GEOPHYSICAL REPORT
FOR
PELANGIO LARDER/COPPER DOME MINES LTD.
ON THE
POIRIER OPTION
BRISTOL TOWNSHIP
PORCUPINE MINING DIVISION
NORTHEASTERN, ONTARIO

2.17854

Prepared by: J.C.Grant, CET, FGAC
July, 1997

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SUMMARY:

The area covered by the Poirier claims under option to Copper Dome Mines Ltd. lie in a part of the Timmins camp which is quite active now due to the recent discovery of a significant gold bearing horizon by Band-Ore Resources on their Thornloe Property to the south. Also, an ongoing drill program by Holmer Gold Mines Inc. on their property,(Holmer Gold property) to the immediate south of the Poirier Option and in Bristol Township, is expanding the gold bearing horizon which is known to host 720,000 tons at 0.11 opt gold. The recent Holmer drilling suggest that there is a least three gold bearing horizons on their property which appear to be open to the east and west.

The history of the Poirier claims date back to 1921 when the first work consisted of a number of pits and trenches on current claims P-752197, 752198 and 752199. That work succeeded in the initial discovery of two showings, (trenches #4 and #6 as they became to be called in the Utah 1985 program), and the best assay samples were as high as 0.74 opt gold.

Diamond drilling from 1926 to 1985 by various companies was generally ristricted to the area of the trenches and the best assay was 0.70 opt over 5 feet from one hole #3 done by Cortez Exploration Limited in 1940.

The claims have also be subjected to a number of geophysical surveys which generally were inconclusive and or did not,at the time, return encouraging results. Again, the area in and on strike with the showings was the main area of concentration.

Further activity in the area is the Band-Ore property optioned to Teck Exploration Limited/Placer Dome which is located to the immediate east of the Poirier Option. Teck has been actively surveying and drilling this area over the past two years.

Battle Mountain and BHP Minerals both hold property to the immediate west of the Poirier Option property as well.

INTRODUCTION:

The services of Exsics Exploration Limited were contracted by Mr. Kevin Filo on behalf of Copper Dome Mines Ltd,(CDM). to complete a linecutting and ground geophysical program across a portion of the claim group which had been optioned from R. Poirier in the Township of Bristol.

The purpose of this program was to locate and outline geological structures which would be considered favourable horizons for gold mineralization. The area of the past trenching and drilling will be of particular interest as it is known to contain interesting gold assays. The geophysical signature over this area will aid in interpreting similar signatures over the remaining area of the claim group.

PROPERTY LOCATION AND ACCESS:

The CDM property consists of a single block of 15 unpatented mining claims located in the west central section of Bristol Township of the Porcupine Mining Division, Timmins, Ontario. Figure 1. The entire property is situated on the north side of Highway 101 west approximately 17 kilometers west of the City of Timmins. Thunder Creek just touches the west side of the property and Bristol Lake is approximately 700 meters to the east of the southeast corner of the block. Figure 2.

Access to the property during the survey period was by skidoo along any number of ingress roads which all travel north off of Highway 101 west. Most of these roads are overgrown with scrub brush and tagalders but can be followed quite easily. Figure 2.

CLAIM GROUP:

The claim numbers which make up the Option property of CDM are as follows.

P-752195 to P-752205 inclusive........11 claims
P-1218743-3 Units,P-871664........... 4 claims

Total number of claims:......................15

Refer to figure 3, copied from MNDM Plan Map G-3998, Bristol Township, scale 1:20,000.

The status of these claims was not known to the Author at the time of this writing.

REGIONAL AND PROPERTY GEOLOGY:

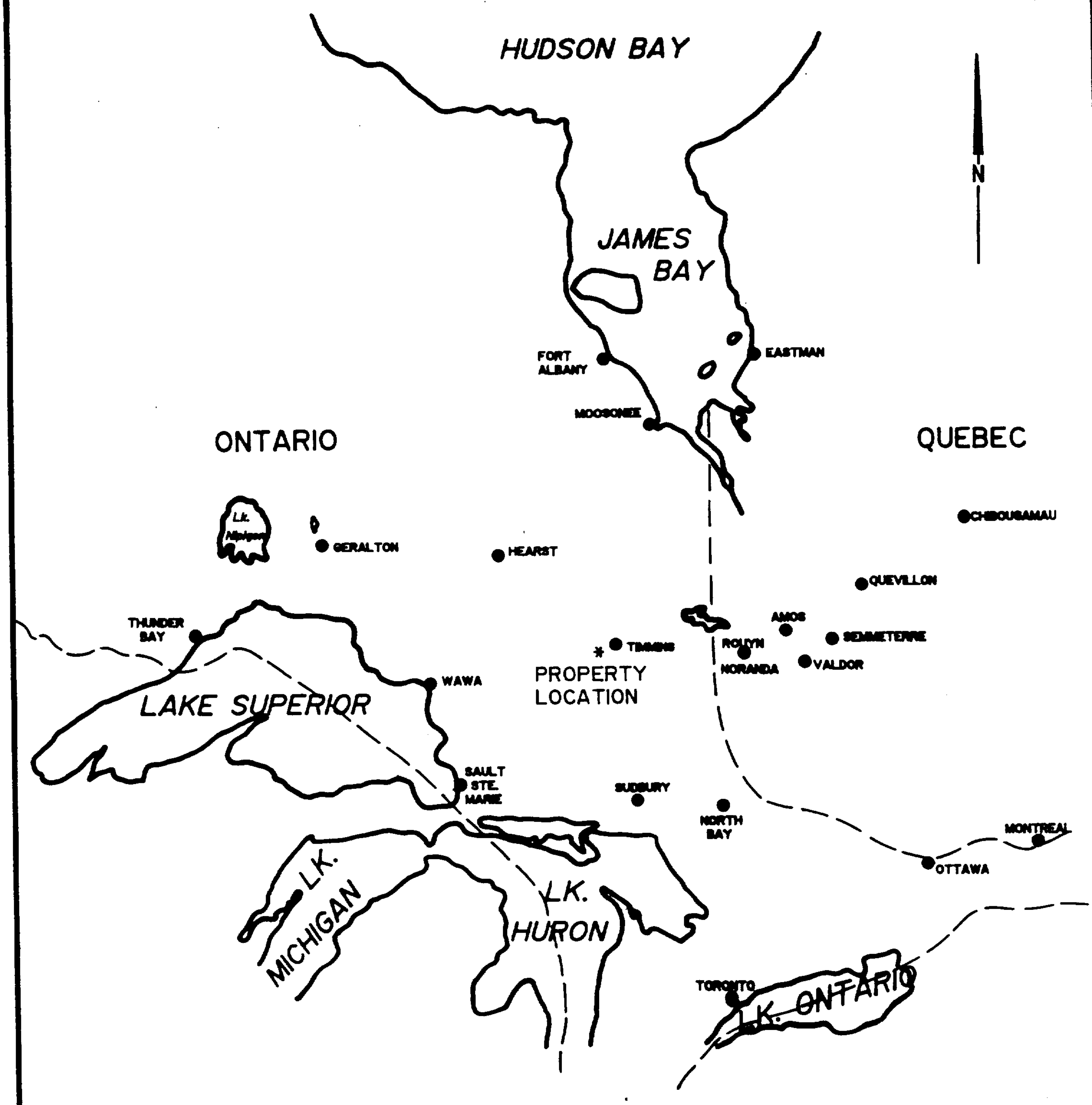
The regional geology of the Timmins area and the geology of the property has been well described in a report by J.G. Burns and Associates,(Evaluation Report of claims located in Bristol Township, porcupine Mining Division for Copper Dome Mines Ltd., July 9, 1996).

PERSONNEL:

The field crew directly responsible for the collection of all data were as follows:

John DerWeduwen............ South Porcupine, Ontario
Eric Jaakkola.............. Timmins, Ontario

The program was completed under the direct supervision of J.C.Grant and all of the computor compilation and plotting was completed by P. Gauthier of Exsics Explortation.



EXSICS EXPLORATION LTD.

P.O. Box 1000, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151

CLIENT: PELANGIO LARDER/COPPER DOME

PROPERTY: POIRIER PROPERTY

TITLE: BRISTOL TWP.
LOCATION MAP

Fig. 1

Date: July 1997	**Scale:** 1"=125miles	**MNDM Plan#:**
Drawn: P. Gauthier	**Interp:** J.C. Grant	Job No. E- E-266

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Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151

CLIENT: PELANGIO LARDER/COPPER DOME

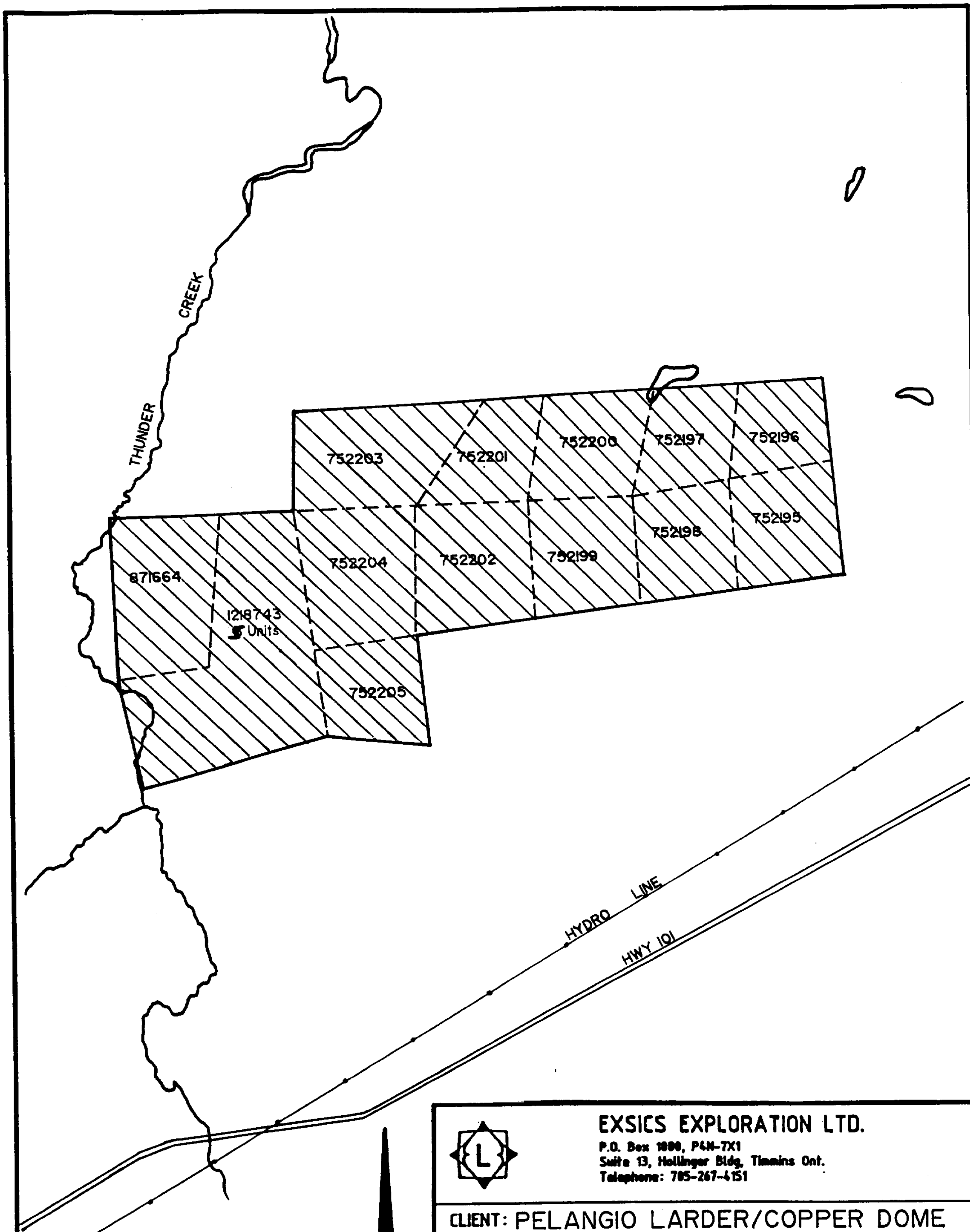
PROPERTY: POIRIER PROPERTY

TITLE: BRISTOL TWP.

PROPERTY LOCATION

Fig. 2

Date: July 1997	**Scale:** 1:600,000	**MNDM Plan#:** 22-6
Drawn:	**Interp:** J.C. Grant	**Job No.** E-266



EXSICS EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg. Timmins Ont.
Telephone: 705-267-4151

CLIENT: PELANGIO LARDER/COPPER DOME		
PROPERTY: POIRIER PROPERTY		
TITLE: BRISTOL TWP. CLAIM SKETCH		Fig. 3
Date: July 1997	Scale: 1:20,000	MNDM Plan#: G-3998
Drawn: P. Gauthier	Interp: J.C. Grant	Job No. E-266

GROUND PROGRAM(1997):

The 1997 ground program was completed in two phases. The first phase of the program was the establishment of a detailed metric grid across the eastern section of the CDM property. This was done by first locating the existing Tieline 107N done by Utah. This Tieline was re-established as Baseline 0+00 for the 1997 program and it was cut and chained at 20 meter intervals from 0+00 to 1400MW.

A series of cross lines were then turned off of this baseline at 100 meter intervals and cut to the north and south boundaries of the claim group. All of the cross lines were chained with 20 meter pickets which were metal tagged. In all, a total of 10 kilometers of grid lines were established across the claims.

The second phase of the ground program was the completeion of a total field magnetic survey done in conjunction with a VLF-EM survey. The total field magnetic survey was completed over the entire grid whereas the VLF-EM survey was completed on the cross lines only. Both of the surveys were completed using the BRGM OMNI PLUS system and the BRGM OMNI IV system. Specifications for the systems can be found as Appendix A of this report. The following parameters were kept constant througout the surveys.

