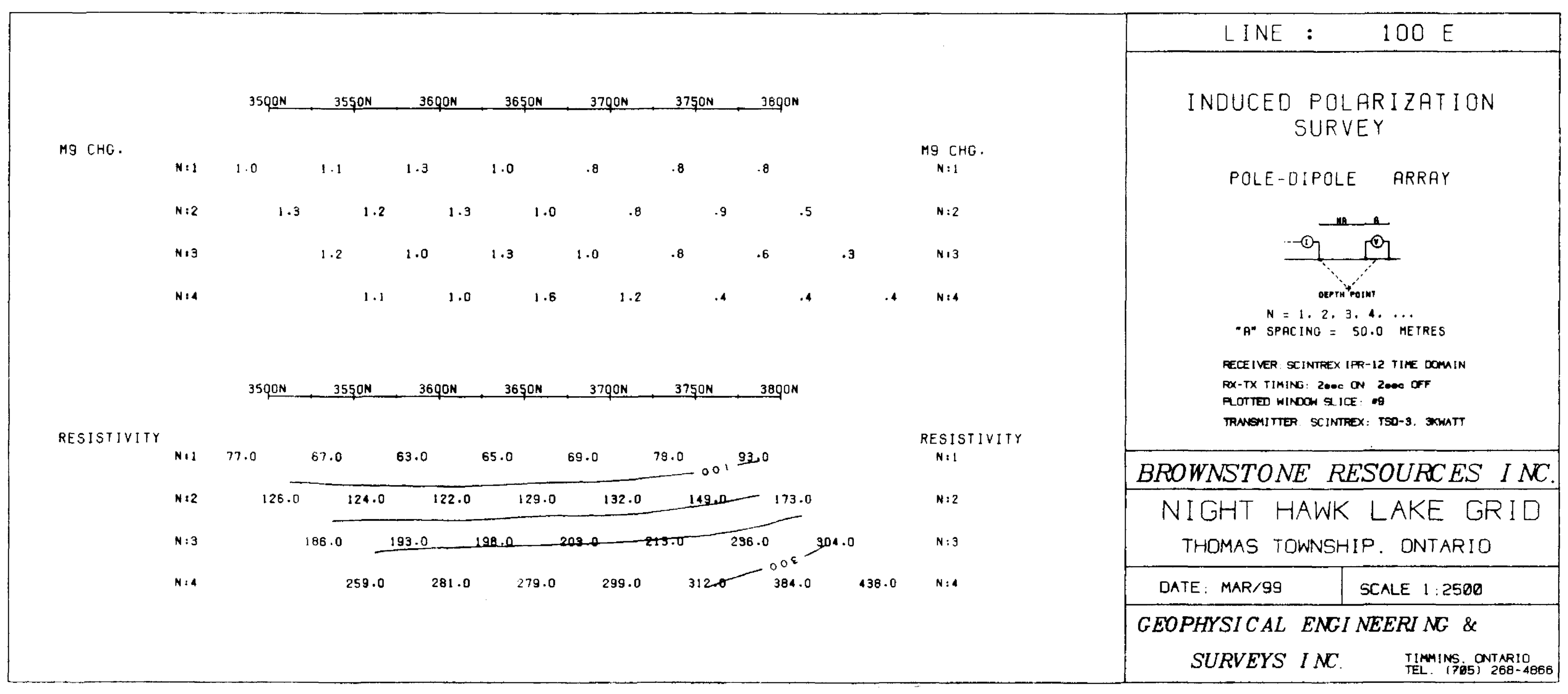
ORIGINAL COMPILATION JULY, 1984
REVISED: ACTIVATED NOV. 27/96 BY: D.C. CHECKED BY: D.M.