MAGNETIC SURVEY:

Line spacing......................	100 meters
Station spacing....................	20 meters
Reading interval...................	10 meters
Diurnal correction.................	Base station recorder
Reading interval...................	30 seconds
Reference field....................	58,500 gammas
Datum subtract.....................	57,000 gammas
Unit accuracy......................	+/- 0.1 gamma
Parameters measured................	Earth's total magnetic field

The collected data was then corrected, levelled and plotted onto a base map at a scale of 1:2500. The data was then contoured at 10 gamma intervals where possible. A copy of this contoured base map is included in the back pocket of this report.
An 81/2 X 11 inch colour contour of the magnetic results is also included in this report to better enhance the magnetic signature of the property.

VLF-EM SURVEY:

Line spacing.......................	100 meters
Station spacing....................	20 meters
Reading interval...................	20 meters
Transmitting station...............	Cutler, Maine
Transmitting frequency.............	24.0khz
Azimuth to grid....................	115 degrees
Unit accuracy......................	0.5 percent
Parameters measured................	inphase and quadrature components,tilt,fieldstrength
Parameter plotted..................	inphase component

The collected data was then plotted directly onto a base map at a scale of 1:2500 and then profiled at 1cm to 40 % . All conductor axis were then placed onto the map and interpreted where possible. A copy of this VLF profile map is included in the back pocket of this report.

SURVEY RESULTS:

The VLF survey was successful in locating and outlining a number of parallel conductive zones across the grid. The magnetic survey was also successful in outlining the geological structures on the grid as well as several cross structures. Each of the conductive zones have been labelled and will be discussed seperately and in detail below.

Zone A:

This zone can be traced from line 1400MW to line 700MW and continues off of the grid to the southeast. This feature appears to cross cut the general strike of the geology suggesting it may, inpart, relate to minor faulting.

Zone B:

This feature parallels Zone A and strikes across lines 1400MW to 1100MW and also continues off of the grid to the southeast. This zone appears to follow the area previously mapped as an area of high electric conductivity relating to graphitic slate and pyrite rich material. There is a slight increase in the magnetic signature along the strike of this zone. Zone B appears to have been cross cut by a diabase dike on its western extension.

Zone C and D:

These VLF zones can be traced across the center of the property from lines 1100MW to 100MW and from 1400MW to 100MW respectfully. The zones are both well defined targets suggesting they may represent the north and south boundaries of rhyolite tuffs, agglomertate unit which was mapped striking across the property in the same general area and direction. There is an associated spotty moderate magnetic low signature which can be traced along either zone which may relate to the contacts.

Zone E:

This unit can be traced across lines 1200MW to 800MW where it appears to truncate next to a strong north-south striking feature. This north-south unit represents a diabase dike. This dike can be traced along line 800MW to the south and towards the southern tip of line 700MW and it continues off of the grid to the south.

Zone E appears to relate to a moderate magnetic low unit which also truncates next to the dike.

Zone F:

Zone F can be traced striking east-west across lines 300MW to 0+00 and appears to continue off of the grid to the east. It probably relates to the northern contact of the graphitic slates and pyrite rich zone previously mapped. The magnetics show a moderate magnetic low signature with the strike of the zone. There appears to be a weak north paralleling zone striking across lines 300MW to 100MW which may represent a minor stringer or shear zone in the same geological unit. This zone has a moderate magnetic high associated with the strike of the zone.

Zone G:

This zone can be traced across lines 400MW to 600MW and possibly as far as 800MW. It appears to eminate from Zone A but is more compatable with the geological strike of the property. The zone, infact, may relate to the graphitic slate, pyrite rich unit stiking across the southern section of the grid. The magnetics show spotty highs and lows along the strike of the zone as well as slumping in the magnetic signature of the dikes.

There are several other, shorther, spotty VLF zones striking across the northern and northeastern section of the grid. These zones correlate to the strike of the underlaying units and appear to either eminate from the north-south dikes or terminate next to them.

The magnetic survey outlined three predominant north-south striking features which relate to mapped diabase dikes. The zones can be followed easily in the contours. A fourth, weaker dike may also be evident in the southwest corner of the property but may be deeper. There may also be two minor fault zones which generally parallel the strike of the dikes. These zones can be followed from line 1400MW, north end to line 1000MW, south end, and from line 1500MW, baseline to line 1100MW, south end. Both of the features are represented by weak slumping in the magnetic contoures.

CONCLUSIONS AND RECOMMENDATIONS

The surveys were successful in locating and outlining the geological structures of the grid. The rhyolitic tuff,agglomerate unit is well defined and can be followed across the entire grid as conductors C and D. The graphitic slate and pyrite unit can also be followed across the entire south section of the grid by zones B and possibly G as well as the weak magnetic low signature.

Zones B,G and F should be followed up further by an IP survey to better define them and their strike lengths. In fact, the entire property should be covered by an IP survey to better define the VLF units and any and all magnetic low units.

The remainder of the claims to the west should also be covered by a continuation of the existing grid and by the same geophysical surveys.

Respectfully submitted

GEOLOGICAL ASSOCIATION OF CANADA
JOHN GRANT
FELLOW

J.C.Grant, CET, FGAC
February, 1997.

PHASE TWO SUMMER PROGRAM:

The phase two summer program consisted of extending the winter grid to cover the remaining westerly claims that were not part of the winter geophysical program. The 450MS tieline was extended to line 2700MW which was just inside the west boundary of the claim block. Crosslines were then turned off of this tieline at 100 meter intervals and cut to the north and south boundaries of the claims. The winter grid also had to be recut due to the excessive amount of snowfall that left about 5 feet of stumpage and growth on the existing lines. All of the cut lines were chained with 20 meter pickets that were metal tagged. In all a total of 33.5 kilometers of grid lines were cut across the property.

Once the line cutting was completed, the extension grid was covered by the magnetometer and VLF surveys as well as two of the pevious lines to correlate the new data to the existing data.

This phase of the program also included IP coverage of all of the extension grid as well as a potion of the existing grid.

PROPERTY LOCATION AND ACCESS:

The property covered by this phase of the program consisted of the remaining 7 claims not covered by the winter program. These claims represent the western half of the Porier option and the west boundary of the claims abut Thunder Creek.

The access to the grid during the survey period was by a series of drivable bush roads that extend into the grid from the southwest.

PERSONNEL:

The field crews directly responsible for the collection of raw data were as follows.

MAGNETIC/VLF SURVEY:	J.DerWeduwen........	South Porcupine, Ontario
	E. Jaakkola.........	Timmins, Ontario
IP SURVEY:	W. Pearson..........	Timmins, Ontario
	N. Collins..........	Timmins, Ontario
	M. Ruel.............	Timmins, Ontario
	A. Ryan.............	Timmins, Ontario

The entire program was completed under the direct supervision of J.C.Grant and all of the computor compilation and plotting was completed by P.Gauthier of Exsics.

CLAIM GROUP:

The claim group is represented by figure 3 of this report which has been copied from the MNDM Plan Map of Bristol Township.

GROUND PROGRAM:

The magnetometer and VLF-EM surveys were completed using the same units that have been described in the Phase 1 portion of this report and their specifications can be found as Appendix A of this report. The same survey parameters were kept constant throughout this portion of the program as was kept constant during the phase 1 portion of the program. Refer to pages 3 and 4 of this report for those parameters.

The IP survey was completed using the BRGM, IP-4 receiver and the Scintrex, IPC-7, 2.5 kilowatt transmitter system. Specifications for these units can be found as Appendix B of this report. The following parameters were kept constant throughout the survey period.

Method..............................	Time domain
Array...............................	Pole-dipole
Electrode spacing,(a), and number..	"a"=25 meters, n=1-4
Pulse time..........................	2 seconds on, 2 second off
Delay time..........................	350 milliseconds
Inegration time.....................	700 milliseconds
Parameters measured.................	Chargeability, Apparent resistivity.
Data Presentation...................	Single line pseudo sections of the chargeabilities and Resistivities, contoured.

A seperate plot of each line read is included as pull-outs in this report.

A geological compilation derived from the geophysical results has also been done on a base map at a scale of 1:5000 and is included in the back pocket of this report along with base maps for the contoured magnetic survey and VLF-EM survey.

A low pass filter called Fraser filtering has also been done to the inphase readings of the VLF survey and a contoured base map of those results is also included in the back pocket.

This Fraser filtering of the Inphase data results in placing a large positive valus over shallow buried conductors and a lesser positive value over deeper zones. It also enhances weak questionable zones which may only show as deflections in the collected VLF data.

SURVEY RESULTS:

The survey results of the two programs have been correlated and each of the zones will be discussed seperately and in detail in this next portion of text.

Upon completion of the geophysical and geological compilation it becomes evident that the property is underlain by a well defined rhyolitic unit apparently sandwhiched between sediments to the north and south. This rhyolitic unit can be traced from 2200MW to and including 700MW and appears to range in widths from 25 to 75 meters. This unit in turn is then cross cut by a series of north and northwest striking dikes as well as a least three northwest striking fault zones. These faults were picked up by the IP survey and are represented by resistivity lows. The rhyolitic unit is represented by a series of resistivity highs as well as a series of chargeability highs, suggesting that there are sulphides present along the strike of the unit. All three faults have displaced the strike of the rhyolite and the offsets are quite apparent in the magnetic survey results.

Also, offsets in the strike of the dikes suggest that the rhyolitic unit may represent or is controlled by an east-northeast striking fault and or shear structure.

The VLF conductors generally follow the strike of the underlaying geology and relate to the contacts of the rhyolitic unit, it's offsets as well as a number of parallel features which may be attributed to shearing in close proximity to the rhyolites.

Of perticular interest is the narrow magnetic low unit cutting across lines 900MW to and including 100MW, which has an associated VLF zone along it's north edge and across lines 300MW to 0+00. This feature seems to have offset at least two of the diabase dikes and it is truncated on the western tip by one of the three northwest striking faults. This may suggest the unit relates to a fault zone and or highly sheared structure.

The results of the IP survey correlate as well with the property geology as well as the results of the VLF survey and magnetic survey. The main IP zone follows the rhyolitic unit from 2100MW to 1100MW and it is represented by moderate to strong chargeabilities as well as good resistivity highs.

CONCLUSIONS AND RECOMMENDATIONS:

The surveys were successful in their goal of outlining the property geology as well as defining specific areas of interest that appear to represent a well defined rhyolitic unit containing varying amounts of sulphide materials. There is at least three cross faults present on the grid which has offset this rhyolitic unit and truncated another target area represented by the narrow magnetic low unit. Based on these assumptions as well as the correlation between the IP survey and VLF survey coupled with the magnetic survey, five drill holes have been recommended.

One hole should be drilled south on line 200MW at about 300MS to test the narrow magnetic unit and correlating VLF zone.

Another hole should be drilled south on line 900MW at about 475MS to test a coincidental IP and VLF target situated on the north flank of a magnetic low structure.

Another hole should be drilled north on line 1100MW at about 460MS to test the coincidental IP and VLF target which appears to represent the rhyolitic unit in the same vicinity.

Another hole should be drilled north on line 1400MW at about 550MS to test the two parallel IP zones which appear to represent the rhyolitic unit in the vicinity.

The final hole should be drilled north on line 2050MW at about 850MS to test the coincidental IP and VLF zones which appear to relate to the rhyolitic unit in the vicinity.

Should any of the holes return encouraging results, then the entire property will have to be re-evaluated and all of the zones either on strike with the drill zones or parallel to them will have to be followed up further.

Respectfully submitted

GEOLOGICAL ASSOCIATION OF CANADA
JOHN GRANT
FELLOW

J.C.Grant, CET, FGAC
August 11, 1997.

CERTIFICATE

I, John C. Grant, hereby certify that:

1) I am a graduate technologist, (1975) of the three year program in Geological Technology at Cambrian College of Applied Arts and Technology, Sudbury Campus. I have worked subsequently as an Exploration Geophysicist for Teck Exploration Limited, (5 years), North Bay office and currently as Exploration Manager and Geophysicist for Exsics Exploration Limited since 1980.

2) I am a member in good standing of the Certified Engineering Technologist Association,(CET), since 1984

3) I am a Fellow of the Geological Association of Canada, (FGAC), since 1986.

4) I have been actively engaged in my profession since May of 1975, including all aspects of exploration studies, surveys and interpretation.

5) I have no specific or special interest in the described property. I have been retained as a Consulting Geophysicist by the Property holders.

GEOLOGICAL ASSOCIATION OF CANADA
JOHN GRANT
· FELLOW ·

John Charles Grant, CET, FGAC.

APPENDIX A

SCINTREX

ENVI-MAG Environmental Magnetometer/Gradiometer

Locating Buried Drums and Tanks?

The ENVI-MAG is the solution to this environmental problem. ENVI-MAG is an inexpensive, lightweight, portable "WALKMAG" which enables you to survey large areas quickly and accurately.

ENVI-MAG is a portable, proton precession magnetometer and/or gradiometer, for geotechnical, archaeological and environmental applications where high production, fast count rate and high sensitivity are required. It may also be used for other applications, such as mineral exploration, and may be configured as a total-field magnetometer, a vertical gradiometer or as a base station.

The ENVI-MAG

- easily detects buried drums to depths of 10 feet or more
- more sensitive to the steel of a buried drum than EM or radar
- much less expensive than EM or radar
- survey productivity much higher than with EM or radar

Main features include:

- select sampling rates as fast as 2 times per second
- "WALKMAG" mode for rapid acquisition of data
- large internal, expandable memory
- easy to read, large LCD screen displays data both numerically and graphically
- ENVIMAP software for processing and mapping data

ENVI-MAG comprises several basic modules; a lightweight console with a large screen alphanumeric display and high capacity memory, a staff mounted sensor and sensor cable, rechargeable battery and battery charger, RS-232 cable and ENVIMAP processing and mapping software.

For gradiometry applications an upgrade kit is available, comprising an additional processor module for installation in the console, and a second sensor with a staff extender.

ENVI-MAG Proton Magnetometer in operation

For base station applications a Base Station Accessory Kit is available so that the sensor and staff may be converted into a base station sensor.