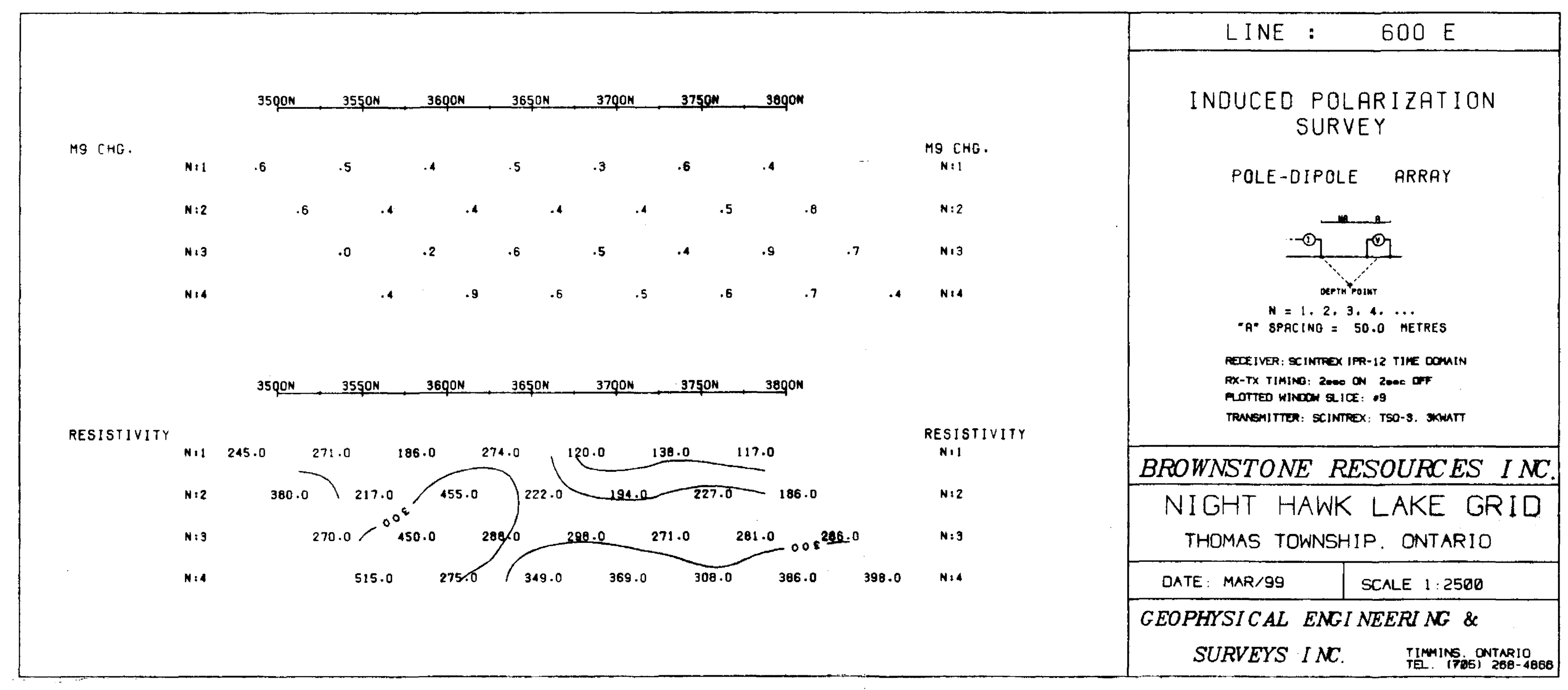
Number
G-3977

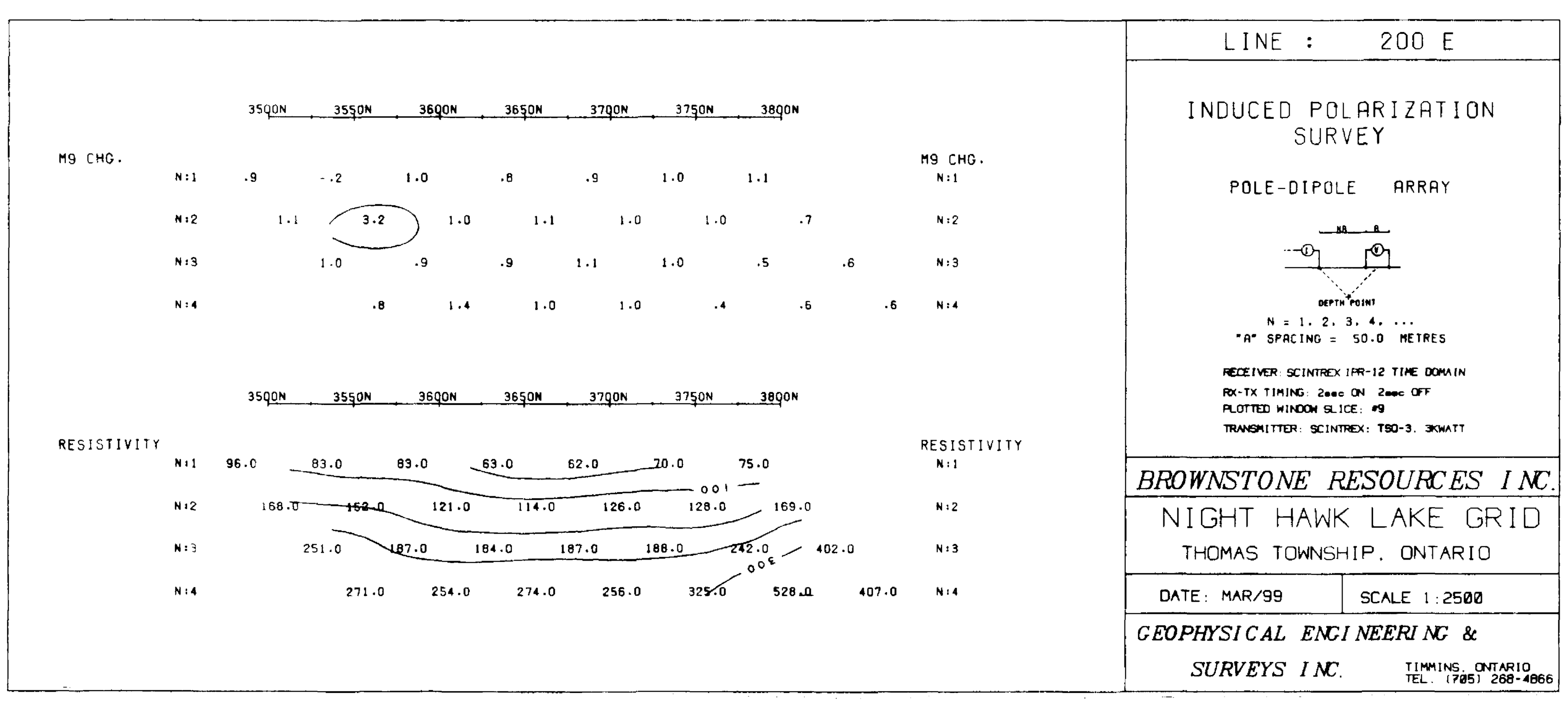
200
42A07NW2014 2.19363 THOMAS

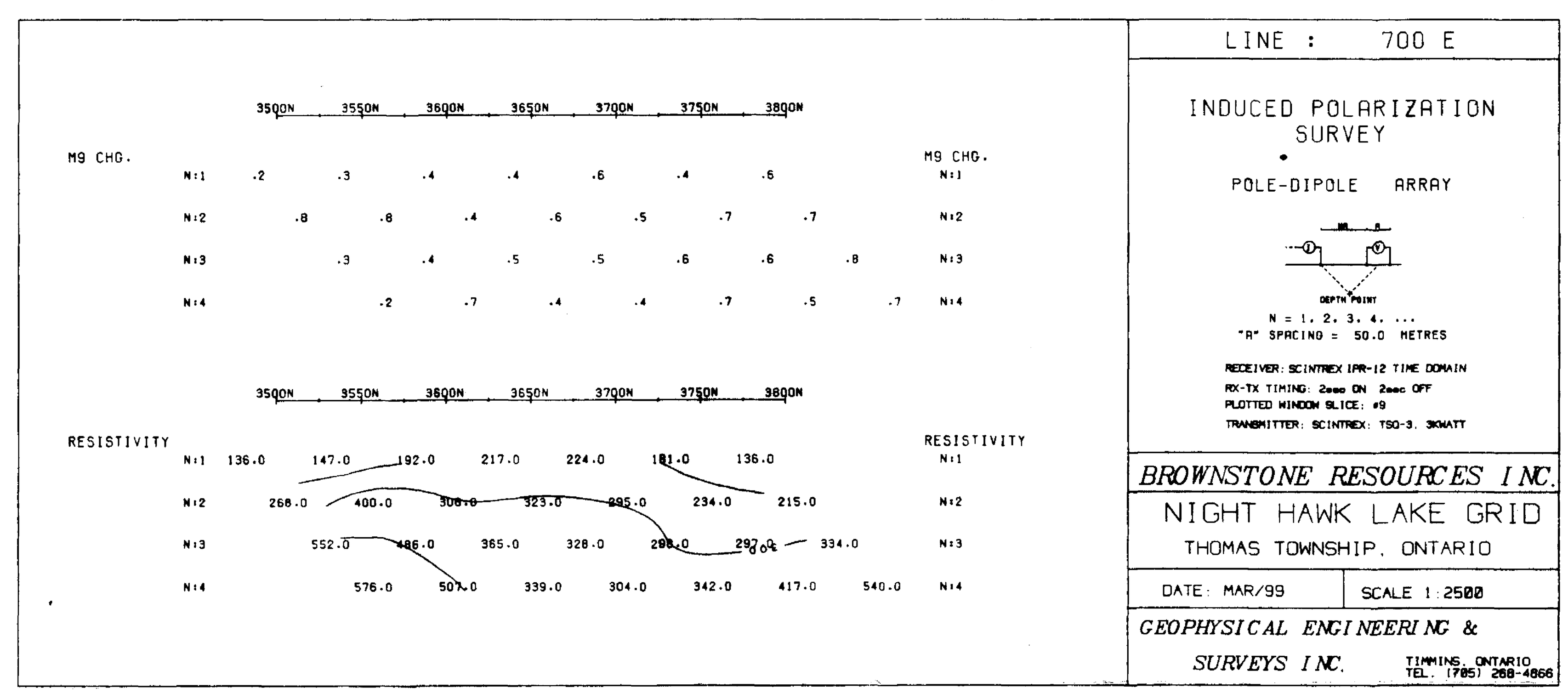


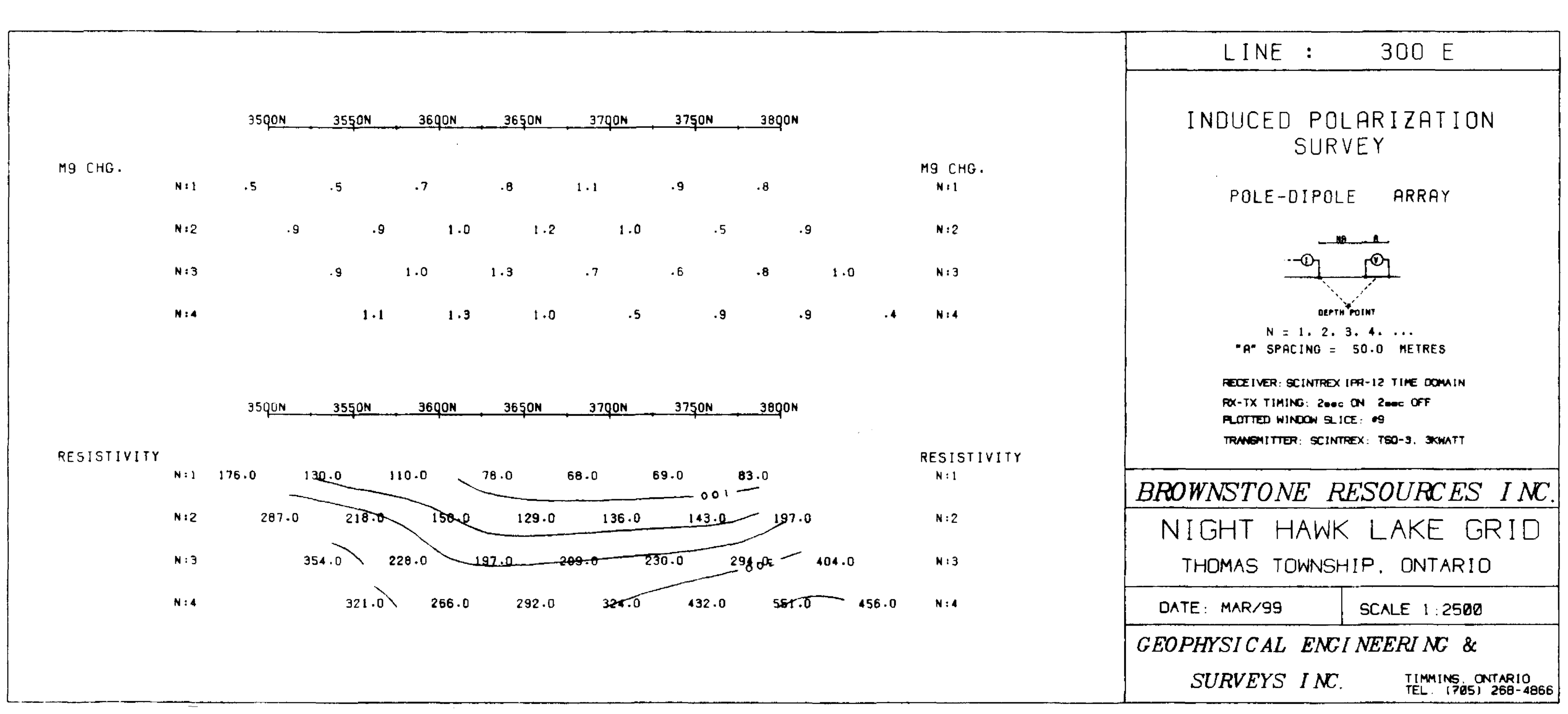


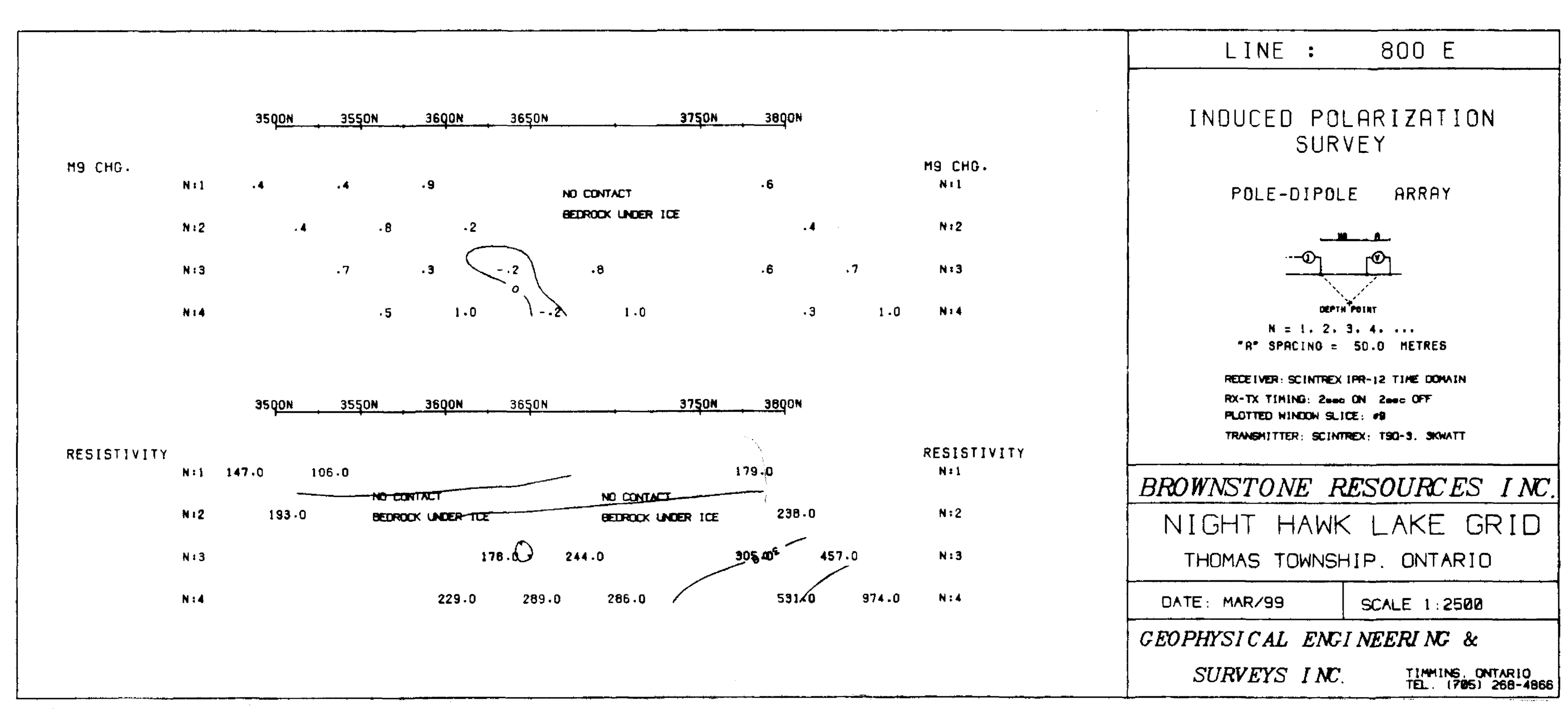


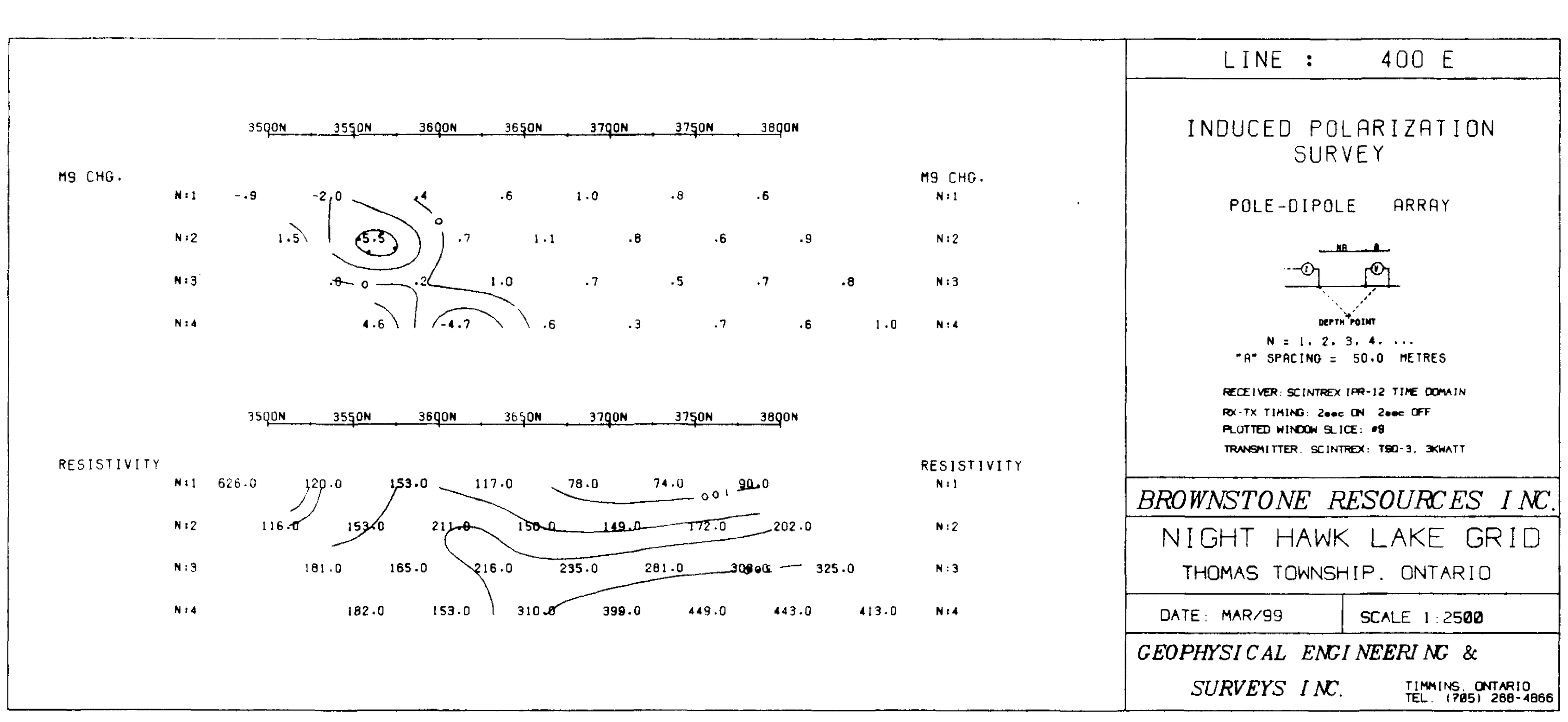


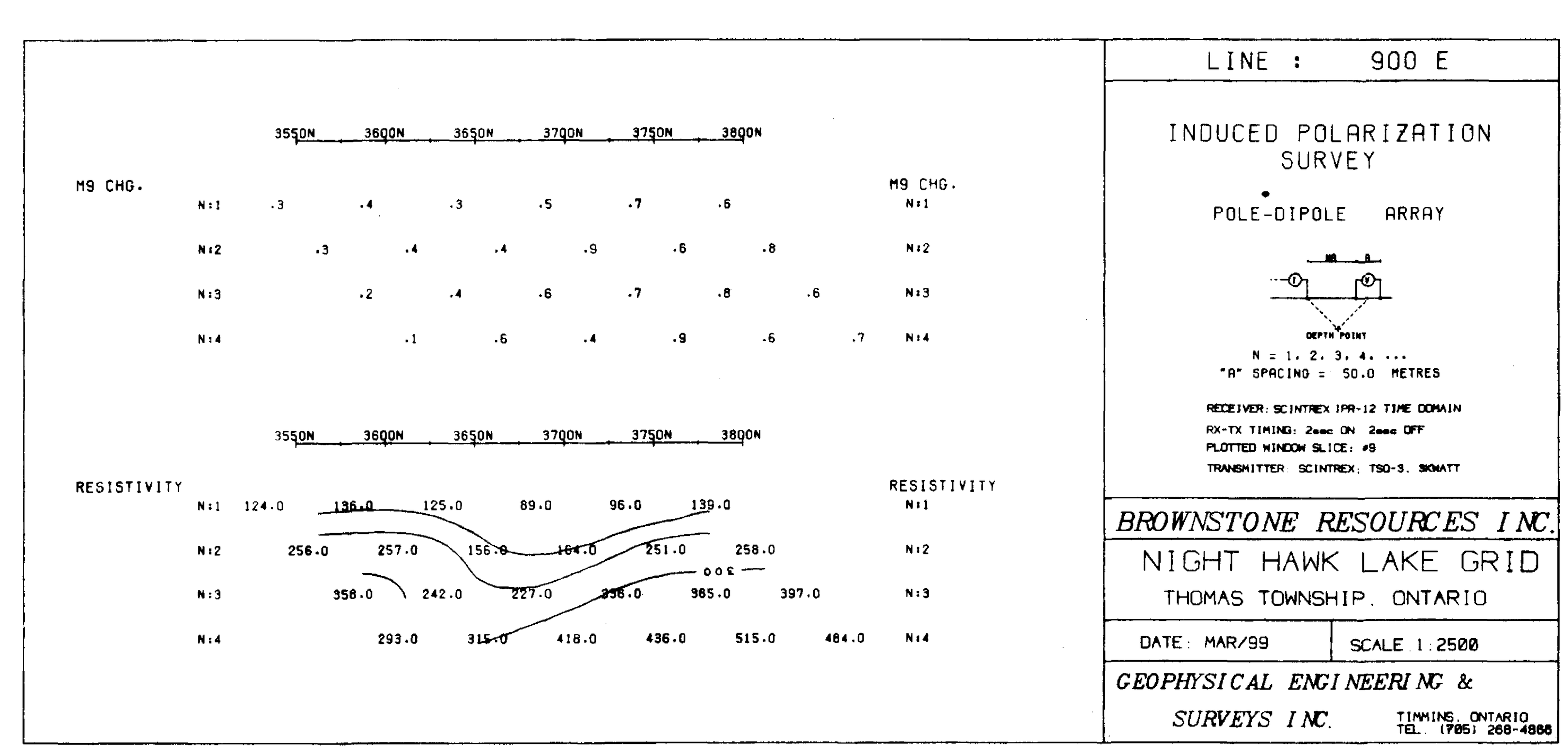












BROWNSTONE RESOURCES INC.

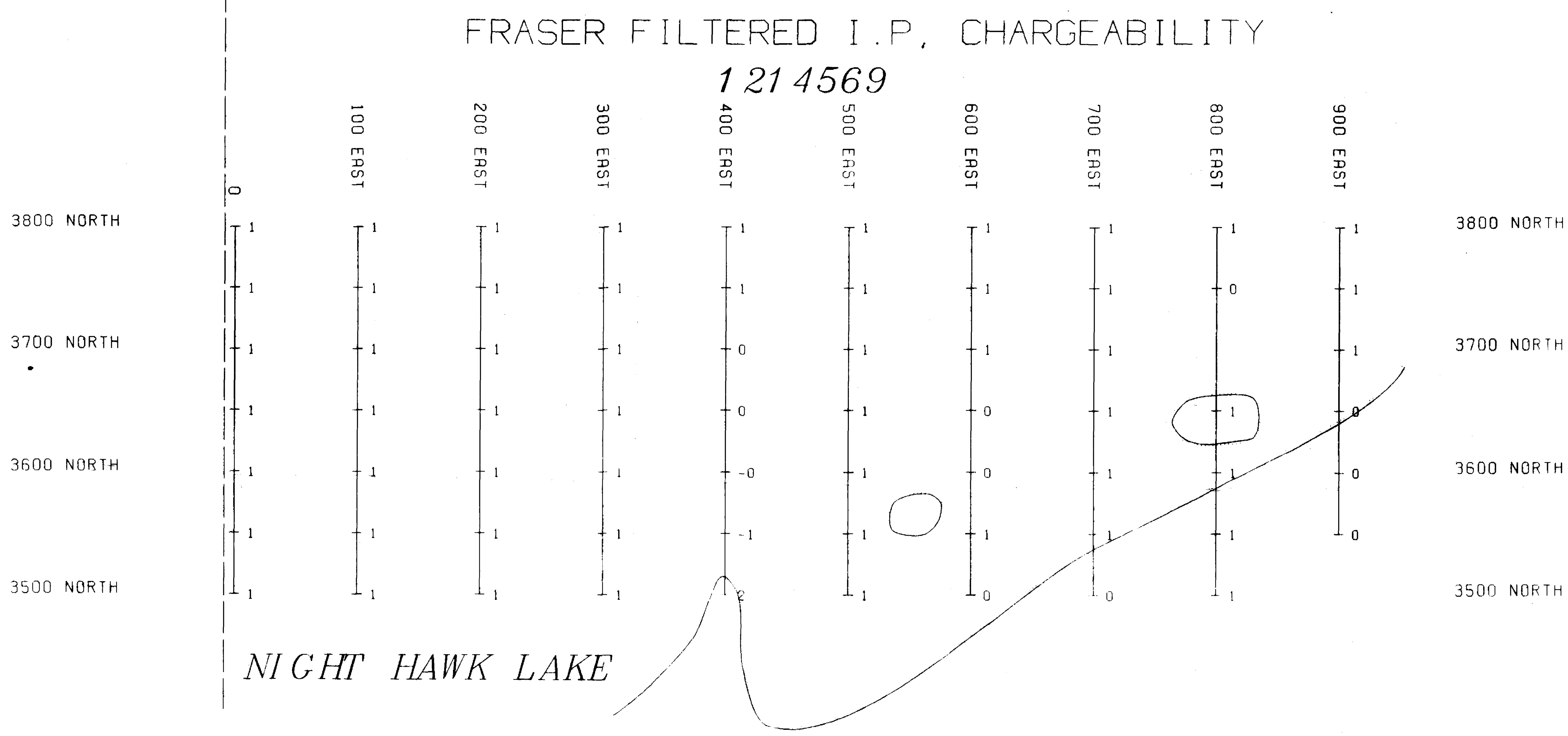
I.P. PSUEDOSECTIONS

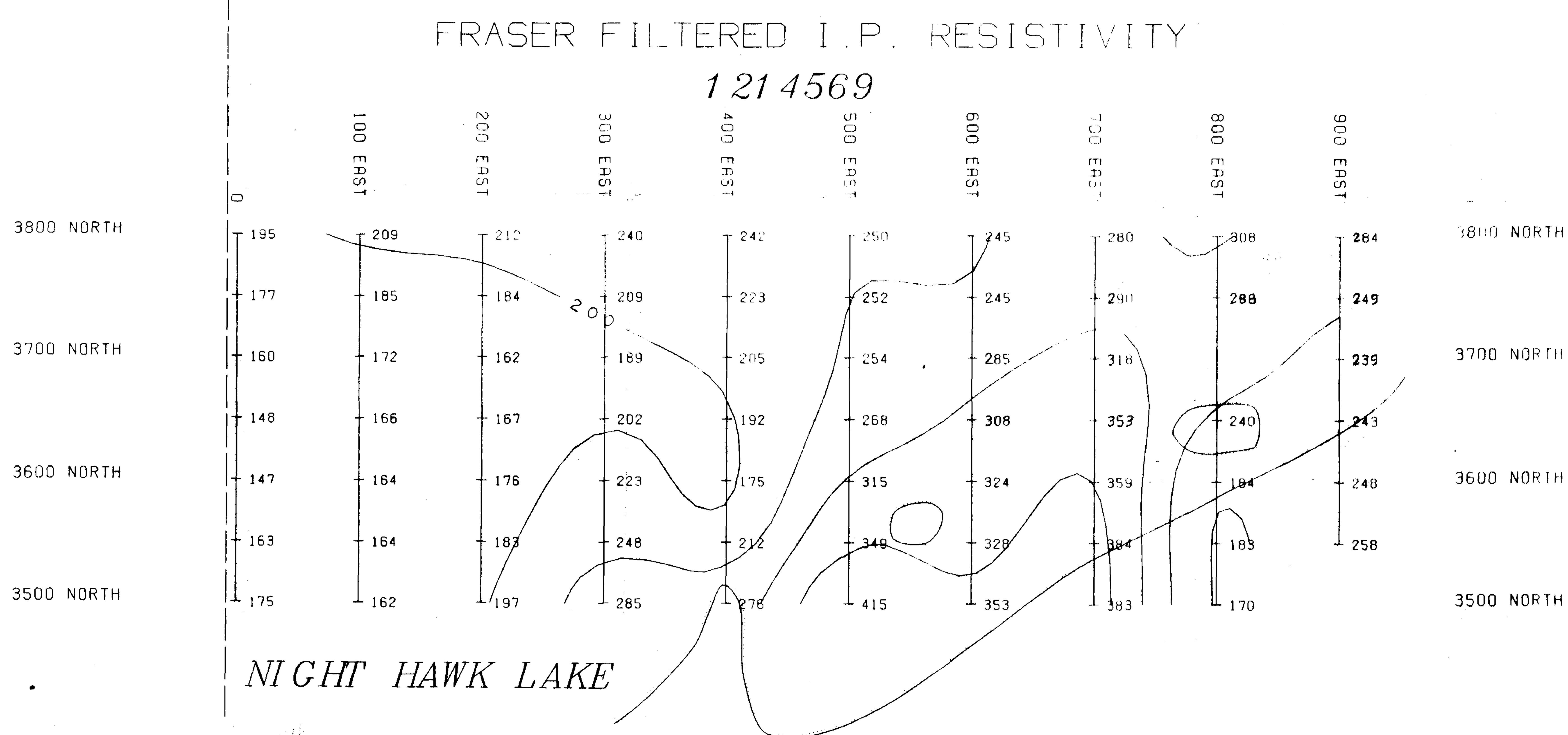
PLATE 1 of 1

1:2500

NIGHT HAWK LAKE GRID

THOMAS TWP., ONTARIO





LEGEND

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #9
TRANSMITTER: SCINTREX TSQ-3 3 KVA
CONTOUR INTERVAL: CHARGEABILITY = 1 UNIT
RESISTIVEITY = 50 OHM-METERS

2.19363

RECEIVED
APR 14 1999
GEOSCIENCE ASSESSMENT OFFICE

200 100 0 50 100 150 200

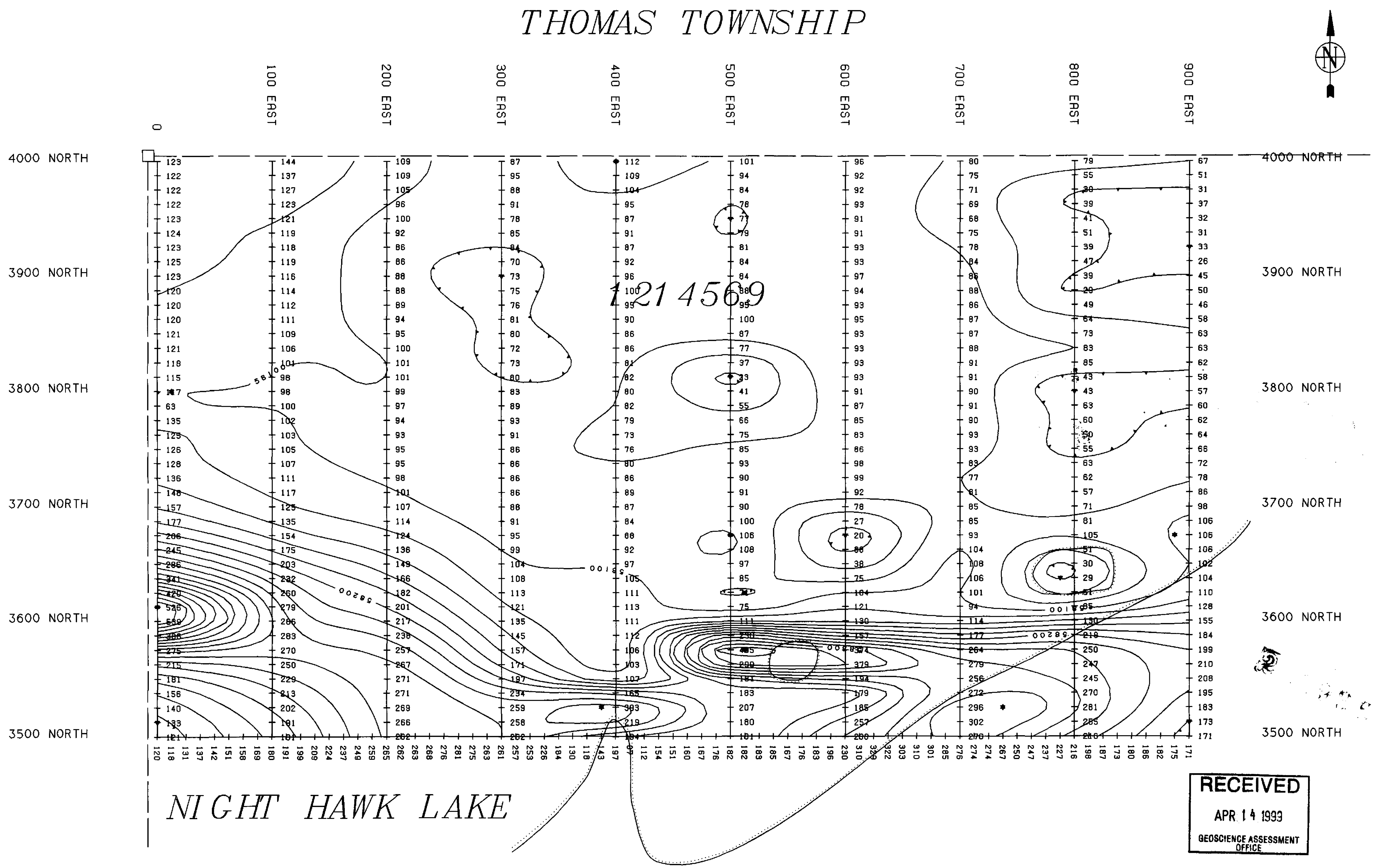
Client: **BROWNSTONE RESOURCES INC.**

Property: NIGHT HAWK LAKE GRID

Title: FRASER FILTERED I.P. CHARGEABILITY & RESISTIVITY

Processed: R.J. MEIKLE	Checked: R.J.M	**GEOPHYSICAL ENGINEERING & SURVEYS INC.**
Date: MARCH 1999	TWP: THOMAS	
Province: ONTARIO	N.T.S.:	
Scale: 1:2500	DWG: FFCHGRES	TIMMINS, ONTARIO TEL. (705) 268-4866

42A07NW2014 2.19363 THOMAS 220



RECEIVED
APR 14 1999
GEOSCIENCE ASSESSMENT OFFICE

100 0 50 100

TOPO LEGEND

- SHORE LINE
- ROAD
- HYDRO LINE
- CLAIM POST ASSUMED
- CLAIM POST LOCATED
- CLAIM LINE
- LOT AND CONCESSION LINE
- RAIL LINE

LEGEND

INSTRUMENT: GEM GSM-19 PROTON PRECESSION MAGNETOMETER

PARAMETERS MEASURED: EARTH'S TOTAL MAGNETIC FIELD (NANO-TESLAS)