Features and Benefits

"WALKMAG" Magnetometer/Gradiometer

The "WALKMAG" mode of operation (sometimes known as "Walking Mag") is user-selectable from the keyboard. In this mode, data is acquired and recorded at the rate of 2 readings per second as the operator walks at a steady pace along a line. At desired intervals, the operator "triggers" an event marker by a single key stroke, assigning coordinates to the recorded data.

True Simultaneous Gradiometer

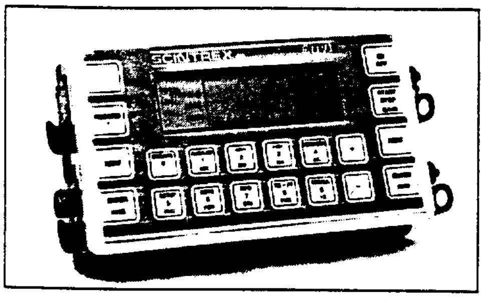
An optional upgrade kit is available to configure ENVI-MAG as a gradiometer to make true, simultaneous gradiometer measurements. Gradiometry is useful for geotechnical and archaeological surveys where small near surface magnetic targets are the object of the survey.

Selectable Sampling Rates

0.5 second, 1 second and 2 second reading rates user selectable from the keyboard.

Large-Key Keypad

The large-key keypad allows easy access for gloved-hands in cold-weather operations. Each key has a multi-purpose function.



Front panel of ENVI-MAG showing a graphic profile of data and large-key keypad

Large Capacity Memory

ENVI-MAG with standard memory stores up to 28,000 readings of total field measurements, 21,000 readings of gradiometry data or 151,000 readings as a base station. An expanded memory option is available which increases this standard capacity by a factor of 5.

Easy Review of Data

For quality of data and for a rapid analysis of the magnetic characteristics of the survey line, several modes of review are possible. These include the measurements at the last four stations, the ability to scroll through any or all previous readings in memory, and a graphic display of the previous data as profiles, line by line. This feature is very useful for environmental and archaeological surveys.

Highly Productive

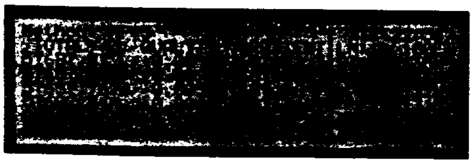
The "WALKMAG" mode of operation acquires data rapidly at close station intervals, ensuring high-definition results. This increases survey productivity by a factor of 5 when compared to a conventional magnetometer survey.

"Datacheck" Quality Control of Data

"Datacheck" provides a feature wherein at the end of each survey line, data may be reviewed as a profile on ENVI-MAG's screen. Datacheck confirms that the instrument is functioning correctly and allows the user to note the magnetic relief (anomaly) on the line.

Large Screen Display

"Super-Twist" 64 x 240 dot (8 lines x 40 characters), LCD graphic screen provides good visibility in all light conditions. A display heater is optionally available for low-temperature operations below 0°C.



Close-up of the ENVI-MAG screen showing data presented after each reading

Interactive Menus

The set-up of ENVI-MAG is menu-driven, and minimizes the operator's learning time, and on-going tasks.

Close-up of display of ENVI-MAG showing interactive set-up menu

Rechargeable Battery and Battery Charger

An "off-the-shelf" lead-acid battery and charger are provided as standard. The low-cost "Camcorder" type battery is available from electronic parts distributors everywhere.

HELP-Line Available

Purchasers of ENVI-MAG are provided with a HELP-Line telephone number to call in the event assistance is needed with an application or instrumentation problem.

ENVIMAP Processing and Mapping Software

Supplied with ENVI-MAG, and custom designed for this purpose, is easy-to-use, very user-friendly, menu driven data processing and mapping software called ENVIMAP. This unique software appears to the user to be a single program, but is in fact a sequence of separate programs, each performing a specific task. Under the menu system, there are separate programs to do the following:

a) read the ENVI-MAG data and reformat it into a standard compatible with the ENVIMAP software
b) grid the data into a standard grid format
c) create a vector file of posted values with line and baseline identification that allows the user to add some title information and build a suitable surround
d) contour the gridded data
e) autoscale the combined results of the posting/surround step and the contouring step to fit on a standard 8.5 ins. wide dot-matrix printer
f) rasterize and output the results of step e) to the printer

ENVIMAP is designed to be as simple as possible. The user is required to answer a few basic questions asked by ENVIMAP, and then simply toggles "GO" to let ENVIMAP provide default parameters for the making of the contour map. The user can modify certain characteristics of the output plot. ENVIMAP'S menu system is both keyboard and mouse operable. HELP screens are integrated with the menu system so that HELP is displayed whenever the user requests it.

Options Available

- True simultaneous gradiometer upgrade
- Base station upgrade
- Display heater for low temperature operations
- External battery pouch

Specifications

Total Field Operating Range

20,000 to 100,000 nT (gammas)

Total Field Absolute Accuracy

+/- 1nT

Sensitivity

0.1 nT at 2 second sampling rate

Tuning

Fully solid state. Manual or automatic, keyboard selectable

Cycling (Reading) Rates

0.5, 1 or 2 seconds, up to 9999 seconds for base station applications, keyboard selectable

Gradiometer Option

Includes a second sensor, 20 inch (½m) staff extender and processor module

"WALKMAG" Mode

0.5 second for walking surveys, variable rates for hilly terrain

Digital Display

LCD "Super Twist", 240 x 64 dots graphics, 8 line x 40 characters alphanumerics

Display Heater

Thermostatically controlled, for cold weather operations

Keyboard Input

17 keys, dual function, membrane type

Notebook Function

32 characters, 5 user-defined MACRO's for quick entry

Standard Memory

Total Field Measurements:	28,000 readings
Gradiometer Measurements:	21,000 readings
Base Station Measurements:	151,000 readings

Expanded Memory

Total Field Measurements:	140,000 readings
Gradiometer Measurements:	109,000 readings
Base Station Measurements:	750,000 readings

Real-Time Clock

Records full date, hours, minutes and seconds with 1 second resolution, +/- 1 second stability over 12 hours

Digital Data Output

RS-232C interface, 600 to 57,600 Baud, 7 or 8 data bits, 1 start, 1 stop bit, no parity format. Selectable carriage return delay (0-999 ms) to accommodate slow peripherals. Handshaking is done by X-on/X-off

Analog Output

0 - 999 mV full scale output voltage with keyboard selectable range of 1, 10, 100, 1,000 or 10,000 nT full scale

Power Supply

Rechargeable "Camcorder" type, 2.3 Ah, Lead-acid battery.

12 Volts at 0.65 Amp for magnetometer, 1.2 Amp for gradiometer,

External 12 Volt input for base station operations

Optional external battery pouch for cold weather operations

Battery Charger

110 Volt - 230 Volt, 50/60 Hz

Operating Temperature Range

Standard 0° to 60°C
Optional -40°C to 60°C

Dimensions

Console - 10 x 6 x 2.25 inches (250 mm x 152 mm x 55 mm)

T.F. sensor - 2.75 inches dia. x 7 inches (70 mm x 175 mm)

Grad. sensor and staff extender - 2.75 inches dia. x 26.5 inches (70 mm x 675 mm)

T.F. staff - 1 inch dia. x 76 inches (25 mm x 2 m)

Weight

Console - 5.4 lbs (2.45 kg) with rechargeable battery

T. F. sensor - 2.2 lbs (1.15 kg)

Grad. sensor - 2.5 lbs (1.15 kg)

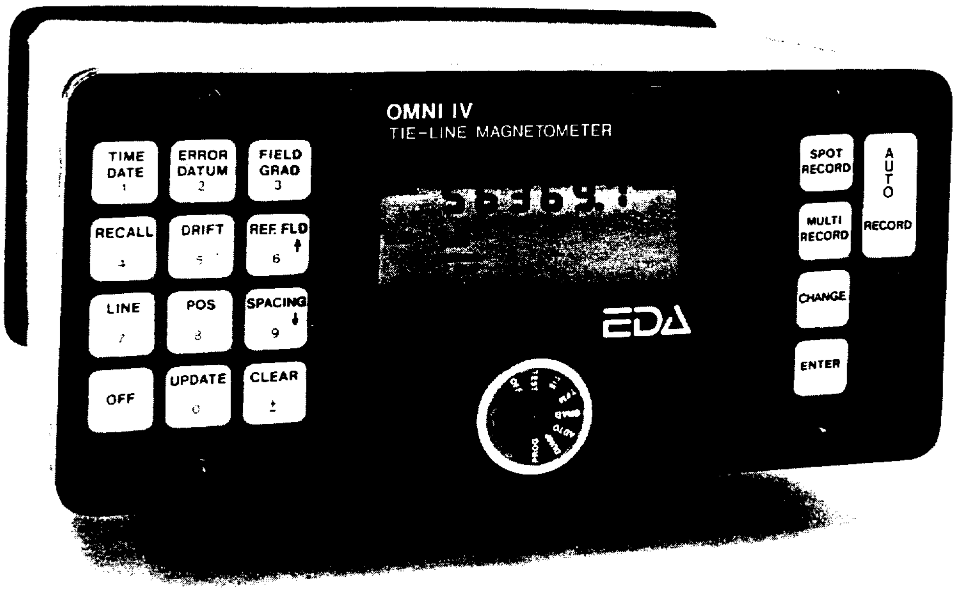
Staff - 1.75 lbs (0.8 kg)

SCINTREX

Head Office
222 Snidercroft Road
Concord, Ontario, Canada L4K 1B5
Telephone: (905) 669-2280
Fax: (905) 669-6403 or 669-5132
Telex: 06-964570

In the USA:
Scintrex Inc.
85 River Rock Drive
Unit 202
Buffalo, NY 14207
Telephone: (716) 298-1219
Fax: (716) 298-1317

OMNI IV "Tie-Line" Magnetometer



Four Magnetometers in One

Self Correcting for Diurnal Variations

Reduced Instrumentation Requirements

25% Weight Reduction

User Friendly Keypad Operation

Universal Computer Interface

Comprehensive Software Packages

Specifications

ynamic Range	18,000 to 110,000 gammas. Roll-over display feature suppresses first significant digit upon exceeding 100,000 gammas.
Tuning Method	Tuning value is calculated accurately utilizing a specially developed tuning algorithm
itomatic Fine Tuning	± 15% relative to ambient field strength of last stored value
Display Resolution	0.1 gamma
ocessing Sensitivity	± 0.02 gamma
atistical Error Resolution	0.01 gamma
Absolute Accuracy	± 1 gamma at 50,000 gammas at 23°C ± 2 gamma over total temperature range
andard Memory Capacity	
Total Field or Gradient	1,200 data blocks or sets of readings
Tie-Line Points	100 data blocks or sets of readings
Base Station	5,000 data blocks or sets of readings
splay	Custom-designed, ruggedized liquid crystal display with an operating temperature range from −40°C to +55°C. The display contains six numeric digits, decimal point, battery status monitor, signal decay rate and signal amplitude monitor and function descriptors.
232 Serial I/O Interface	2400 baud, 8 data bits, 2 stop bits, no parity
Gradient Tolerance	6,000 gammas per meter (field proven)
st Mode	A. Diagnostic testing (data and programmable memory) B. Self Test (hardware)
ensor	Optimized miniature design. Magnetic cleanliness is consistent with the specified absolute accuracy.
adient Sensors	0.5 meter sensor separation (standard), normalized to gammas/meter. Optional 1.0 meter sensor separation available. Horizontal sensors optional.
Sensor Cable	Remains flexible in temperature range specified, includes strain-relief connector
cling Time (Base Station Mode)	Programmable from 5 seconds up to 60 minutes in 1 second increments
Operating Environmental Range	−40°C to +55°C; 0–100% relative humidity; weatherproof
wer Supply	Non-magnetic rechargeable sealed lead-acid battery cartridge or belt; rechargeable NiCad or Disposable battery cartridge or belt; or 12V DC power source option for base station operation.
ttery Cartridge/Belt Life	2,000 to 5,000 readings, for sealed lead acid power supply, depending upon ambient temperature and rate of readings
Weights and Dimensions	
Instrument Console Only	2.8 kg, 238 x 150 x 250mm
NiCad or Alkaline Battery Cartridge	1.2 kg, 235 x 105 x 90mm
NiCad or Alkaline Battery Belt	1.2 kg, 540 x 100 x 40mm
Lead-Acid Battery Cartridge	1.8 kg, 235 x 105 x 90mm
Lead-Acid Battery Belt	1.8 kg, 540 x 100 x 40mm
Sensor	1.2 kg, 56mm diameter x 200mm
Gradient Sensor (0.5 m separation - standard)	2.1 kg, 56mm diameter x 790mm
Gradient Sensor (1.0 m separation - optional)	2.2 kg, 56mm diameter x 1300mm
Standard System Complement	Instrument console; sensor; 3-meter cable, aluminum sectional sensor staff, power supply, harness assembly, operations manual.
Base Station Option	Standard system plus 30 meter cable
Gradiometer Option	Standard system plus 0.5 meter sensor

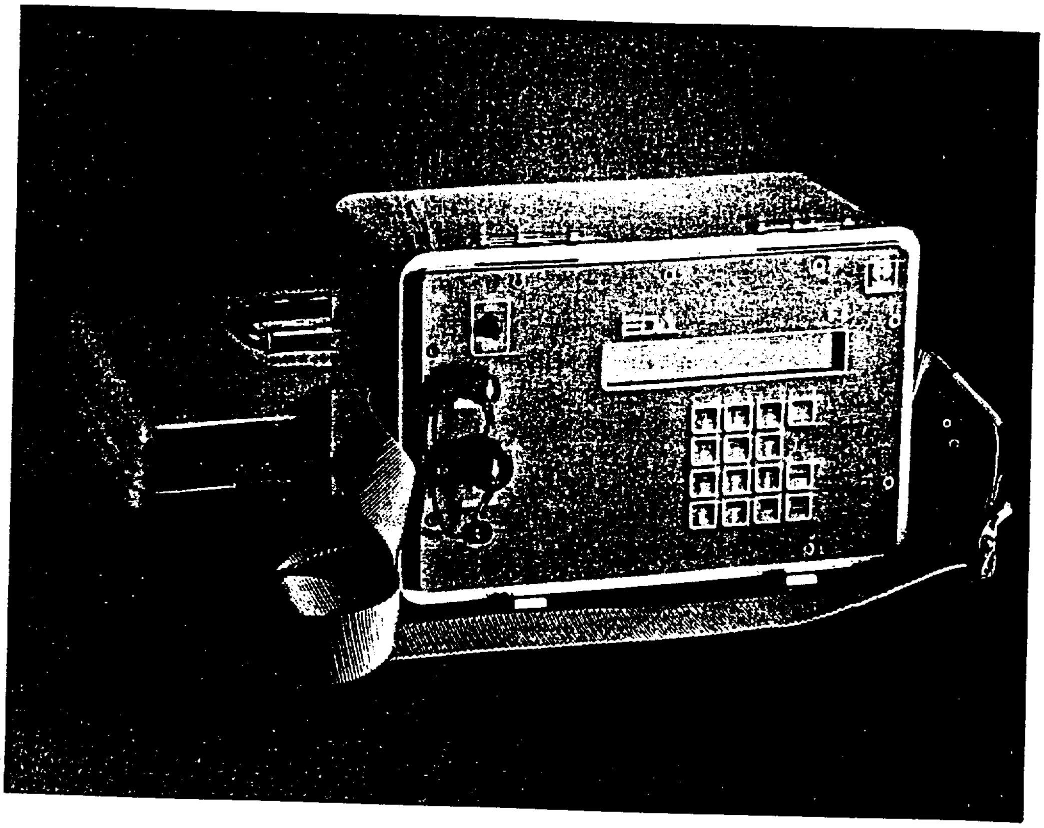
E D A Instruments Inc.
4 Thorncliffe Park Drive
Toronto, Ontario
Canada M4H 1H1
Telex: 06 23222 EDA TOR
Cable: Instruments Toronto
(416) 425 7800

In U.S.A.
E D A Instruments Inc.
5151 Ward Road
Wheat Ridge, Colorado
U.S.A. 80033
(303) 422 9112

Printed in Canada

APPENDIX B

IP-4
Four Dipole
Time Domain IP Receiver



Major Benefits

- 4 Dipoles Simultaneously Measured
- Ten Windows Available
- Choice of Arithmetic or Logarithmic Window Width
- Programmable Arithmetic Window Width
- High Input Voltage
- Weighs Only 8.5 kg.
- User Friendly

Specifications

Dipoles	4 simultaneous input dipoles.
Input Voltage (Vp) Range	Standard: — 8 volt maximum for each dipole — maximum sum of 12 volts from the second to the sixth dipole. Additional Setting: — attenuation of up to 40 volts on the first dipole.
Input Voltage Protection	Up to 1000 volts.
Vp Resolution	1 microvolt.
Vp Accuracy	0.3% typical; maximum 1% over temperature range.
Chargeability Resolution	1 millivolt/volt for Vp greater than 10 millivolts. 0.1 millivolt/volt for Vp greater than 100 millivolts.
Chargeability Accuracy	0.6% typical; maximum 2% for Vp greater than 10 millivolts over temperature range.
Automatic SP Compensation	±1 volt with linear drift correction up to 1 millivolt/second.
Input Impedance	10 megohm.
Sample Rate	10 milliseconds.
Automatic Stacking	1 to 999 cycles.
Synchronization	Minimum primary voltage level of 40 microvolts.
Rejection Filters	50 and 60 Hz power line rejection greater than 100 dB.
Grounding Resistance Check	0.1 to 128 kilo-ohms.
Compatible Transmitters	Any time domain waveform transmitter with a pulse duration of 1, 2, 4 or 8 seconds and a crystal timing stability of 100 ppm.
Programmable Parameters	Geometric parameters, time parameter, intensity of current, type of array, line and station number, dipole length, window width and delay time (mode 2).
Display	Two-line, 40-character alphanumeric liquid crystal display protected by an internal heater for low temperature conditions.
Memory Capacity	1800 sets of readings.
RS-232C Serial I/O Interface	300 to 19,200 baud rate; 7 or 8 data bits; 1 or 2 stop bits; odd, even, no parity.
Console Power Supply	Six - 1.5V "D" cell alkaline batteries with auto power save feature; 20 hours of operation at 20°C.
Operating Environmental Range	−40°C to +60°C; 0 to 100% relative humidity; weatherproof.
Weight and Dimensions	8.5 kg. (with batteries), 300 x 200 x 240 mm.
Standard System Complement	Instrument console with carrying strap, batteries, data transfer cable and operations manual.
Displayed Parameters	Primary voltage, partial and total decimalized chargeabilities, running and cumulative average of total chargeabilities (in fixed modes), standard deviation of primary voltage and total chargeability, self potential, number of cycles, dipole being measured and contact resistance.
Available Options	Stainless steel transmitting electrodes, copper sulphate receiving electrodes, alligator clips, bridge leads, multi dipole wire cable, wire spools and software programs.

EDA Instruments Inc.
4 Thorncliffe Park Drive
Toronto, Ontario
Canada M4H 1H1
Telex: 06 23222 EDA TOR
Cable: EDAINSTRMTS TORONTO
Telephone: (416) 425 7800
Fax: (416) 425 8135

In USA
EDA Instruments Inc.
9200 E. Mineral Avenue
Suite 370
Englewood, Colorado, U.S.A. 80112
Telephone: (303) 790 2541
Fax: (303) 790 2902

PRINTED IN CANADA

IPC-7/2.5kW Induced Polarization and Commutated DC Resistivity Transmitter

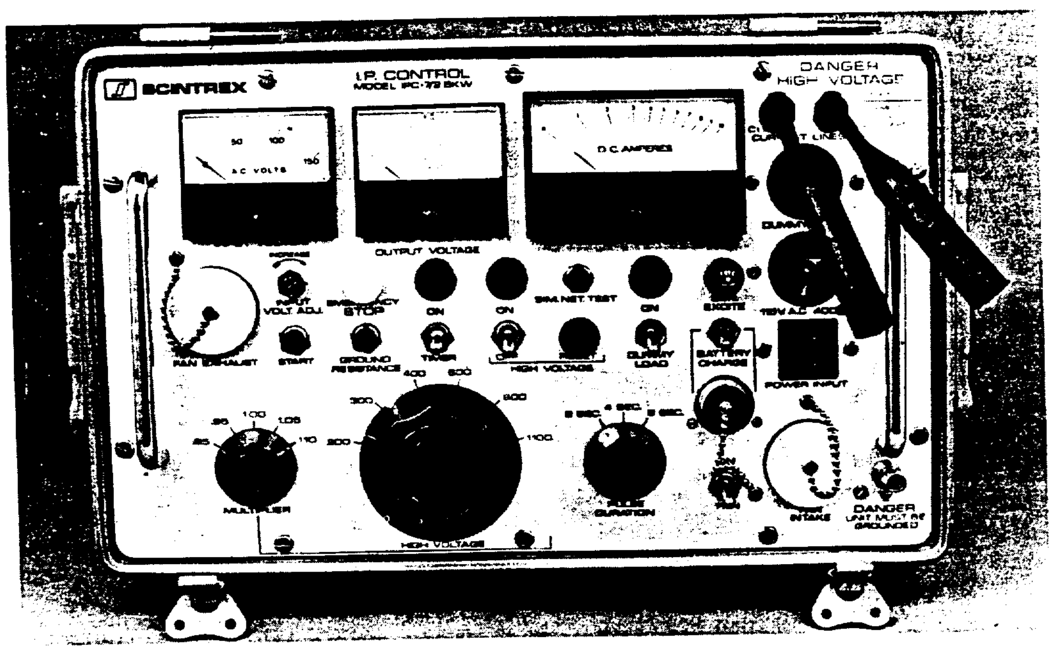
The IPC-7/2.5kW is a medium power transmitter system used under a wide variety of geophysical, climatic and topographic conditions. It consists of an electronic console, a motor-generator and a dummy load which takes the power load during parts of the time domain cycle when current is not transmitted into the ground.

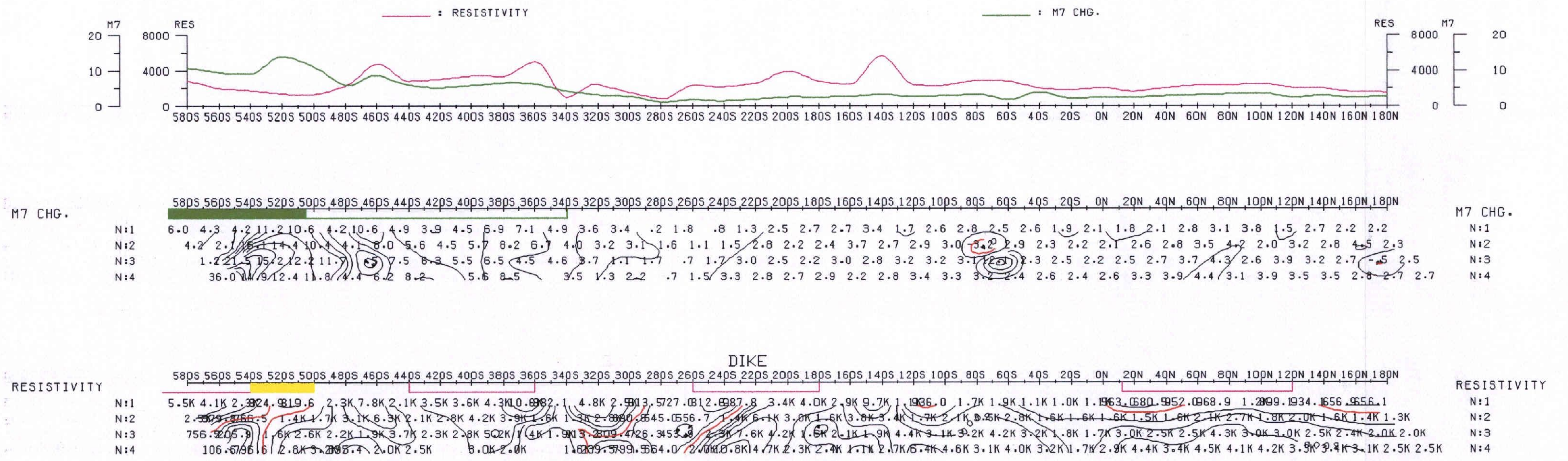
The compact design of this system makes it portable and highly versatile for use with a wide variety of electrode arrays.

The IPC-7/2.5kW features an overload protection circuit and an open loop circuit which protects both the instrument and the operators. The built-in ohmmeter permits verification that the current dipole circuit is grounded which is not only a safety feature but also allows selection of adequate current for proper signal at the receiver.

Very high period time stability is ensured by a crystal-controlled programmer making the IPC-7/2.5kW ideal for broadband spectral induced polarization measurements.

The transmitter console has a maximum current output of 10 A and a voltage output ranging from 200 — 1210 V DC. When coupled with the 2.5kW motor-generator, the maximum output power of this overall system is 1.85kW which results in a very favorable powerweight ratio.





LINE : 800 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...
"A" SPACING = 20.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

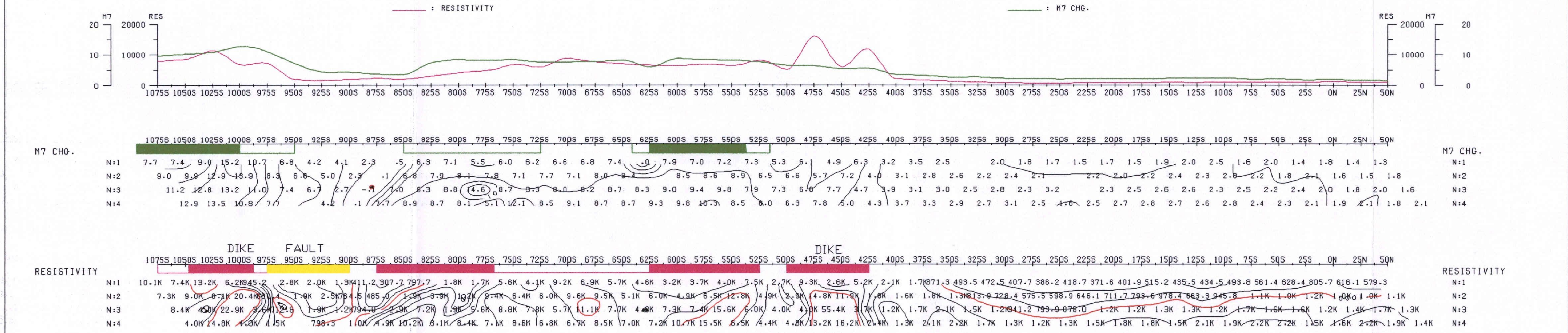
POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997 REF : E266

SCALE = 1: 2400

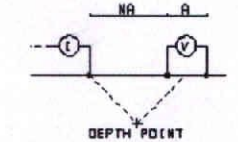
EXSICS EXPLORATION LTD



LINE : 1600 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

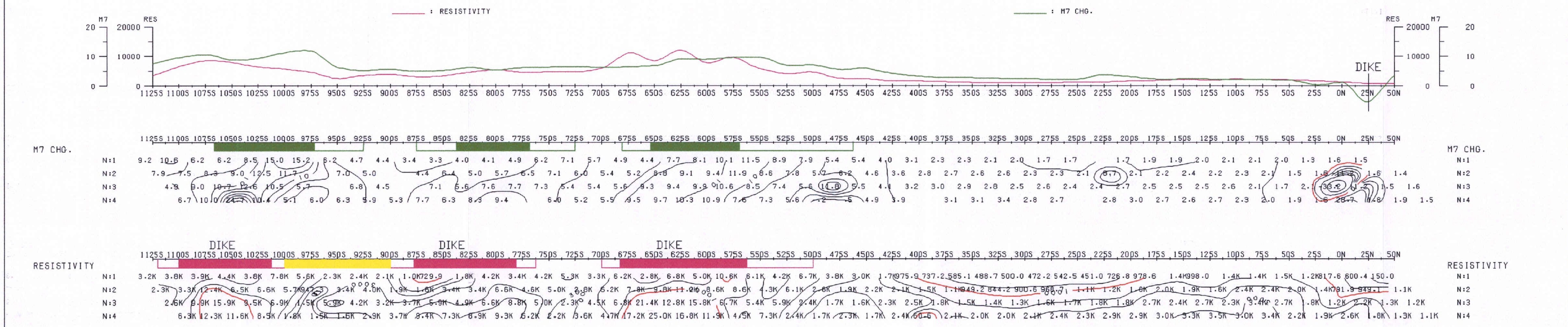
POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997 | REF : E266

SCALE = 1: 2400

EXSICS EXPLORATION LTD.