READING INTERVAL: 12.5 METERS

CONTOUR INTERVAL: 20 NANO-TESLAS

DIURNAL CORRECTION METHOD: RECORDING GEM GSM-19 BASE STATION

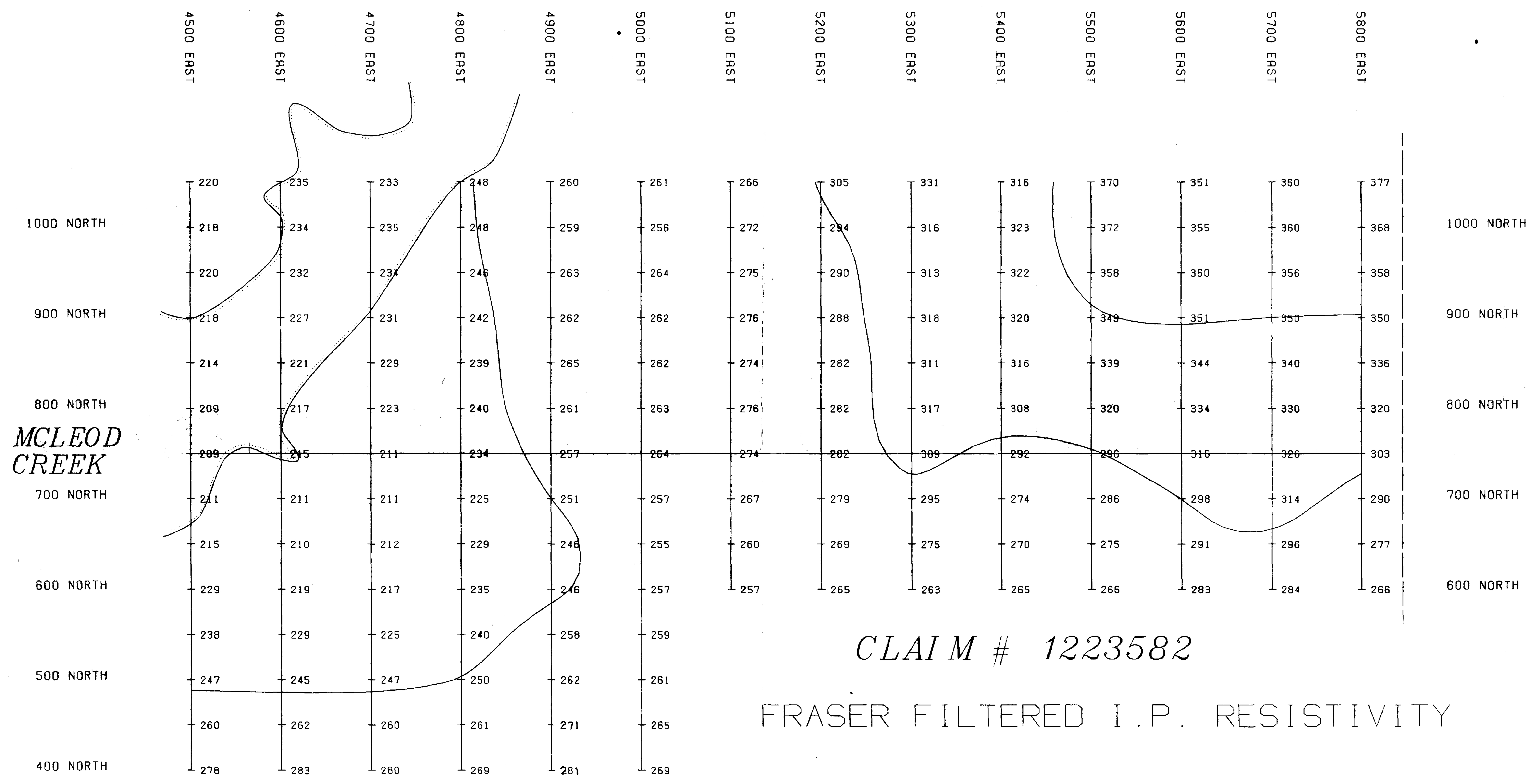
DATUM SUBTRACTED FROM ALL PLOTTED READINGS: 58000 nT

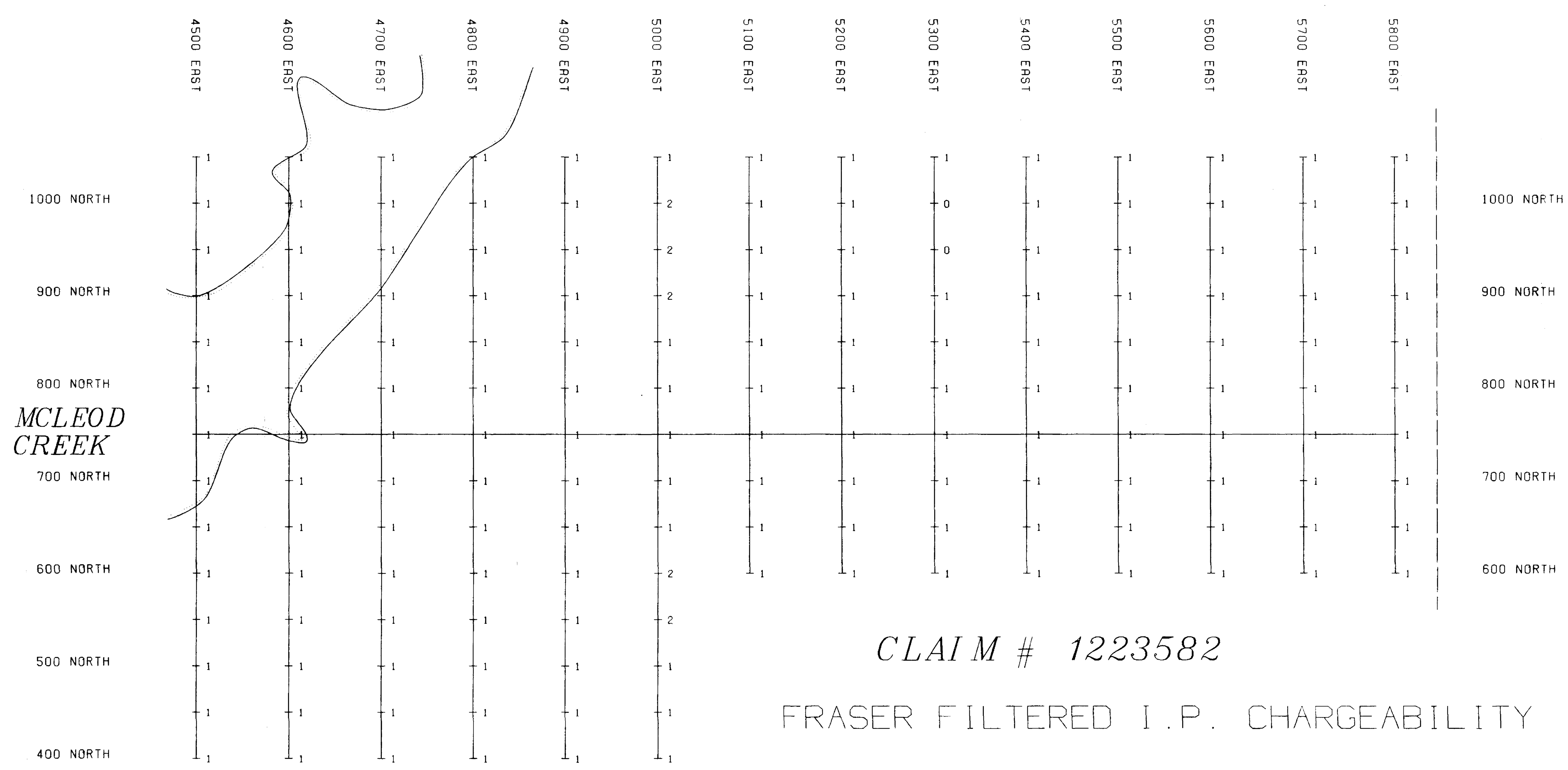
Client: *BROWNSTONE RESOURCES INC.*

Property: NIGHT HAWK LAKE GRID

Title: TOTAL FIELD MAGNETOMETER SURVEY POSTED AND CONTOURED

Processed: R.J. MEIKLE	Checked: RJM	*GEOPHYSICAL ENGINEERING & SURVEYS INC.* TIMMINS ONTARIO
Date: MARCH 1999	Township: THOMAS	
Province: ONTARIO	N.T.S.:	
Scale: 1:2500	Drawing:	





LEGEND

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #9
TRANSMITTER: SCINTREX TSQ-3 3 KVA
CONTOUR INTERVAL: CHARGEABILITY = 1 UNIT
RESISTIVEITY = 50 OHM-METERS

200 100 0 50 100 150

RECEIVED APR 14 1999 GEOSCIENCE ASSESSMENT OFFICE

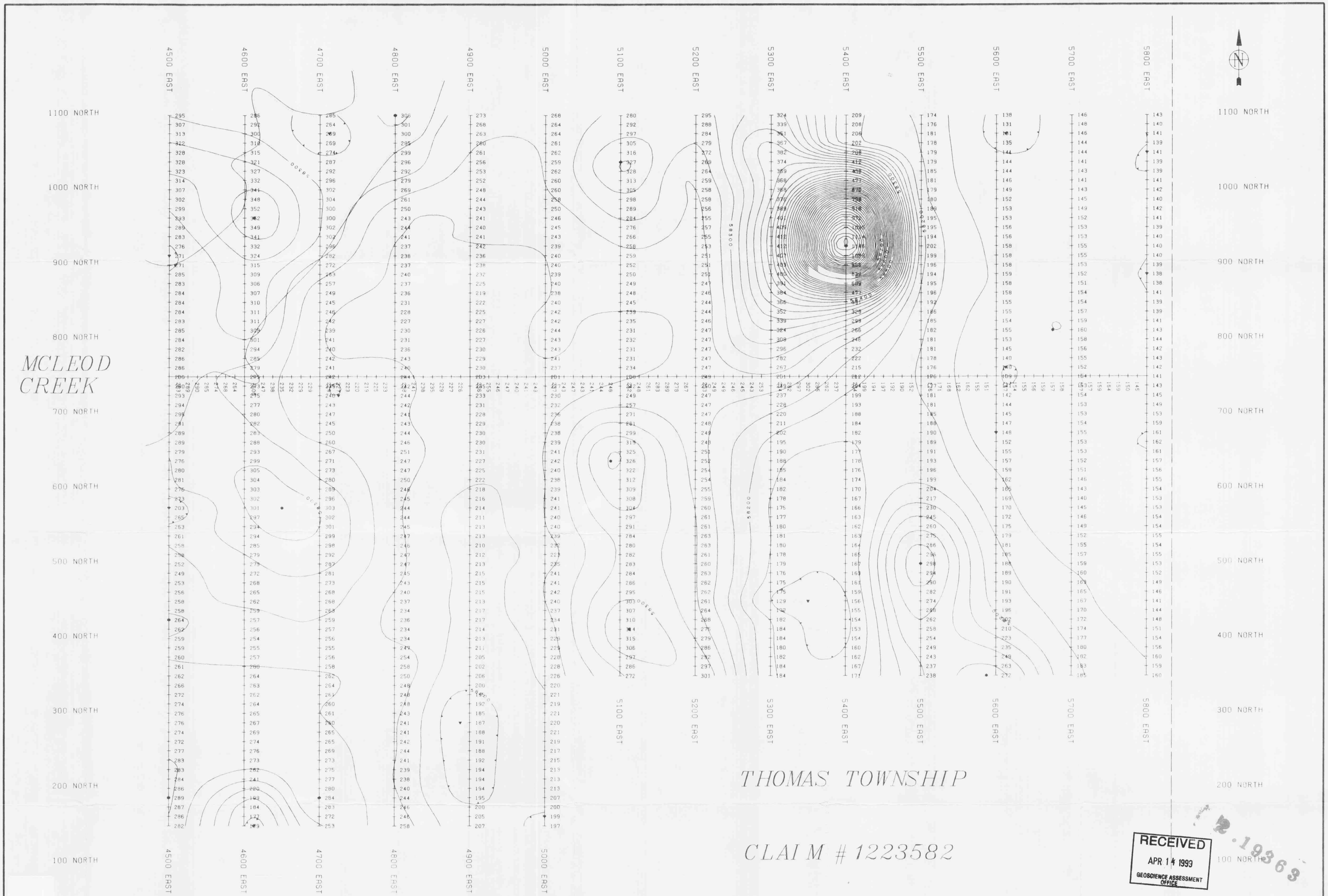
2.19363

Client: BROWNSTONE RESOURCES INC.

Property: MCLEOD CREEK GRID

Title: FRASER FILTERED I.P. CHARGEABILITY & RESISTIVITY

Processed: R.J. MEIKLE	Checked: RJM	GEOPHYSICAL ENGINEERING & SURVEYS INC.
Date: MARCH 1999	TWP: THOMAS	
Province: ONTARIO	N.T.S.:	
Scale: 1:2500	DWG: FFCHGRES	TIMMINS, ONTARIO TEL. (705) 268-4866