LINE : 1700 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

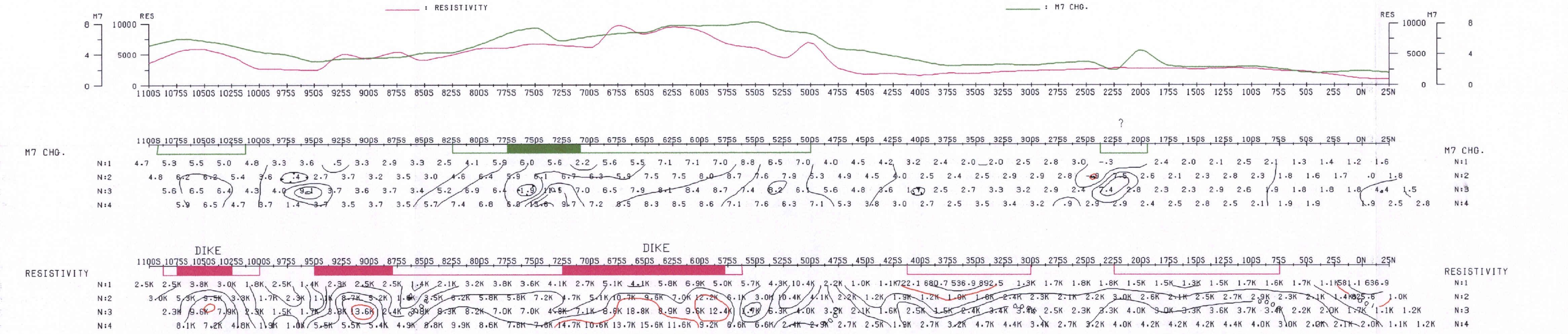
BRISTOL TWP.

DATE : JULY 1997

REF : E266

SCALE = 1: 2400

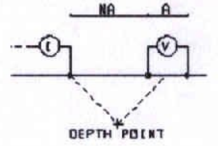
EXSICS EXPLORATION LTD.



LINE : 1800 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997 REF : E266

SCALE = 1: 2400

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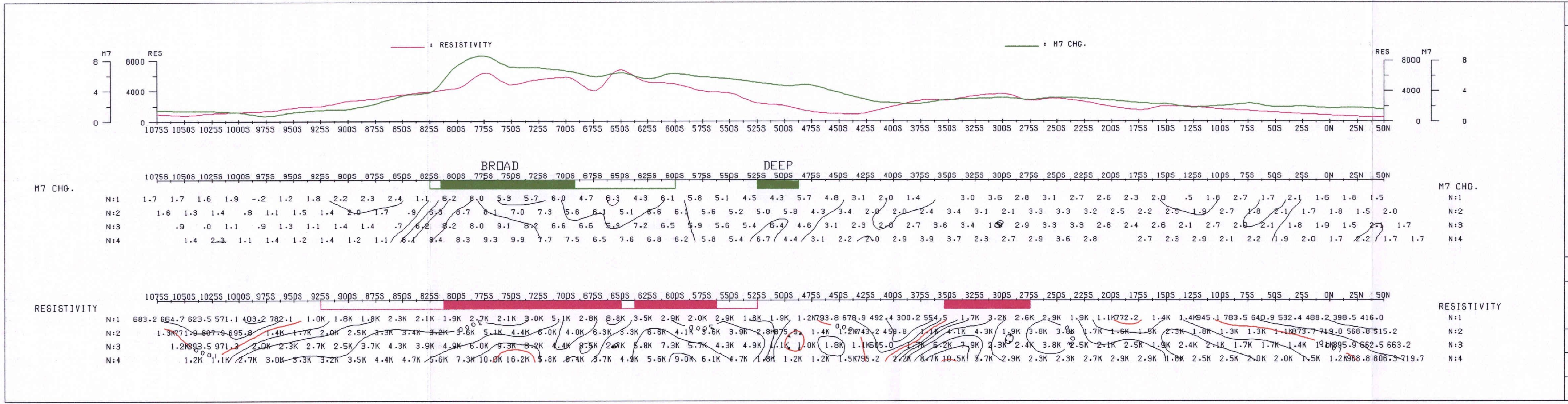


LINE : 1900 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17654

PELANGIO LARDER / COPPER DOME

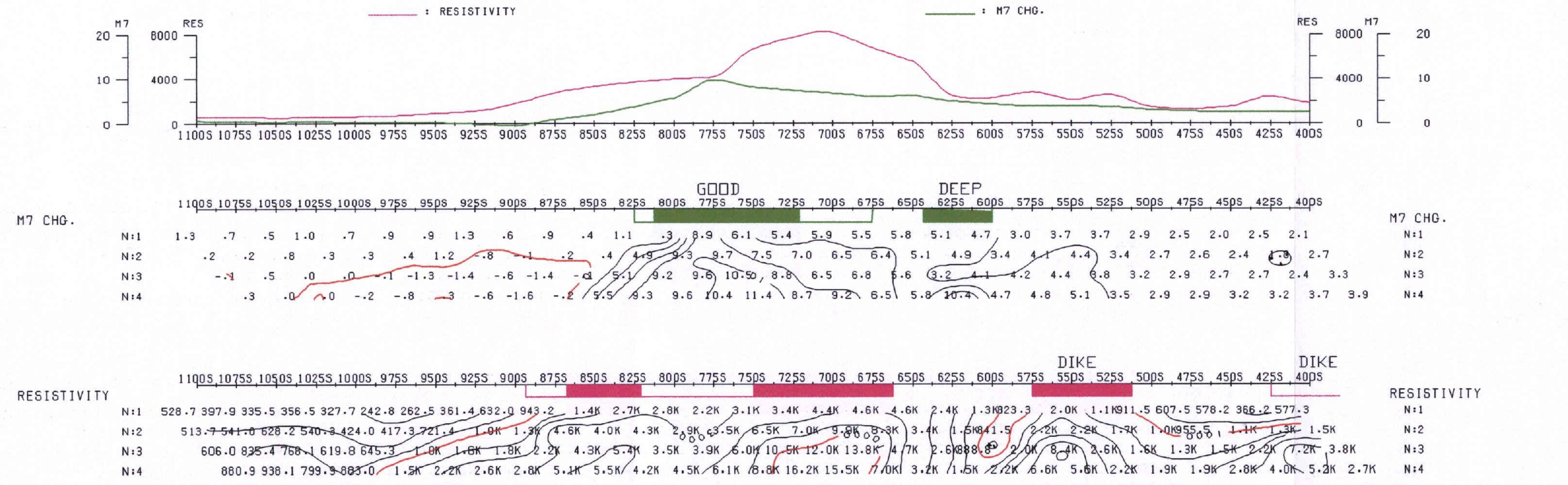
POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997 REF : E266

SCALE = 1: 2400

EXSICS EXPLORATION LTD.



LINE : 2000 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...

"A" SPACING = 25.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997

REF : E266

SCALE = 1: 2400

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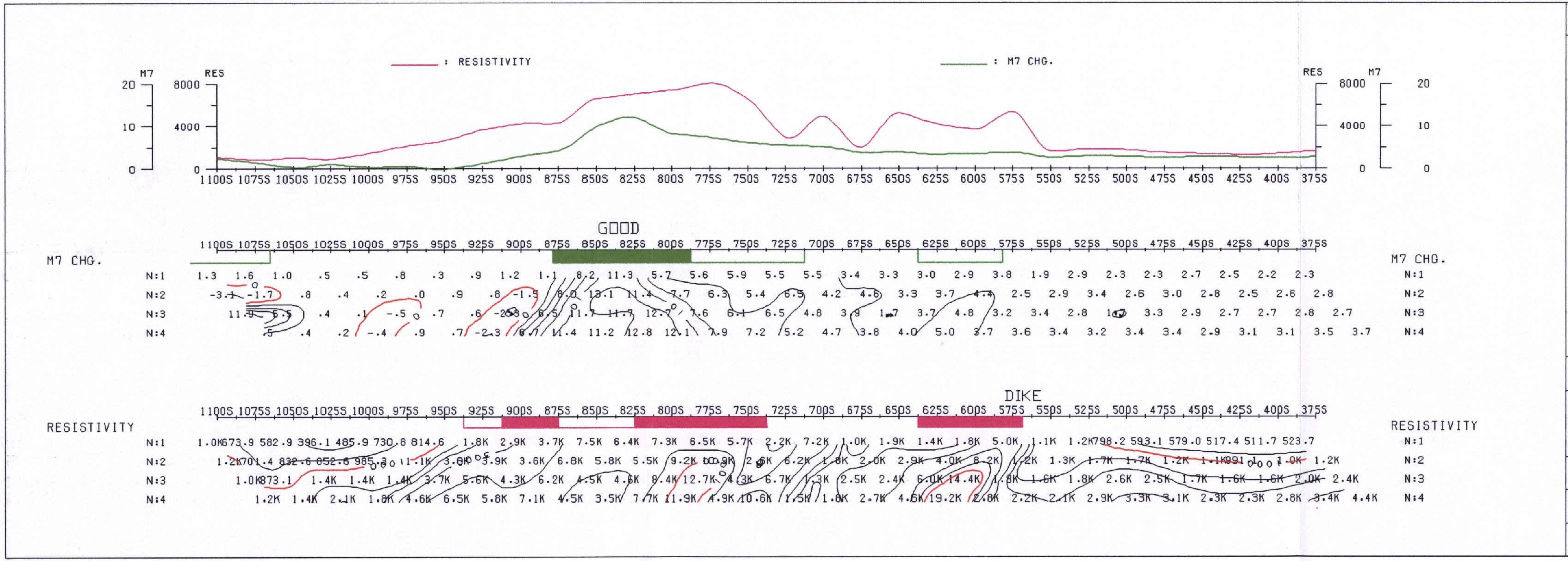
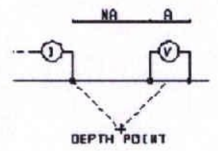


LINE : 2100 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17654

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY
BRISTOL TWP.

DATE : JULY 1997 | REF : E266

SCALE = 1: 2400

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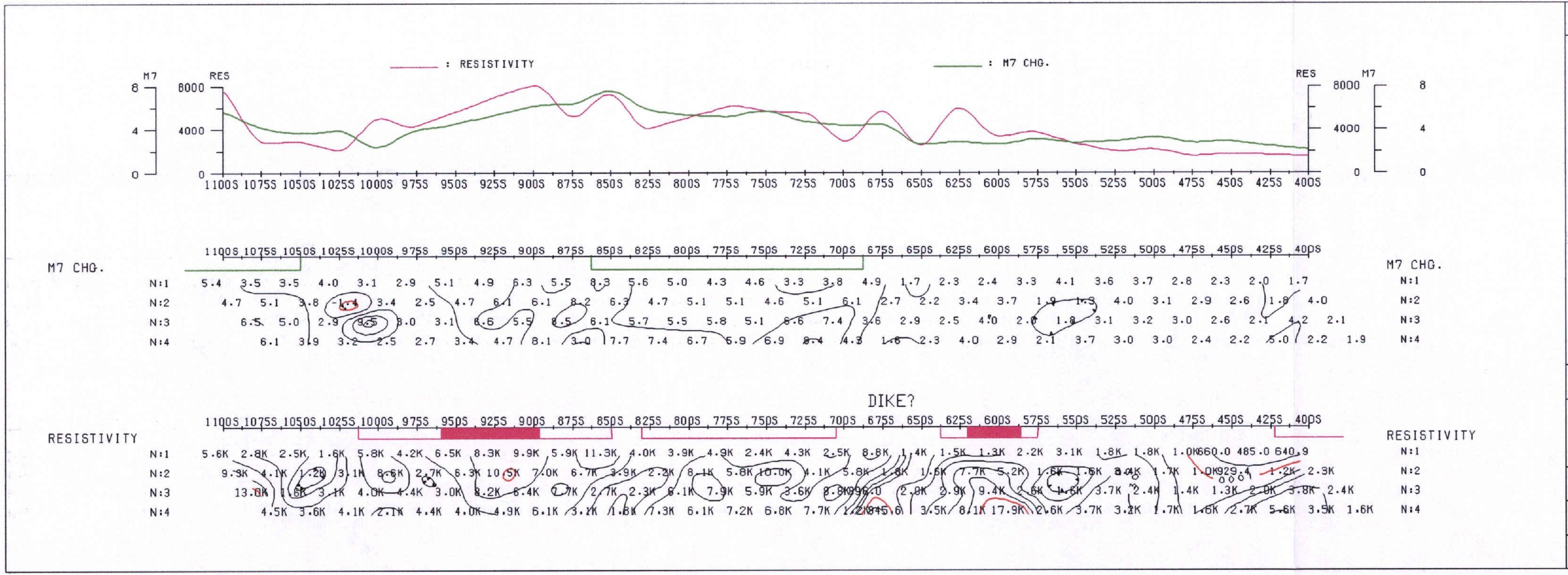


LINE : 2200 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

DEPTH POINT

N = 1, 2, 3, 4, ...