TOPO LEGEND

SHORE LINE
ROAD
HYDRO LINE
CLAIM POST ASSUMED
CLAIM POST LOCATED
CLAIM LINE
LOT AND CONCESSION LINE
RAIL LINE

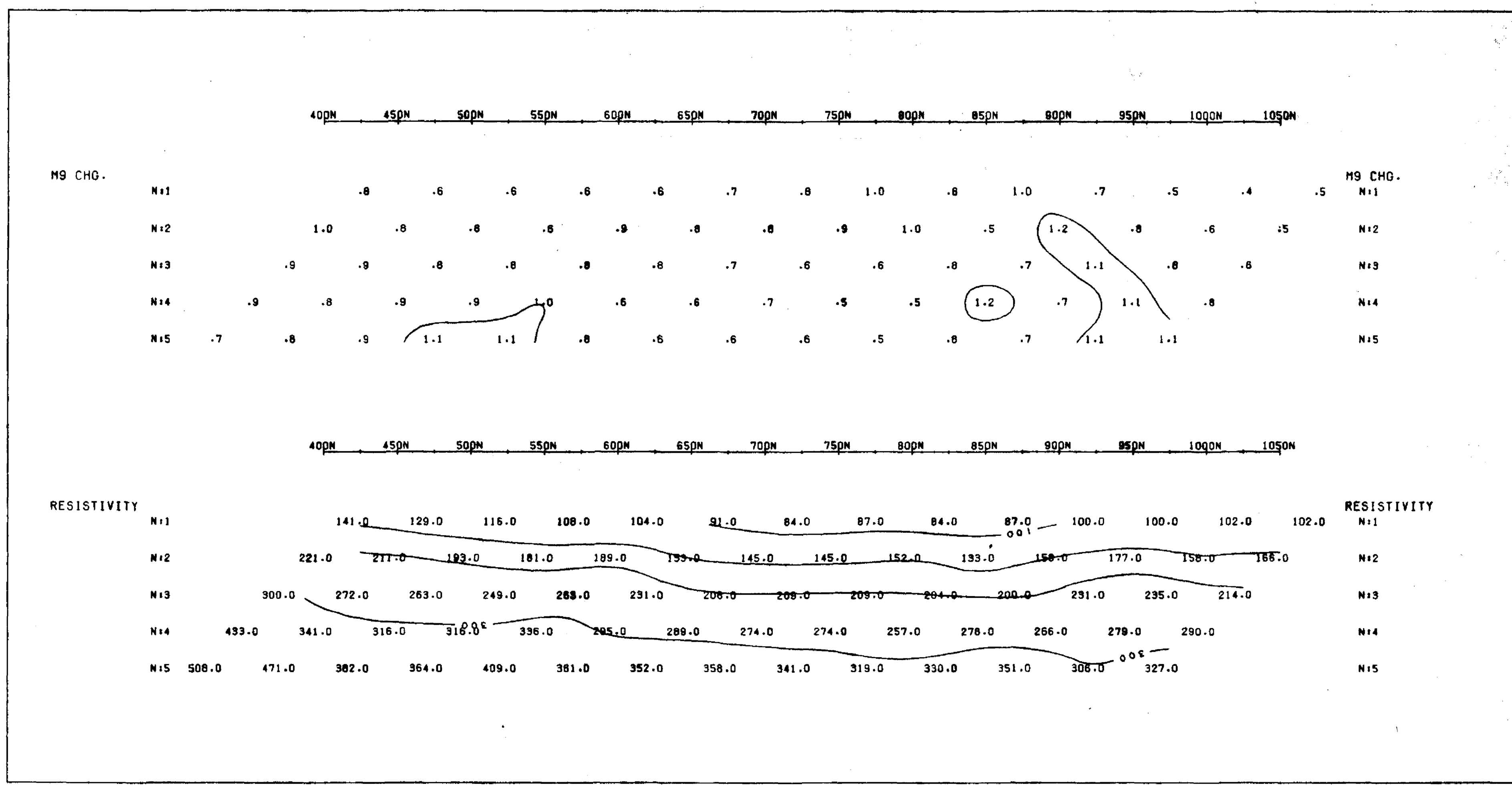
LEGEND

INSTRUMENT: GEM GSM-19 PROTON PRECESSION MAGNETOMETER
PARAMETERS MEASURED: EARTH S TOTAL MAGNETIC FIELD (NANO-TESLAS)
READING INTERVAL: 12.5 METERS
CONTOUR INTERVAL: 20 NANO-TESLAS
DIURNAL CORRECTION METHOD: RECORDING GEM GSM-19 BASE STATION
DATUM SUBTRACTED FROM ALL PLOTTED READINGS: 58000 nT

Client: BROWNSTONE RESOURCES INC.
Property: MCLEOD CREEK GRID
Title: TOTAL FIELD MAGNETOMETER SURVEY POSTED AND CONTOURED

Processed: R.J. MEIKLE	Checked: RJM	GEOPHYSICAL ENGINEERING & SURVEYS INC. TIMMINS ONTARIO
Date: MARCH 1999	Township: THOMAS	
Province: ONTARIO	N.T.S.:	
Scale: 1:2500	Drawing:	

42A07NW2014 2.19363 THOMAS 250



LINE : 4500 E

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

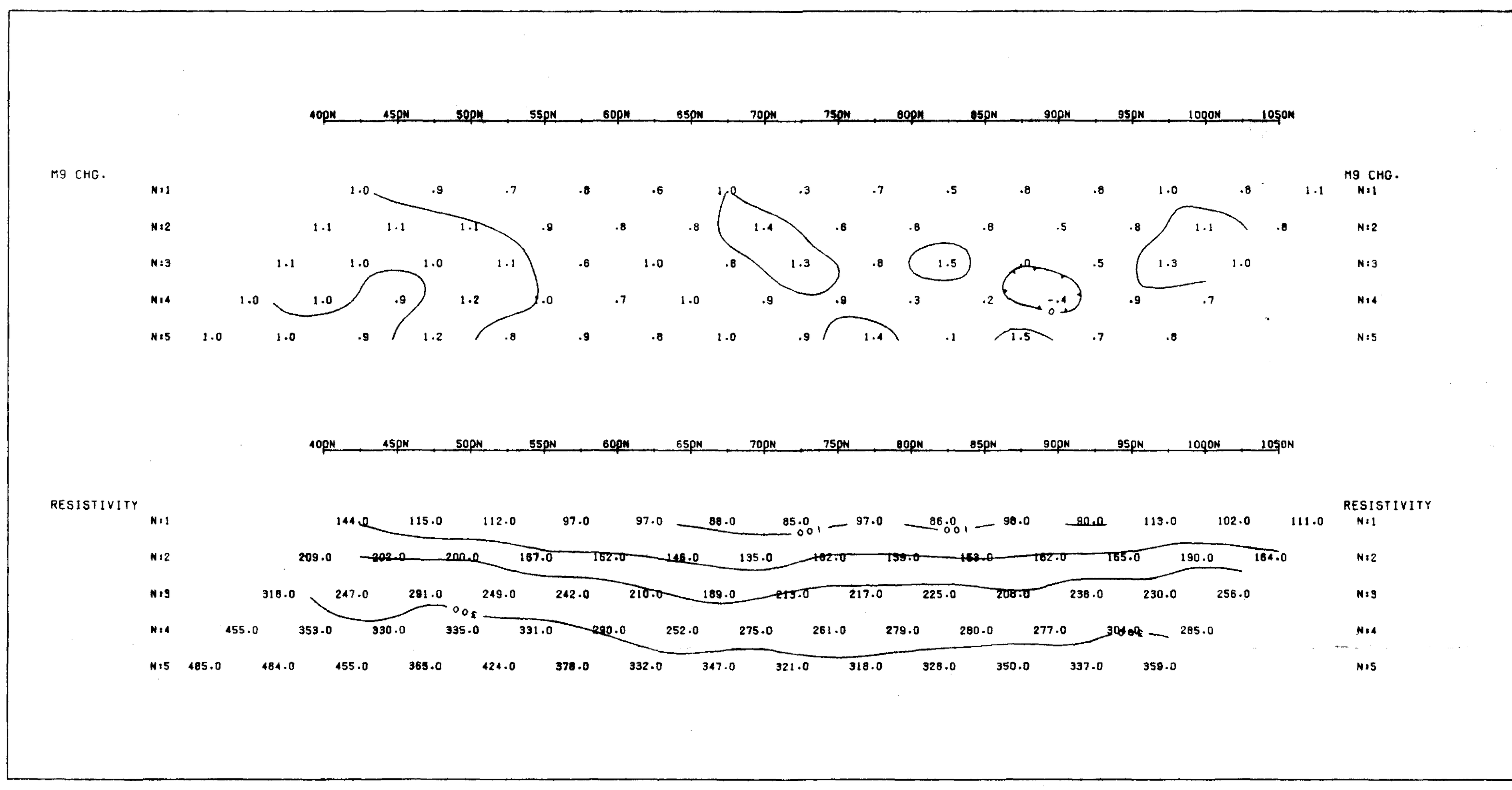
DEPTH POINT
N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #8
TRANSMITTER: SCINTREX, TSQ-3, 3KWATT

BROWNSTONE RESOURCES INC.
MCLEOD CREEK GRID
THOMAS TOWNSHIP, ONTARIO

DATE: MAR/99 | SCALE 1:2500

GEOPHYSICAL ENGINEERING & SURVEYS INC. TIMMINS, ONTARIO



LINE : 4600 E

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

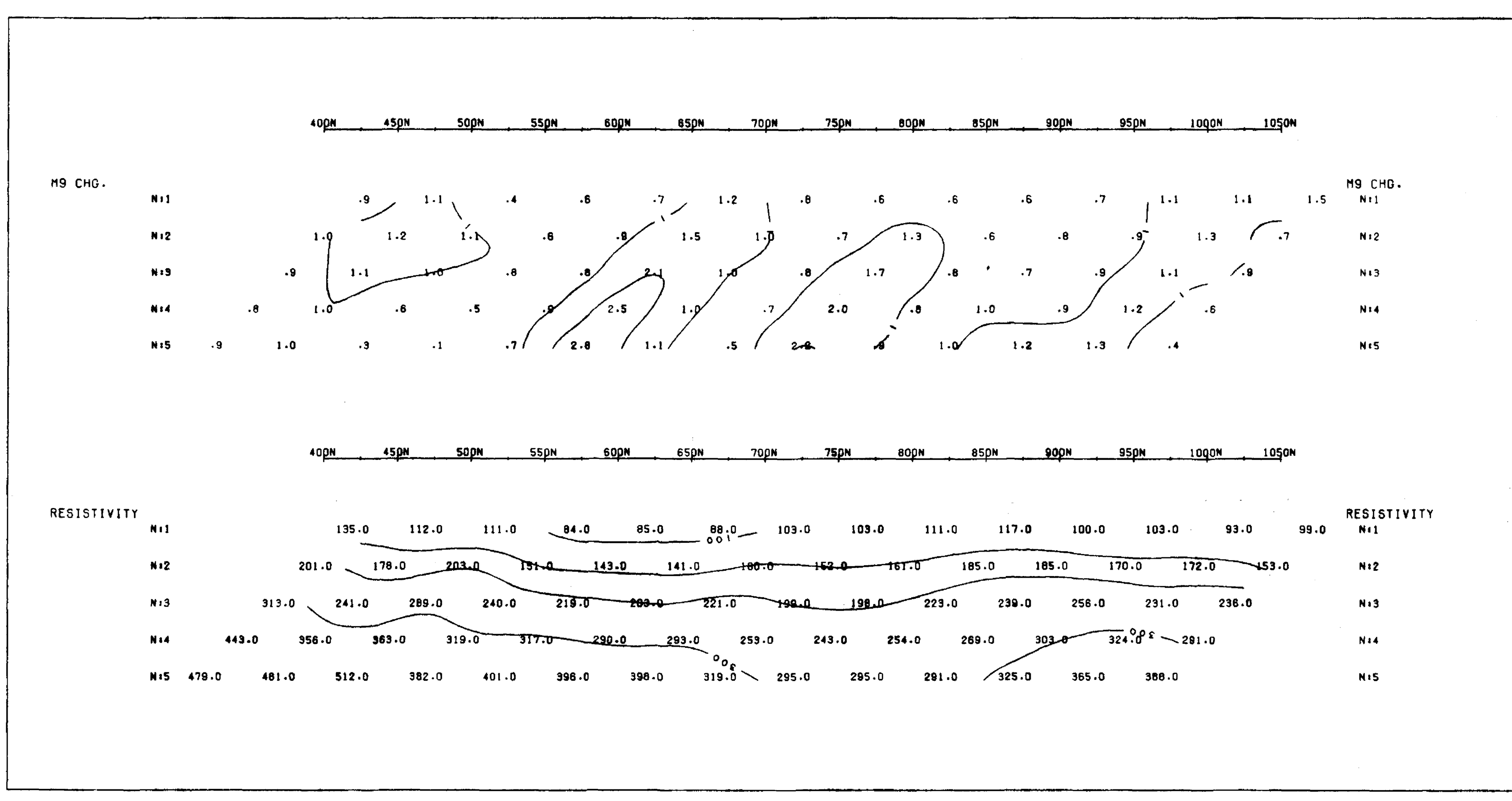
DEPTH POINT
N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #8
TRANSMITTER: SCINTREX, TSQ-3, 3KWATT

BROWNSTONE RESOURCES INC.
MCLEOD CREEK GRID
THOMAS TOWNSHIP, ONTARIO

DATE: MAR/99 | SCALE 1:2500

GEOPHYSICAL ENGINEERING & SURVEYS INC. TIMMINS, ONTARIO



LINE : 4700 E

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

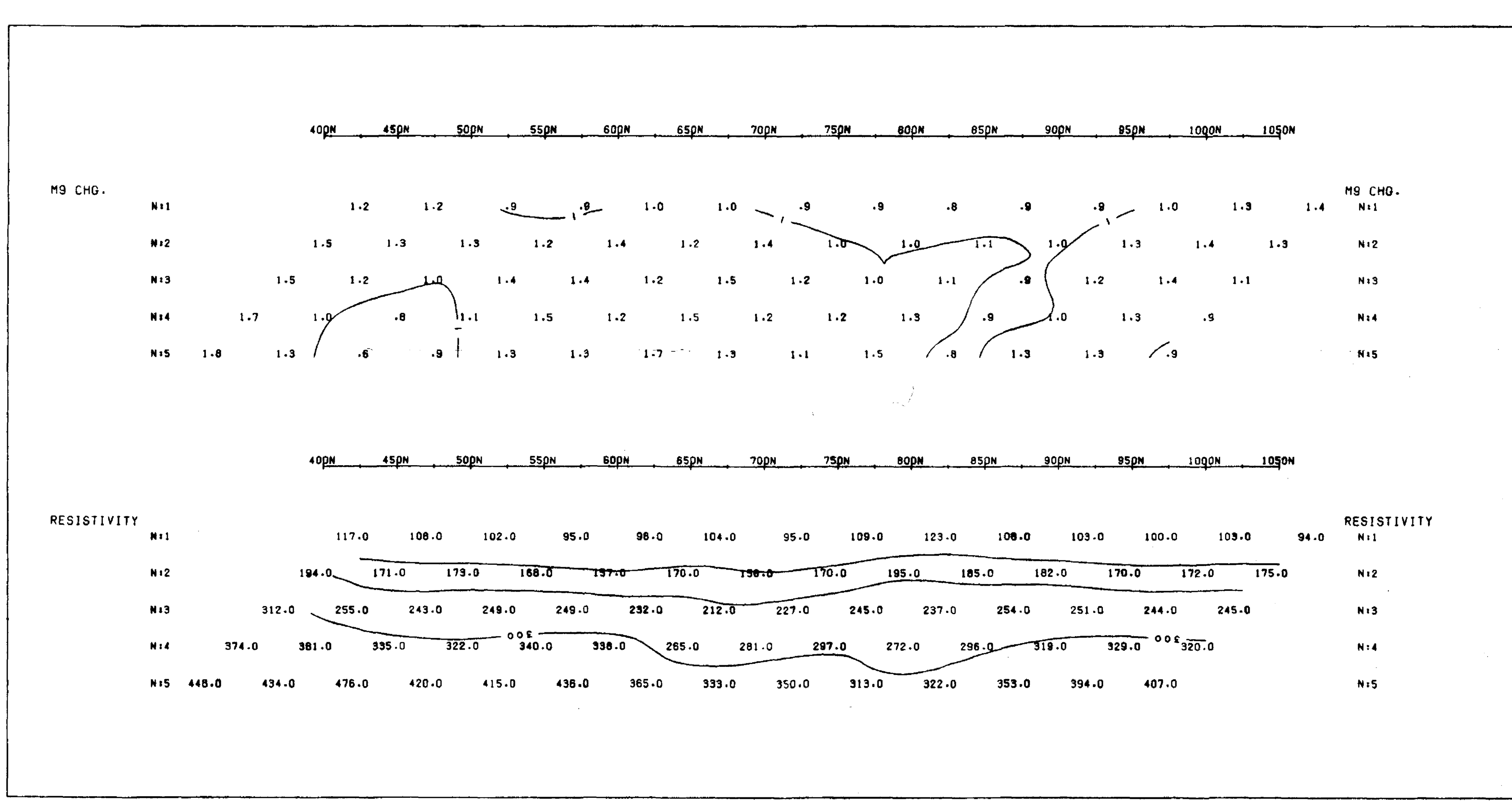
DEPTH POINT
N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #8
TRANSMITTER: SCINTREX, TSQ-3, 3KWATT