"A" SPACING = 25.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

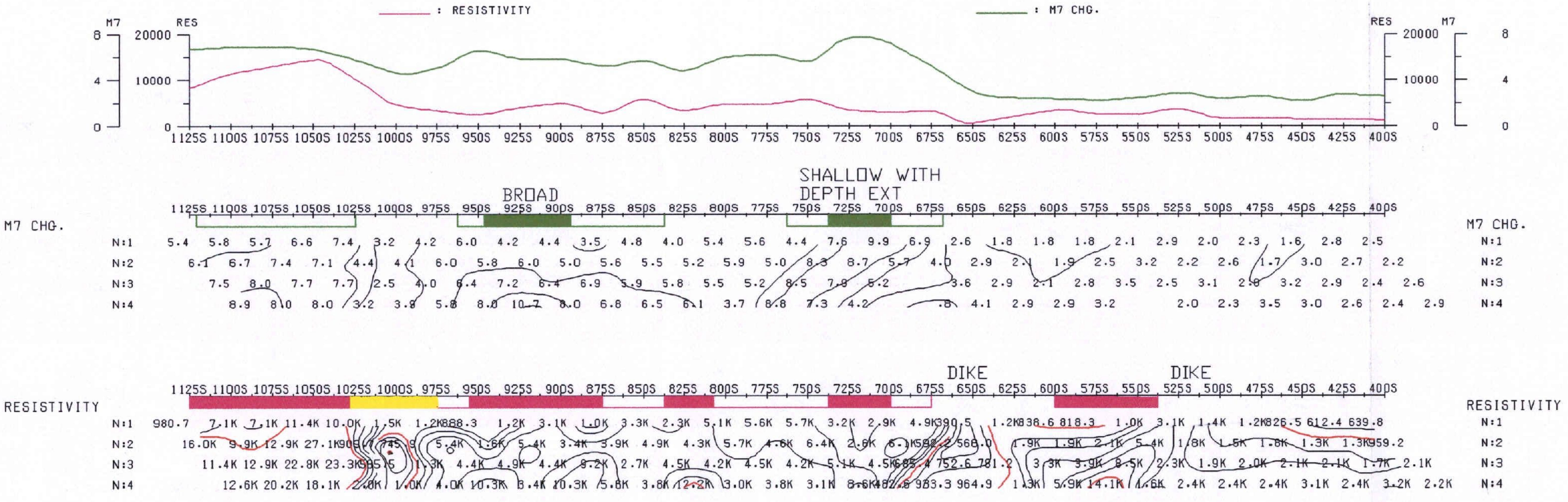
POIRIER PROPERTY

BRISTOL TWP.

DATE : JUNE 1997 | REF : E266

SCALE = 1: 2400

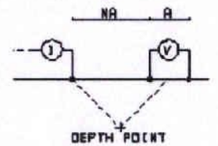
EXSICS EXPLORATION LTD.



LINE : 2300 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JUNE 1997	REF : E266

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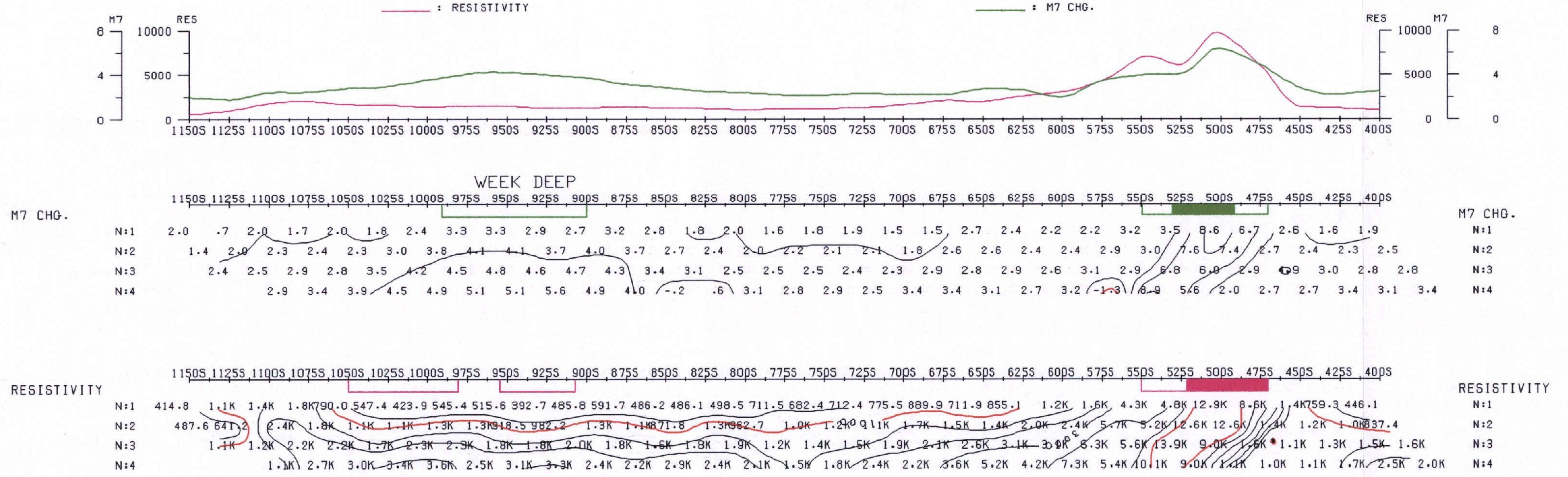

LINE : 2400 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17054

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JUNE 1997 | REF : E266

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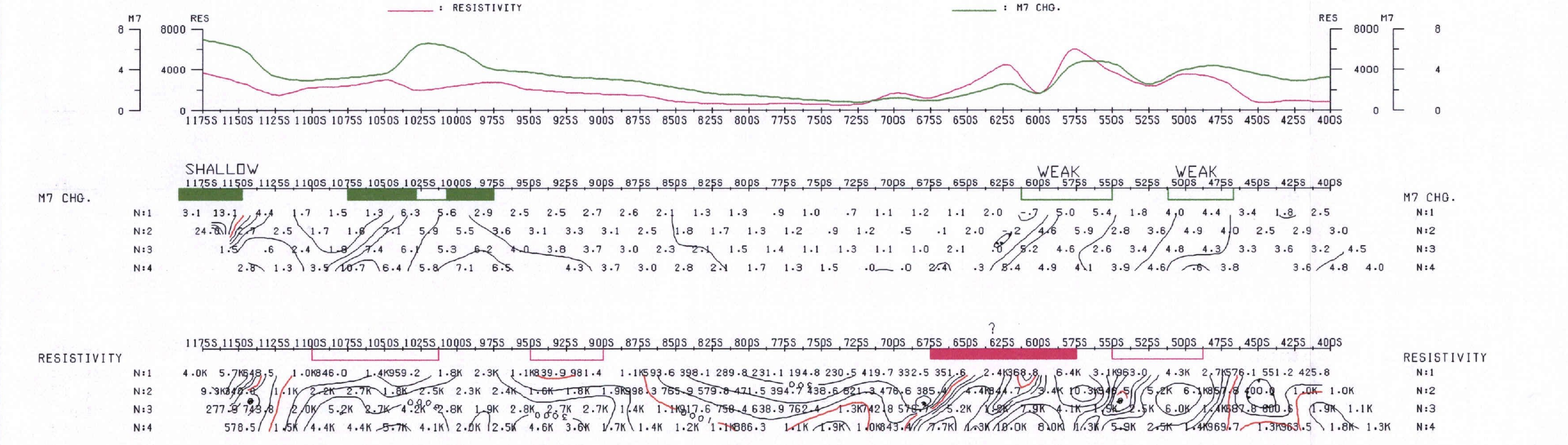

LINE : 2500 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17654

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JUNE 1997	REF : E266

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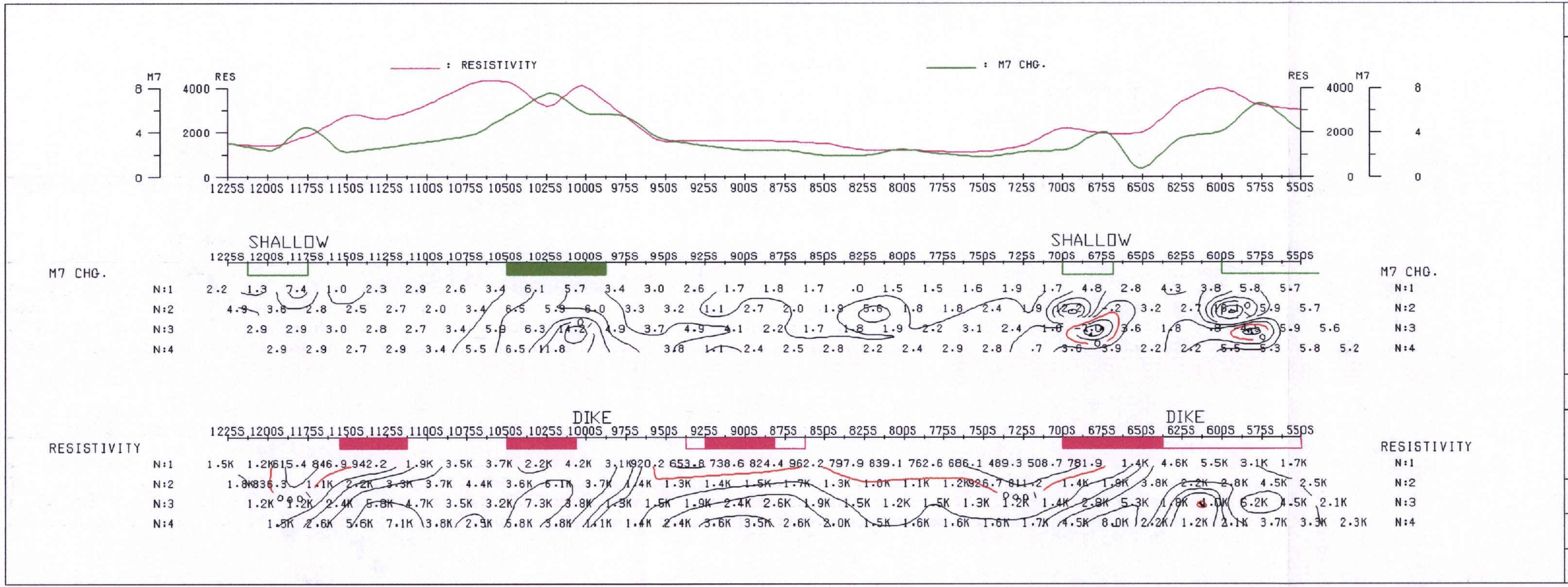

LINE : 2600 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997	REF : E266

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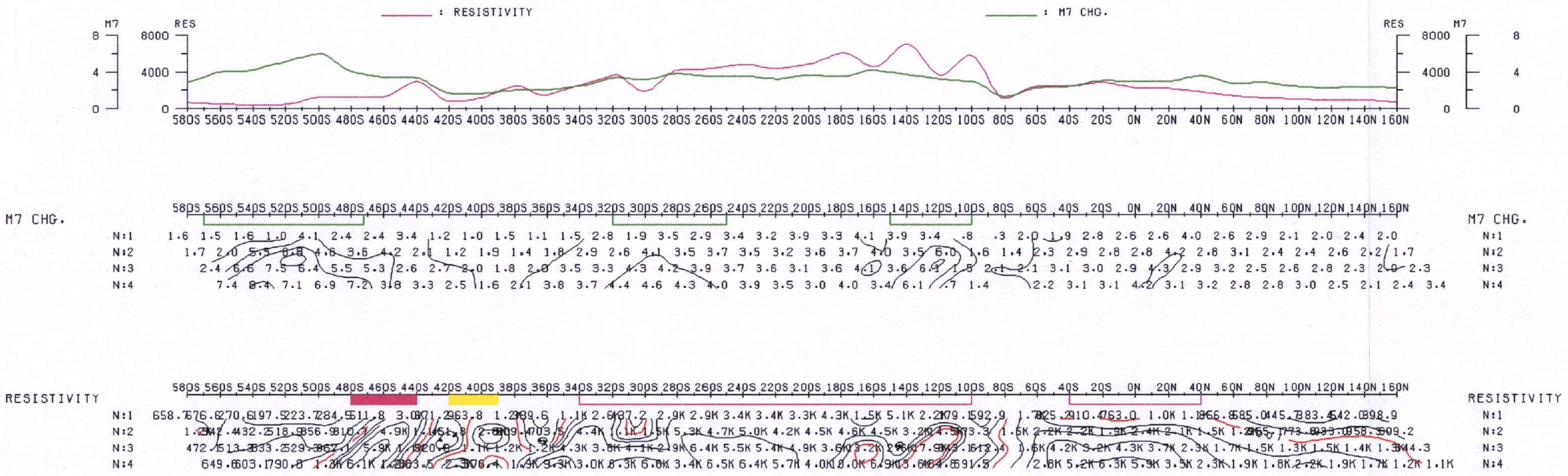
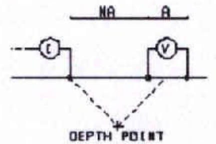


LINE : 900 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...