BROWNSTONE RESOURCES INC.
MCLEOD CREEK GRID
THOMAS TOWNSHIP, ONTARIO

DATE: MAR/99 | SCALE 1:2500

GEOPHYSICAL ENGINEERING & SURVEYS INC. TIMMINS, ONTARIO



LINE : 4800 E

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

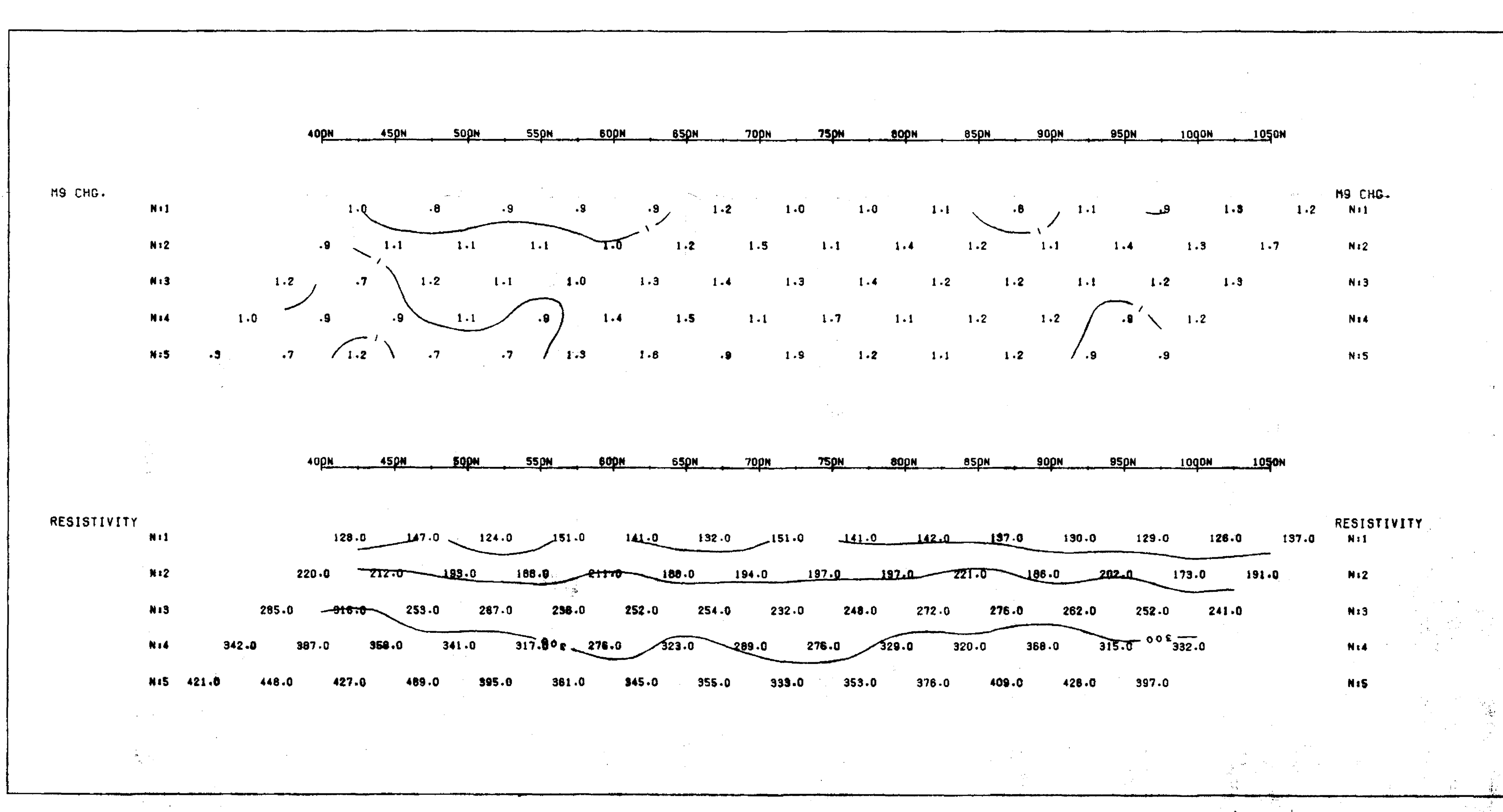
DEPTH POINT
N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #8
TRANSMITTER: SCINTREX, TSQ-3, 3KWATT

BROWNSTONE RESOURCES INC.
MCLEOD CREEK GRID
THOMAS TOWNSHIP, ONTARIO

DATE: MAR/99 | SCALE 1:2500

GEOPHYSICAL ENGINEERING & SURVEYS INC. TIMMINS, ONTARIO



LINE : 4900 E

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

DEPTH POINT
N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #8
TRANSMITTER: SCINTREX, TSQ-3, 3KWATT

BROWNSTONE RESOURCES INC.
MCLEOD CREEK GRID
THOMAS TOWNSHIP, ONTARIO

DATE: MAR/99 | SCALE 1:2500

GEOPHYSICAL ENGINEERING & SURVEYS INC. TIMMINS, ONTARIO

2.19363

BROWNSTONE RESOURCES INC.

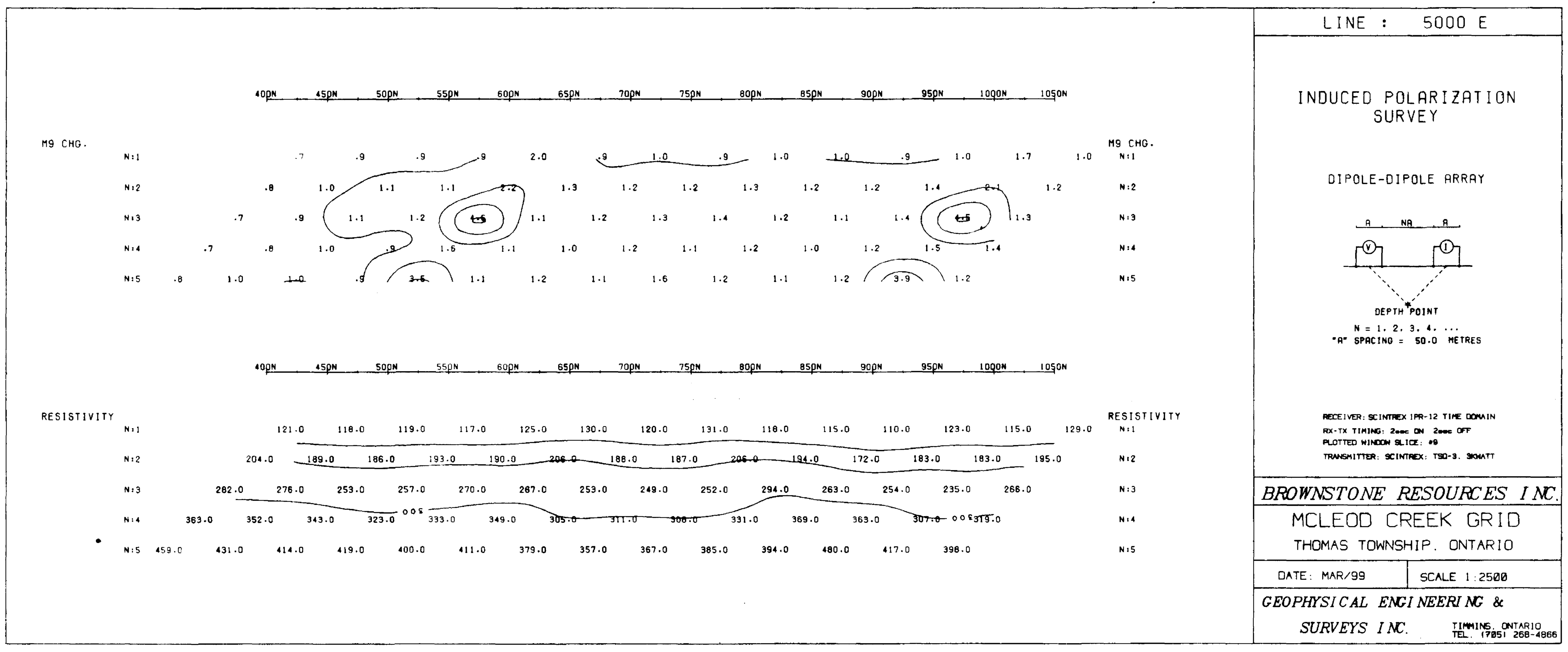
I.P. PSUEDOSECTIONS

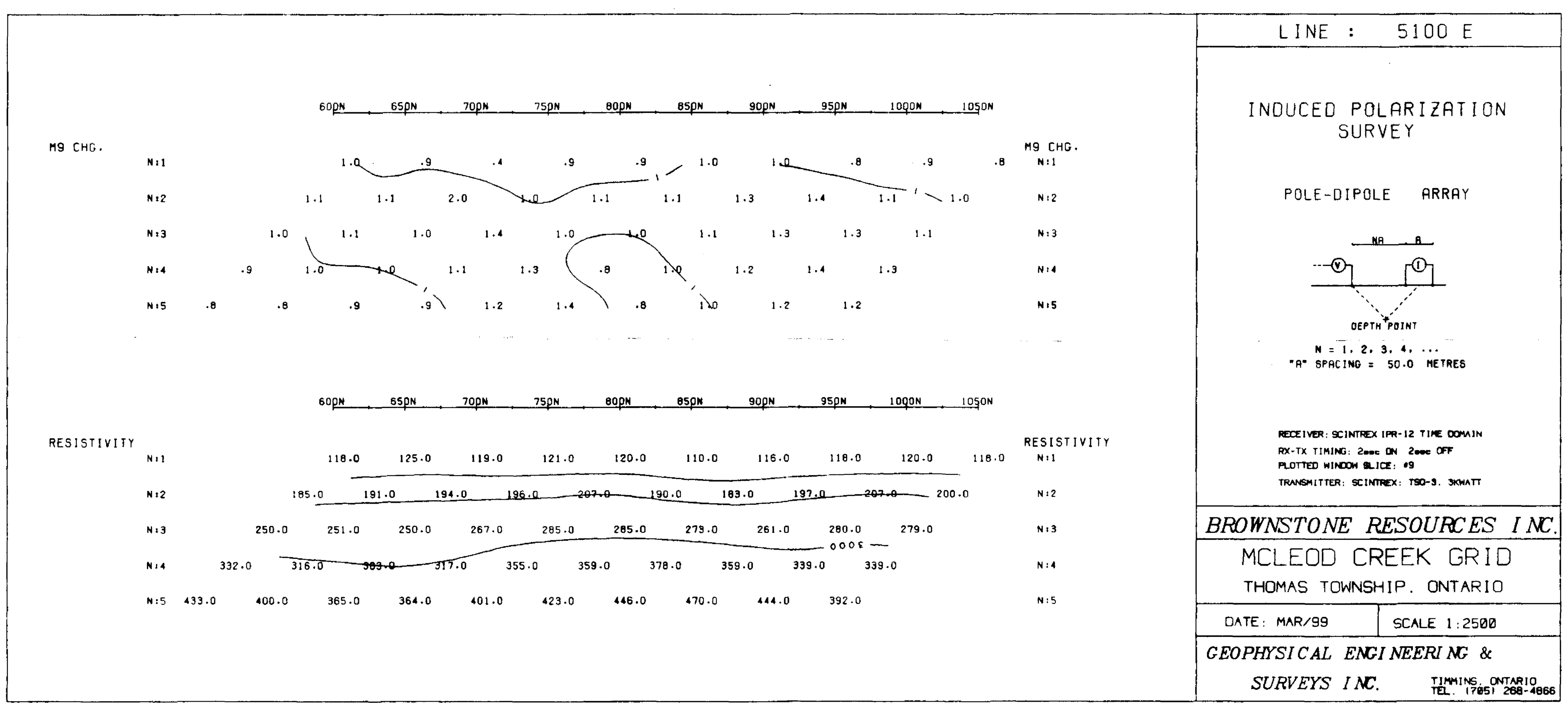
PLATE 1 of 3

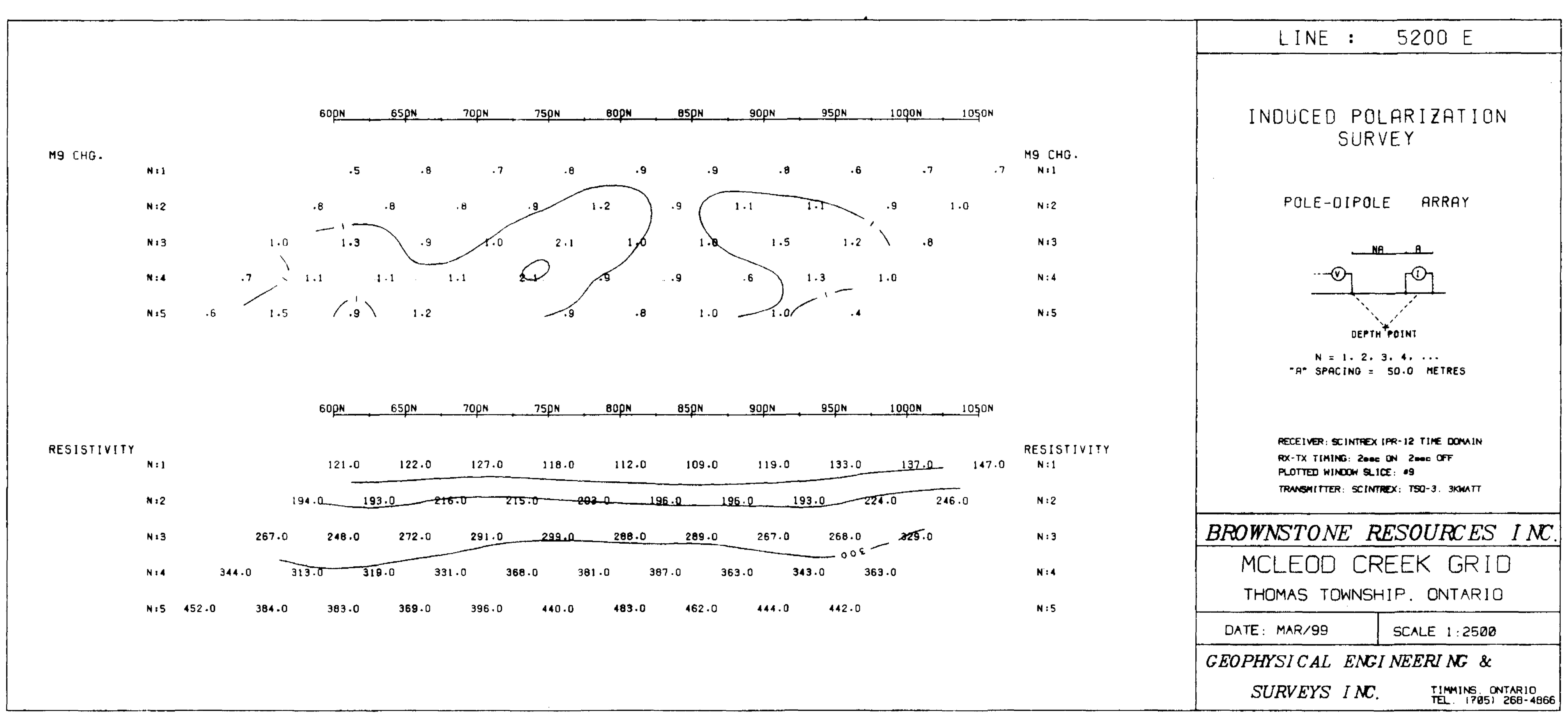
1:2500

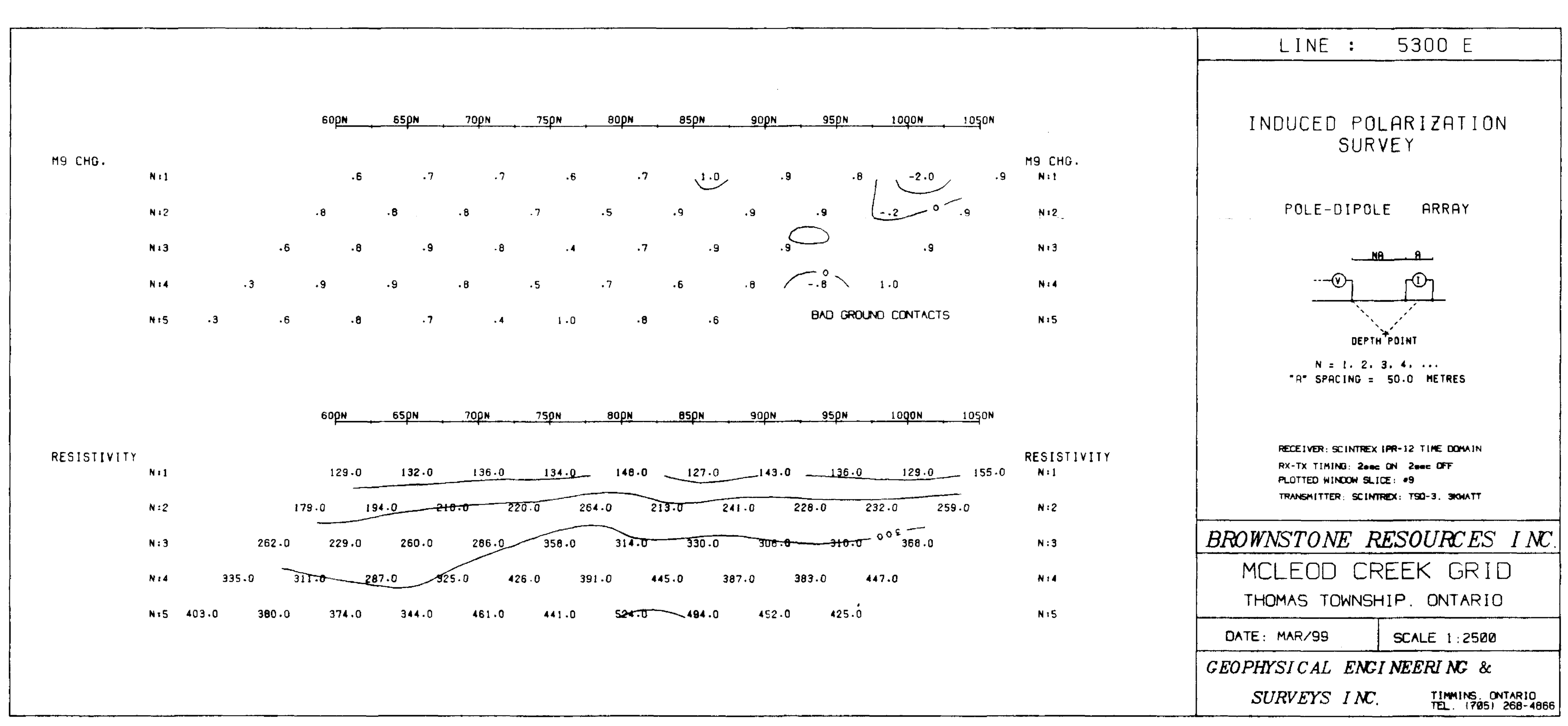
MCLEOD CREEK PROPERTY

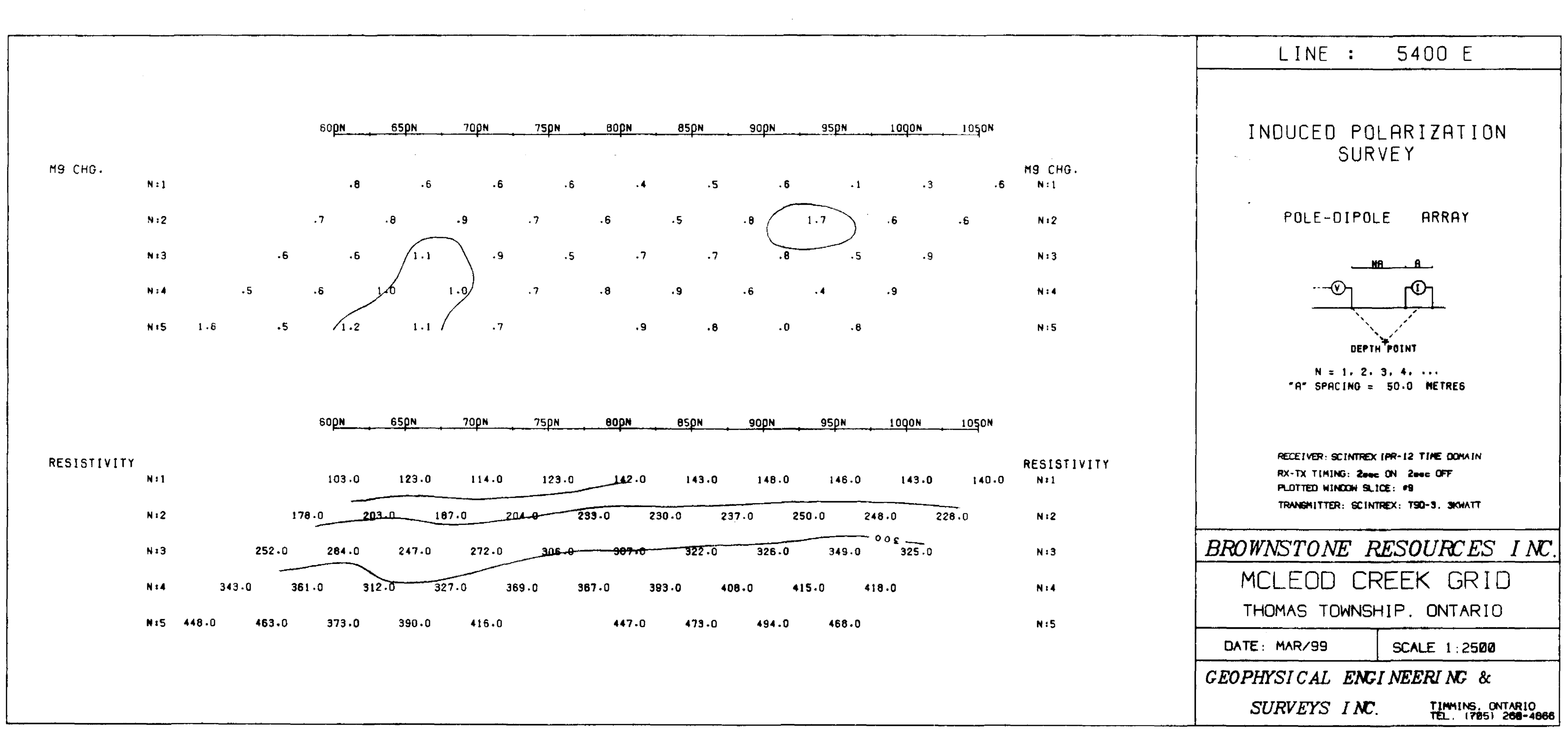
THOMAS TWP., ONTARIO











BROWNSTONE RESOURCES INC.