"A" SPACING = 20.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997	REF : E266

SCALE = 1: 2400

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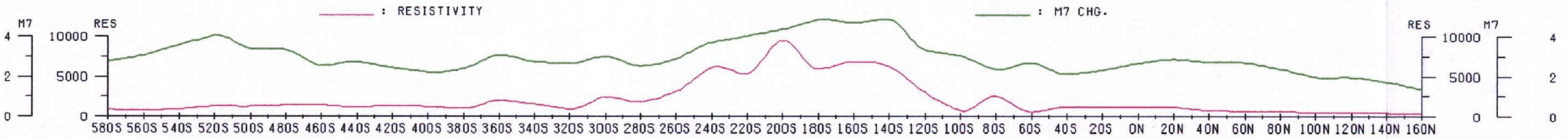
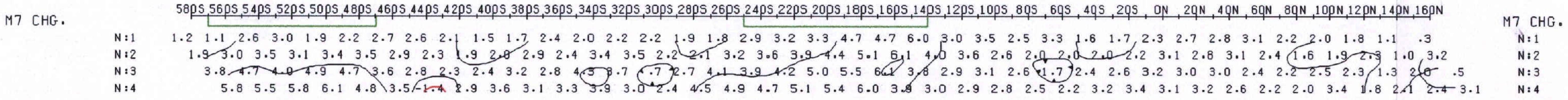
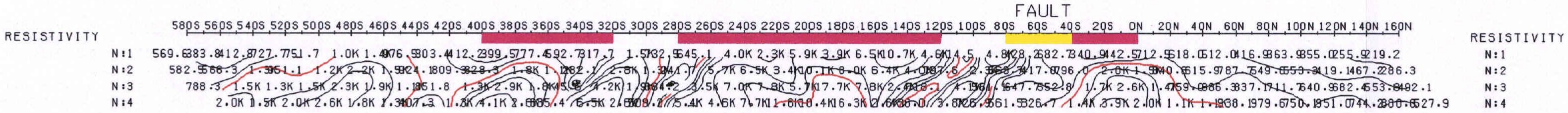


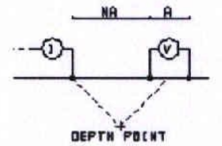




LINE : 1000 W

INDUCED POLARIZATION
SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 20.0 METRES

2.17654

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997	REF : E266

SCALE = 1: 2400

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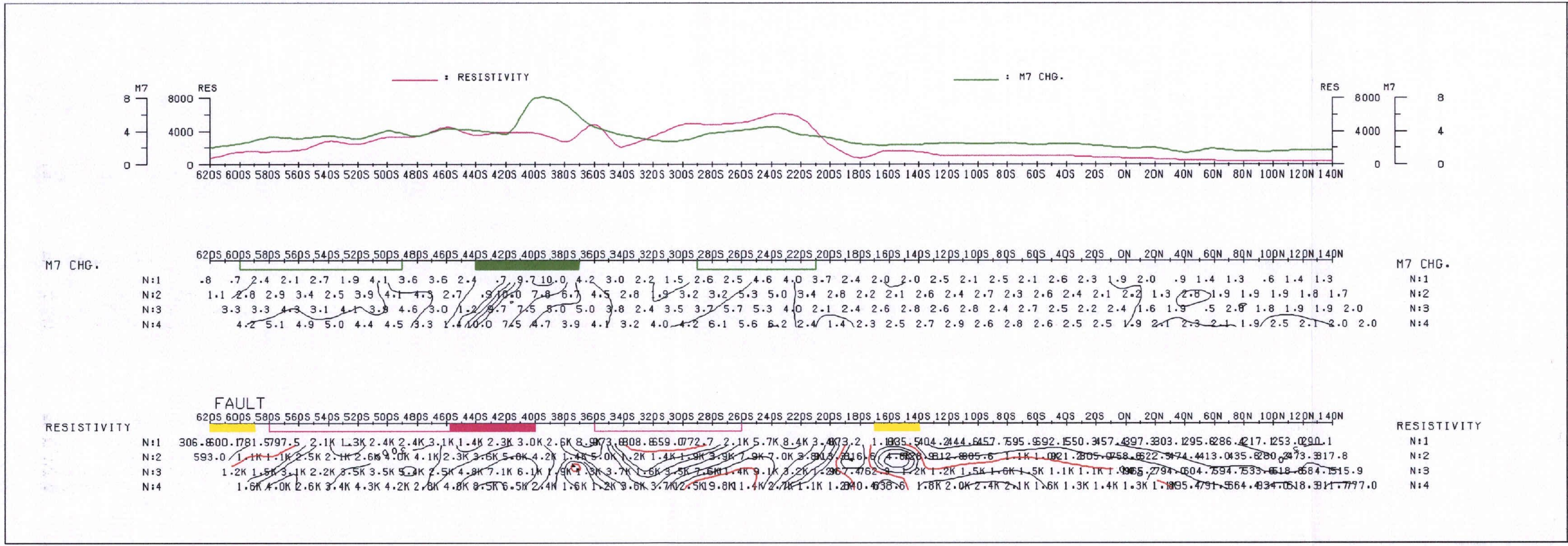


LINE : 1100 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...

"A" SPACING = 20.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997	REF : E266

SCALE = 1: 2400

EXSICS EXPLORATION LTD.

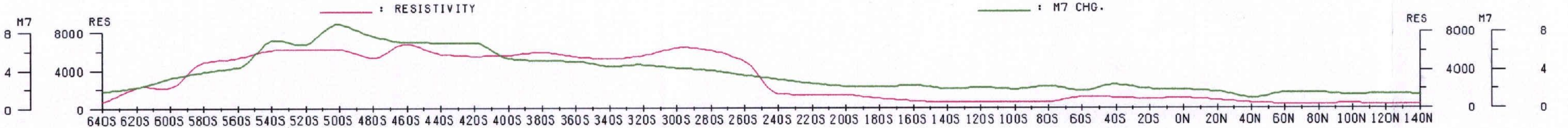
LINE : 1200 W

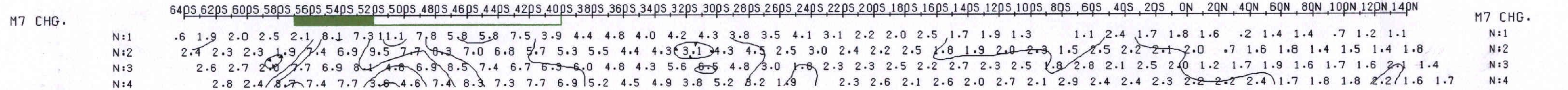
INDUCED POLARIZATION SURVEY

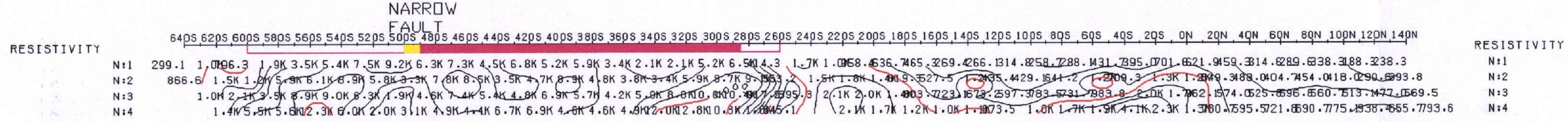
POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...
"A" SPACING = 20.0 METRES

2.17054







PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997	REF : E266

SCALE = 1: 2400

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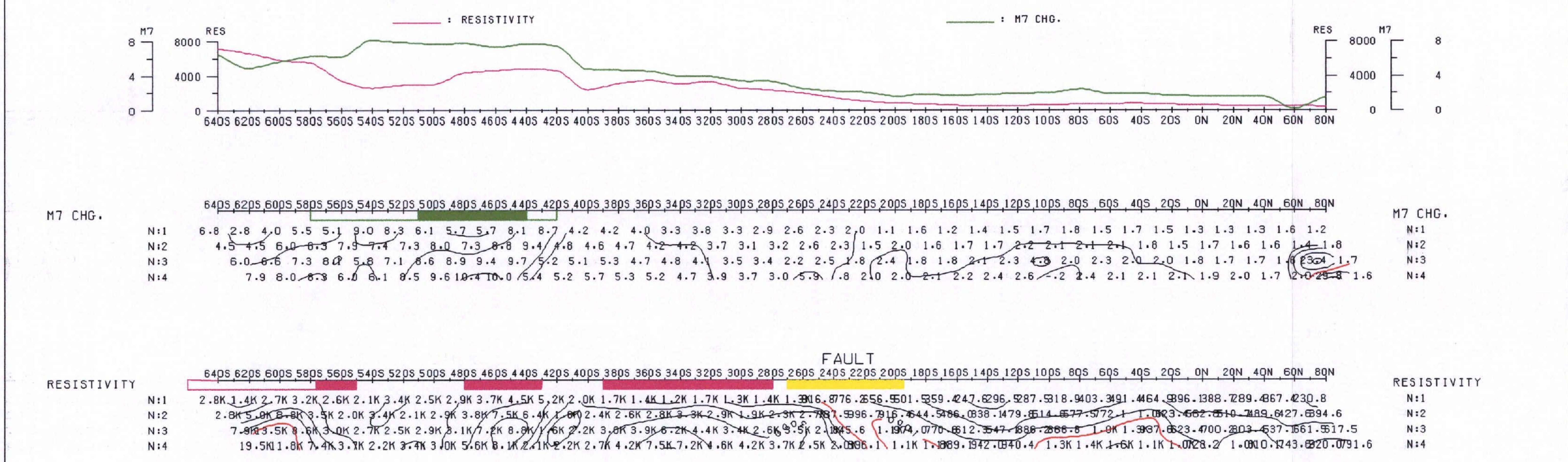


LINE : 1300 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY

N = 1, 2, 3, 4, ...
"A" SPACING = 20.0 METRES

2.17854

PELANGID LARDER / COPPER DOME

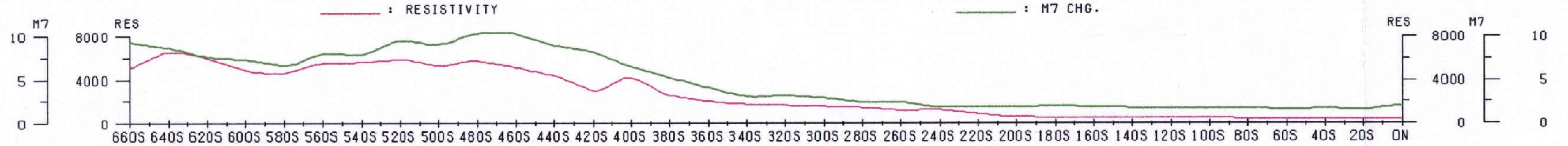
POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997 | REF : E266

SCALE = 1: 2400

EXSICS EXPLORATION LTD.



M7 CHG.

660S 640S 620S 600S 580S 560S 540S 520S 500S 480S 460S 440S 420S 400S 380S 360S 340S 320S 300S 280S 260S 240S 220S 200S 180S 160S 140S 120S 100S 80S 60S 40S 20S 0N

N:1 8.7 8.4 7.3 6.8 5.1 7.2 2.2 7.0 8.1 10.6 11.1 8.9 8.4 6.6 5.3 3.9 3.0 2.8 2.8 2.2 2.5 1.5 1.6 1.7 1.7 2.0 1.4 1.4 1.3 1.6 1.2 1.3 1.4 1.9
N:2 10.2 10.0 7.3 5.9 7.1 9.3 [illegible] 9.7 8.4 11.1 11.2 10.0 9.8 7.9 6.2 4.7 2.3 3.1 3.1 2.6 2.8 1.9 1.9 1.9 2.4 1.9 1.8 1.8 1.7 1.9 1.6 1.7 1.3 2.6 1.6
N:3 9.9 8.9 6.2 7.6 7.5 10.3 9.4 10.7 10.3 9.2 9.9 8.7 7.0 5.4 4.1 4.9 3.3 2.8 3.1 2.2 2.1 1.9 2.1 1.3 2.0 2.2 2.0 2.1 1.8 1.9 1.9 2.3 .9 1.8
N:4 9.0 7.6 7.8 7.9 9.8 11.2 9.6 8.2 9.0 8.5 7.5 5.9 4.5 4.2 3.6 2.8 3.2 2.6 2.4 2.2 2.0 2.2 2.0 2.3 2.1 2.3 2.0 2.4 2.0 2.0 2.4 1.9 2.2

M7 CHG.
N:1
N:2
N:3
N:4

RESISTIVITY

660S 640S 620S 600S 580S 560S 540S 520S 500S 480S 460S 440S 420S 400S 380S 360S 340S 320S 300S 280S 260S 240S 220S 200S 180S 160S 140S 120S 100S 80S 60S 40S 20S 0N

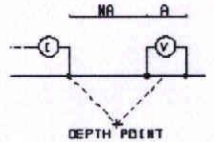
N:1 5.8K 6.3K 3.5K 2.5K 2.5K 2.6K 4.5K 5.1K 5.1K 6.0K 4.3K 3.6K 2.2K 4.9K 3.3K 1.8K41.3728.1743.7840.0772.8631.9547.1364.5333.7310.2311.0339.5312.7298.0273.8267.1275.8147.9
N:2 4.5K 4.2K 5.7K 3.3K 7.8K 4.6K 7.5K 6.1K 5.7K 6.5K 3.4K 4.0K 5.1K 3.0K 1.8K 1.8K 1.5K 1.3K 1.6K 1.4K 1.1K 1.3866.8531.0479.3454.3454.7477.9441.8412.3409.5344.9390.3309.4
N:3 3.1K 7.9K 6.1K 8.1K 4.5K 5.1K 6.7K 6.3K 5.5K 4.3K 4.1K 8.1K 2.6K 1.6K 1.8K 2.6K 2.3K 2.3K 2.1K 1.6K 1.3K15.2881.7710.6662.0657.6648.7693.5612.0603.4613.6575.3570.4575.1
N:4 6.6K 8.1K 3.1K 4.4K 5.9K 7.1K 6.0K 3.4K 5.5K 8.2K 3.6K 1.3K 1.8K 2.6K 3.3K 3.4K 2.6K 2.2K 1.7K 1.3K 2.6K 1.1904.3886.0886.1901.3906.6835.9712.7818.5742.3901.2895.3

RESISTIVITY
N:1
N:2
N:3
N:4

LINE : 1400 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 20.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