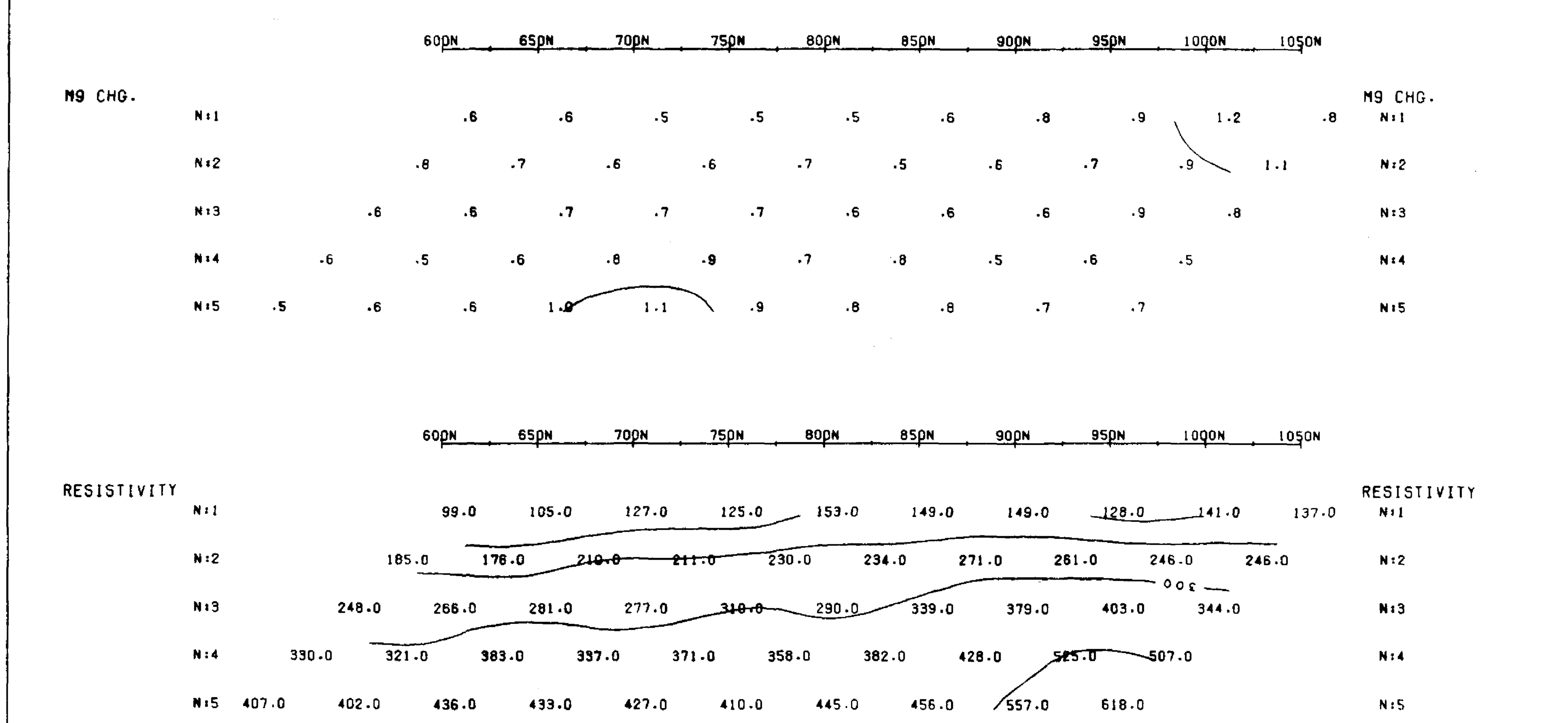
I.P. PSUEDOSECTIONS

PLATE 2 of 3

1:2500

MCLEOD CREEK PROPERTY

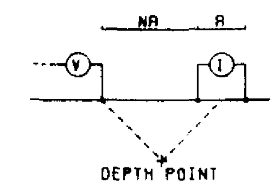
THOMAS TWP., ONTARIO



LINE : 5500 E

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



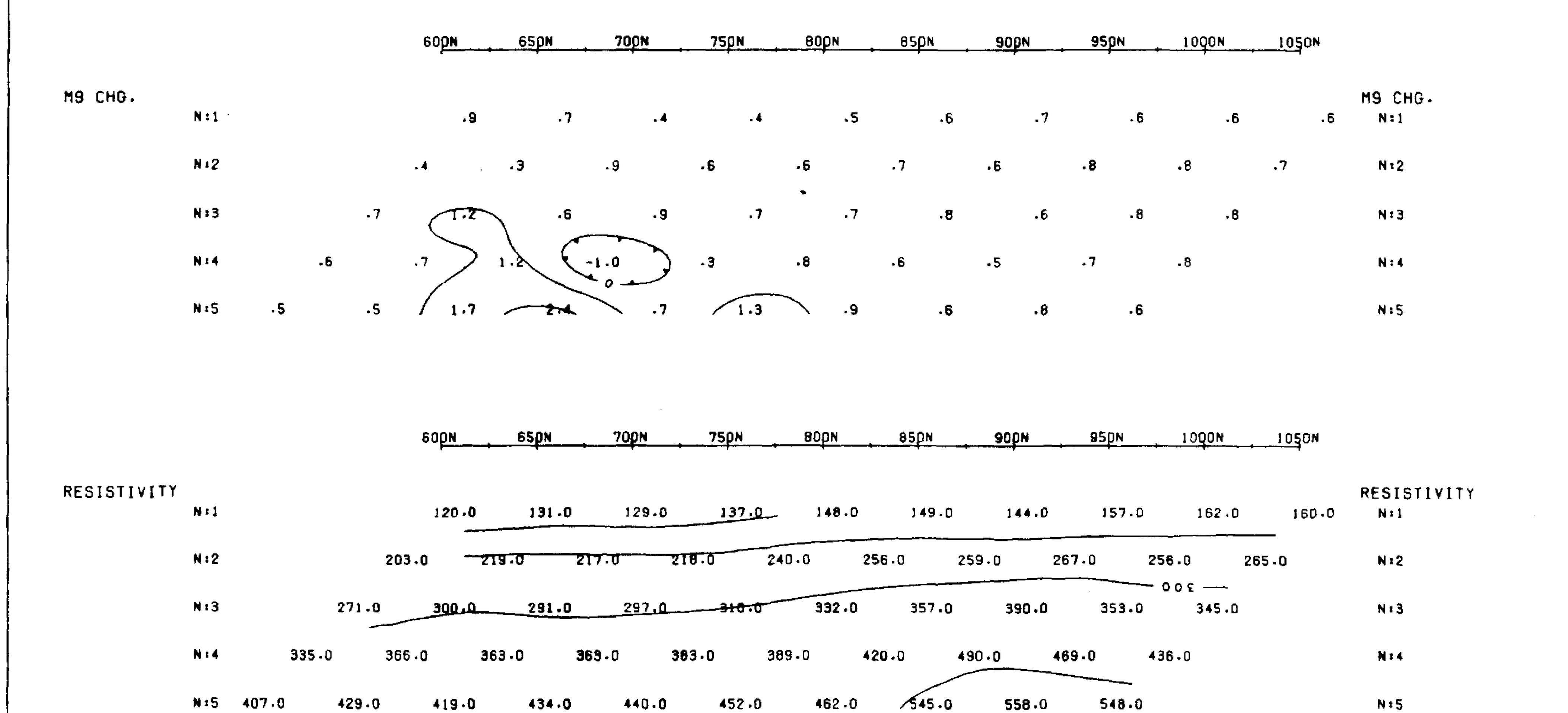
N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #9
TRANSMITTER: SCINTREX: TSQ-3, 3KWATT

BROWNSTONE RESOURCES INC.
MCLEOD CREEK GRID
THOMAS TOWNSHIP, ONTARIO

DATE: MAR/99 | SCALE 1:2500

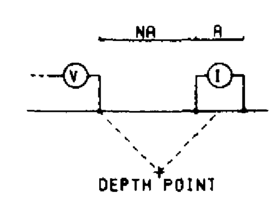
GEOPHYSICAL ENGINEERING & SURVEYS INC. TIMMINS, ONTARIO TEL. (705) 268-4866



LINE : 5600 E

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



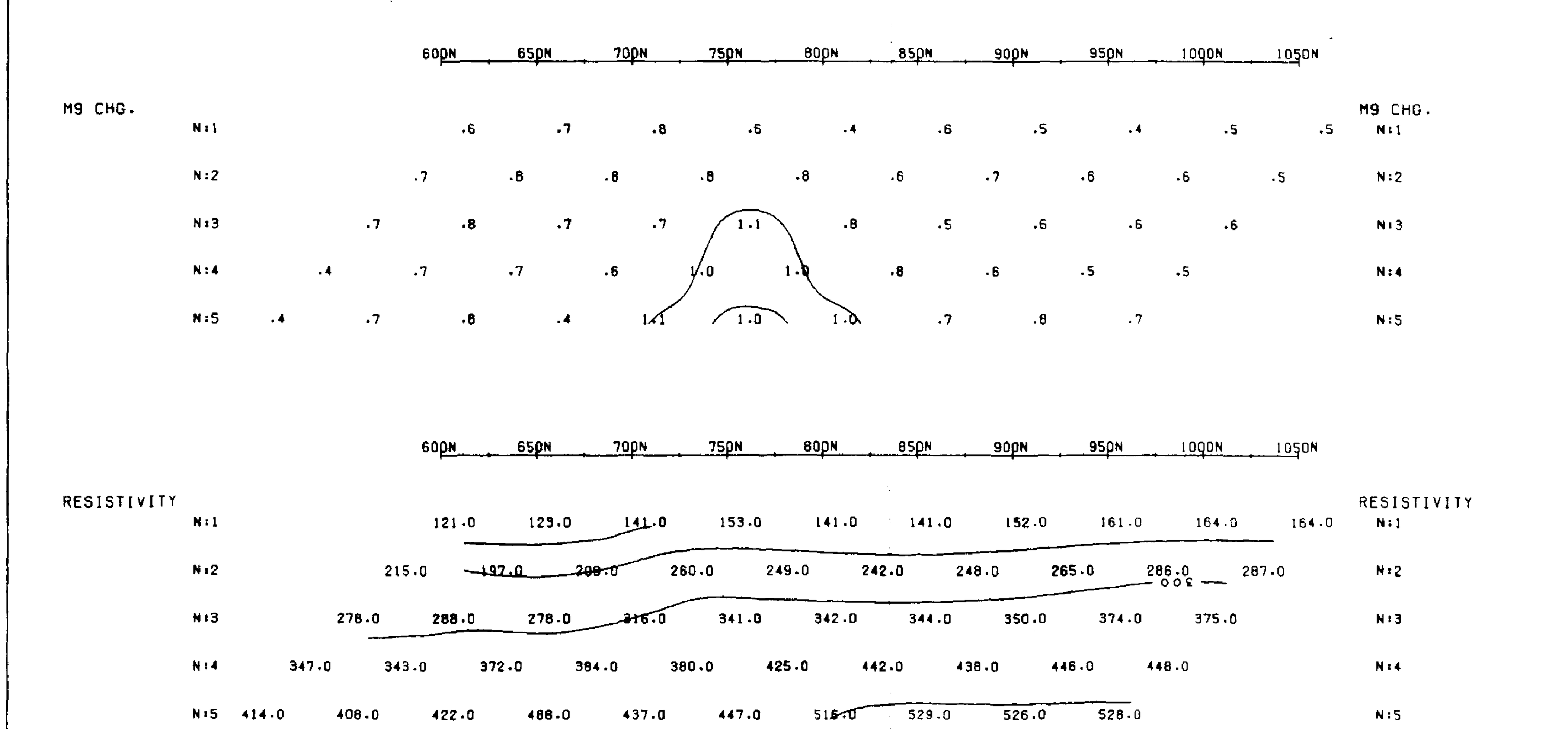
N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #9
TRANSMITTER: SCINTREX: TSQ-3, 3KWATT

BROWNSTONE RESOURCES INC.
MCLEOD CREEK GRID
THOMAS TOWNSHIP, ONTARIO

DATE: MAR/99 | SCALE 1:2500

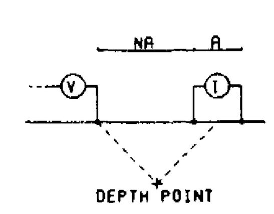
GEOPHYSICAL ENGINEERING & SURVEYS INC. TIMMINS, ONTARIO TEL. (705) 268-4866



LINE : 5700 E

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



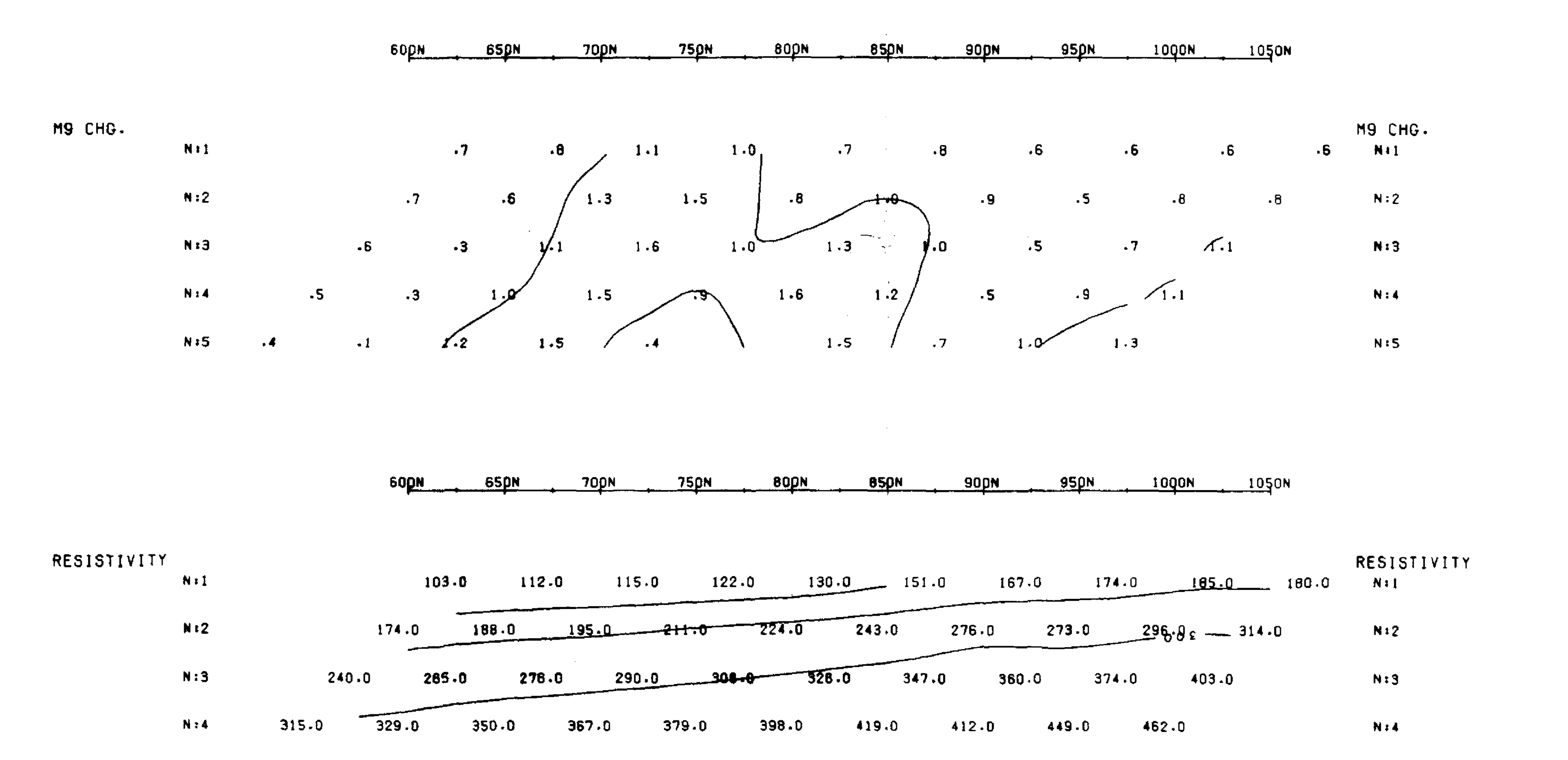
N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #9
TRANSMITTER: SCINTREX: TSQ-3, 3KWATT

BROWNSTONE RESOURCES INC.
MCLEOD CREEK GRID
THOMAS TOWNSHIP, ONTARIO

DATE: MAR/99 | SCALE 1:2500

GEOPHYSICAL ENGINEERING & SURVEYS INC. TIMMINS, ONTARIO TEL. (705) 268-4866



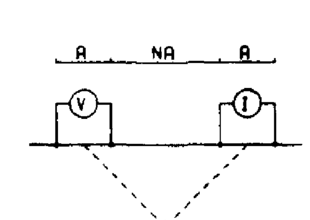
42A07NW2014 2.19363 THOMAS

280

LINE : 5800 E

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 50.0 METRES

RECEIVER: SCINTREX IPR-12 TIME DOMAIN
RX-TX TIMING: 2sec ON 2sec OFF
PLOTTED WINDOW SLICE: #9
TRANSMITTER: SCINTREX: TSQ-3, 3KWATT

BROWNSTONE RESOURCES INC.
MCLEOD CREEK GRID
THOMAS TOWNSHIP, ONTARIO

DATE: MAR/99 | SCALE 1:2500

GEOPHYSICAL ENGINEERING & SURVEYS INC. TIMMINS, ONTARIO TEL. (705) 268-4866

BROWNSTONE RESOURCES INC.
I.P. PSUEDOSECTIONS
PLATE 3 of 3
1:2500
MCLEOD CREEK PROPERTY
THOMAS TWP., ONTARIO