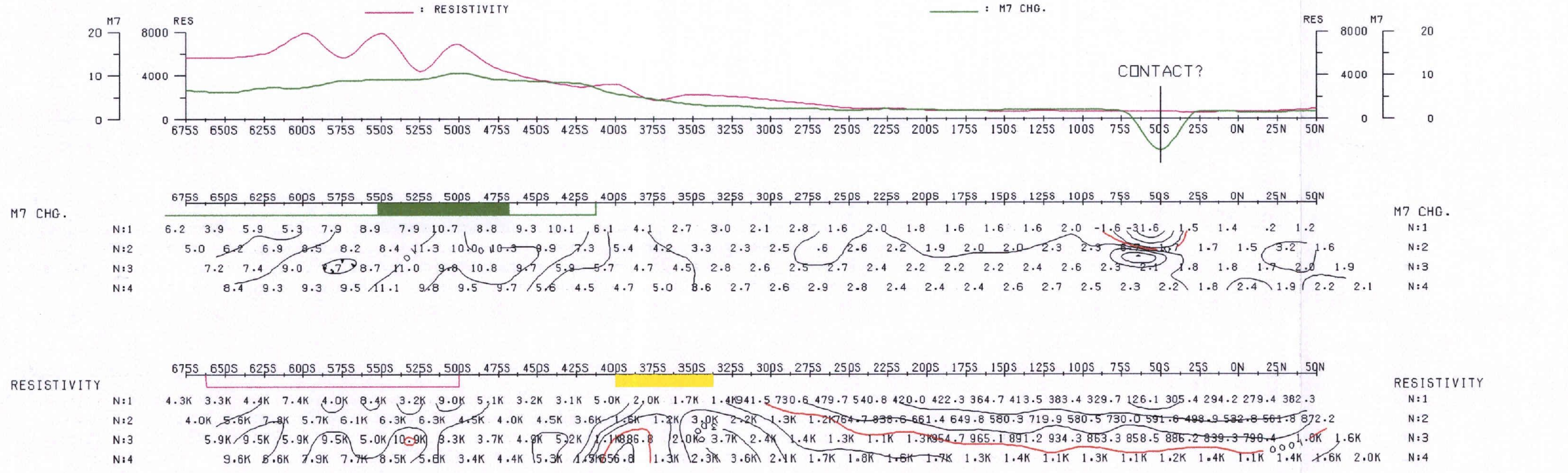
POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997	REF : E266

SCALE = 1: 2400

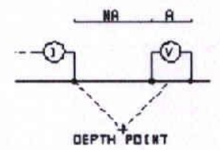
EXSICS EXPLORATION LTD.



LINE : 1500 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

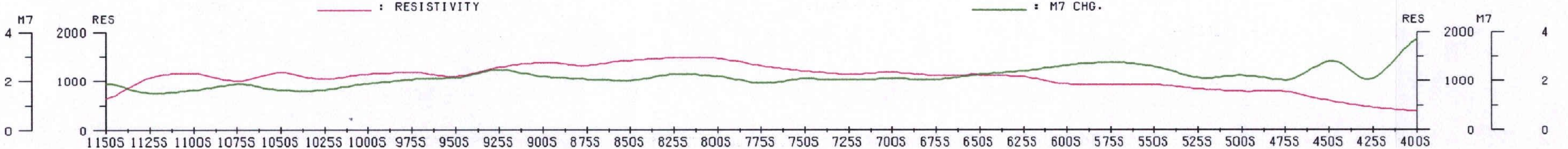
POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997	REF : E266

SCALE = 1: 2400

EXSICS EXPLORATION LTD.



NARROW DEEP

1150S 1125S 1100S 1075S 1050S 1025S 1000S 975S 950S 925S 900S 875S 850S 825S 800S 775S 750S 725S 700S 675S 650S 625S 600S 575S 550S 525S 500S 475S 450S 425S 400S

M7 CHG.

N:1	1.9	1.3	1.4	1.5	1.3	1.7	1.4	1.5	1.7	2.4	2.4	2.2	1.6	1.9	2.7	2.2	1.9	2.0	2.0	1.7	1.9	2.0	2.3	2.6	2.5	1.8	2.1	2.1	1.8	1.0	2.3
N:2	1.8	1.6	1.7	1.6	1.7	1.6	1.6	1.9	2.8	2.2	1.5	1.8	2.2	2.1	.7	2.1	1.9	1.9	1.9	2.1	2.1	2.5	2.7	2.8	2.1	2.3	2.4	3.4	1.4	3.1	4.4
N:3	2.2	1.5	1.9	.3	1.7	2.0	2.2	3.2	2.6	2.0	1.9	2.3	2.3	1.7	2.3	2.0	2.3	2.1	2.2	2.2	2.6	2.9	2.9	2.3	2.5	2.5	2.1	2.1	3.7	5.0	4.8
N:4	1.7	1.9	1.8	5.0	1.9	2.5	3.4	2.8	2.1	2.2	2.3	2.5	2.8	3.8	2.5	2.5	2.2	2.4	2.4	2.7	3.0	3.1	3.1	3.3	2.7	2.1	2.0	3.8	5.4	5.2	5.1

1150S 1125S 1100S 1075S 1050S 1025S 1000S 975S 950S 925S 900S 875S 850S 825S 800S 775S 750S 725S 700S 675S 650S 625S 600S 575S 550S 525S 500S 475S 450S 425S 400S

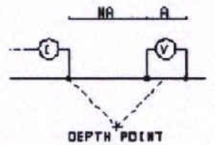
RESISTIVITY

N:1	498.4	623.6	485.3	415.3	737.5	619.3	581.4	492.3	518.2	862.8	1.2K	902.8	676.2	708.1	867.8	853.9	771.1	504.0	424.2	448.1	608.7	802.1	753.7	695.9	565.3	435.0	478.0	644.4	528.3	363.7	255.4
N:2	601.4	778.0	939.7	1.0K	1.3K	800.6	796.4	912.1	1.4K	1.4K	881.5	1.1K	1.3K	1.6K	1.4K	1.3K	877.8	770.0	946.2	1.2K	1.1K	1.1K	909.0	781.4	719.1	850.7	875.0	792.9	528.2	349.5	313.6
N:3	682.3	1.2K	1.8K	1.6K	1.3K	967.0	1.2K	2.1K	1.9K	940.5	1.1K	1.8K	2.4K	2.1K	1.6K	1.2K	1.1K	1.4K	2.0K	1.7K	1.2K	1.1K	987.0	877.1	1.2K	1.3K	900.6	680.7	430.7	403.1	431.8
N:4	957.1	2.1K	2.5K	1.5K	1.4K	1.4K	2.7K	2.5K	1.2K	1.4K	1.9K	2.8K	2.7K	2.2K	1.5K	1.5K	2.0K	2.7K	2.5K	1.7K	1.2K	1.1K	980.6	1.4K	1.7K	1.2K	703.5	526.3	467.3	514.6	685.9

LINE : 2700 W

INDUCED POLARIZATION SURVEY

POLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

2.17854

PELANGIO LARDER / COPPER DOME

POIRIER PROPERTY

BRISTOL TWP.

DATE : JULY 1997 | REF : E266

SCALE = 1: 2400

EXSICS EXPLORATION LTD.

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

Personal information collected on this form is obtained under the authority of subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, the informatio ... and correspond with the mining land holder. Questions about this co ... rthern Development and Mines, 6th Floor, 933 Ramsey Lake Road,

42A05NE0158 2.17854 BRISTOL

900

Instructions: - For ... se form 0240.
- Please type or print in ink.

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

Name: Copper-Dome Mines	Client Number: 303242
Address: 1022-470 Granville St	Telephone Number: 604-685-0895
Vancouver BC V6C 1V9	Fax Number: 604-685-8288
Name: R. Poirier	Client Number: 183246
Address: 561 Birch St. North	Telephone Number: 705-267-2576
Timmins Ontario	Fax Number: N/A.

2.17854

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

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

Work Type	Office Use	
Geophysical Surveys MAG, VLF-EM & Induced Polarization Surveys	Commodity	
	Total $ Value of Work Claimed	37,218
Dates Work Performed From 1 / 06 / 97 (Day / Month / Year) To 31 / 07 / 97 (Day / Month / Year)	NTS Reference	
Global Positioning System Data (if available) / Township/Area: Bristol Twp.	Mining Division	Porcupine
M or G-Plan Number: G-3998	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.

2.17854

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

Name: JOHN GRANT EXSICS EXPLORATION	Telephone Number: 705 267 4151
Address: 13-637 Algonquin Blvd. East, Timmins Ont.	Fax Number:
Name:	Telephone Number:
Address:	Fax Number:
Name:	Telephone Number:
Address:	Fax Number:

RECEIVED
9:30 AM
SEP 26 1997
GEOSCIENCE ASSESSMENT OFFICE

RECEIVED
SEP 25 1997
3:05
PORCUPINE MINING DIVISION

4. Certification by Recorded Holder or Agent

I, J. Kevin Filo (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: [signature]	Date: Sept. 24/97
Agent's Address: 535 Bartleman St. Timmins Ontario P4N 4X2	Telephone Number: 705-268-0971 / Fax Number: 705 268 5594

0241 (02/96)

Deemed December 25/97

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.

	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	752195	1	0	1200		
2	752196		0	1200		
3	752197	1	0	1200		
4	752198	1	0	1200		
5	752199	1	2862 ~~3721~~	1200		1662
6	752200	1	2862 ~~3721~~	1200		1662
7	752201	1	2862 ~~3721~~	1200		1662
8	752202	1	2862 ~~3721~~	1200		1662
9	752203	1	2862 ~~3721~~	1200		1662
10	752204	1	2862 ~~3721~~	1200		1662
11	752205	1	2862 ~~3721~~	1200		1662
12	~~9522~~					
13	871664	1	2862 ~~3721~~	2000	478	384
14	1218743	5	14322 ~~14892~~	10000	4322	~~0~~
15						
	Column Totals		37218		4800	12018

I, J. K. Filo, do hereby certify that the above work credits are eligible under
(Print Full Name)
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
J. K. Filo	Sept. 24/97

6. **Instructions 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)	

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use) W9760.00365

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, the 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 the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th 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/days worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
GEOPHYSICS MAG, VLF, & I.P. & LINECUTTING	27.1 km	$1373.357934	$37218
Associated Costs (e.g. supplies, mobilization and demobilization).			
Transportation Costs			
Food and Lodging Costs			
Total Value of Assessment Work			37218

RECEIVED
9:30 AM
SEP 26 1997
GEOSCIENCE ASSESSMENT OFFICE

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 × 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.

RECEIVED
305 SEP 25 1997
PORCUPINE MINING DIVISION

Certification verifying costs:

I, J. K. Filo (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 Agent (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature [signature] Date SEPT. 24/97

0212 (02/96)

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: (705) 670-5863

December 12, 1997

COPPER DOME MINES LTD
1022-470 GRANVILLE ST.
VANCOUVER, ONTARIO
V6C-1V2

Submission Number: 2.17854

Dear Sir or Madam:

		Status
Subject: Transaction Number(s):	W9760.00365	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.

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 jeromel2@epo.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: 11672

Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.17854

Date Correspondence Sent: December 12, 1997 **Assessor:** Lucille Jerome

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9760.00365	752199	BRISTOL	Approval	December 12, 1997

Section:
14 Geophysical MAG
14 Geophysical IP
14 Geophysical VLF

The attached Assessment Work Distribution form better reflects where the work was performed. Please refer to the distribution form to see how the work was approved.

Correspondence to:

Resident Geologist
South Porcupine, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):

Kevin Filo
TIMMINS, ONTARIO, CANADA

COPPER DOME MINES LTD
VANCOUVER, ONTARIO

ROLLAND JOSEPH POIRIER
TIMMINS, Ontario

Correspondence ID: 11672

Distribution of Assessment Work Credit

The following credit distribution reflects the value of assessment work performed on the mining land(s).

Date: December 12, 1997

Submission Number: 2.17854

Transaction Number: W9760.00365

Claim Number	Value Of Work Performed
752195	750.00
752196	750.00
752197	750.00
752198	750.00
752199	2,650.00
752200	2,650.00
752201	2,650.00
752202	2,650.00
752203	2,650.00
752204	2,650.00
752205	2,650.00
871664	2,650.00
1218743	13,018.00
Total: $	37,218.00

Correspondence ID: 11672

MAP SYMBOLOGY

Aerial Cableway, Boundary, International, Interprovincial, District, Township, Indian Reserve, Approximate, Lot, Concession, Approximate, Park Boundary, Bridge, Road, Railroad, Building, Chimney, Cliff, Pit, Pile, Contours, Interpolated, Approximate, Depression, Control Points, Horizontal, Vertical, Culvert, Falls, Double line river, Fence, Hedge, Wall, Feature Outline (Construction features, etc.), Flooded Land, Lock, Marsh or Swamp, Mast, Mine Head Frame, Outcrop

Pipeline (above ground), Railroad, Single Track, Double Track, Abandoned, Turntable, Road, Highway, County, Township, Access (road of doubtful maintenance or significant driveway), Trail, Bush Road (portage, alley), Rapids, Double line river with multiple rapids, Reservoir, River, Stream, Canal, Approximate (seasonal), Direction of flow, Rock, Significant, Shoal, Spot Elevation (lake elevation), Tower, Transmission Line, Poles, Pylons, Tunnel, Utility Poles, Wharf, Dock, Pier, Wooded Area

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

S.R.O. 164584

~~MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING, SALE OR LEASE, SECTION 36 THE MINING ACT R30 1980 ORDER NO. W 88/86 WR DATED 86-OCT-30~~

MINING AND SURFACE RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT R.S.O. 1990 ORDER NO. O-P-22/92 NER DATED 92-AUG-01 (CLAIM NO.'S P-451541 TO P-451548 INCL., P-453999, P-454000, P-479503 TO P-479506 INCL. AND P-480315 TO P-480317 INCL.)

~~MINING AND SURFACE RIGHTS WITHDRAWN FROM PROSPECTING, STAKING, SALE OR LEASE SECTION 36 OF THE MINING ACT, R30 1980 ORDER NO. W-50/86 DATED 86-MAY-21~~

~~THIS TWP. SUBJECT TO FOREST ACTIVITY IN 1992/93. FURTHER INFORMATION AVAILABLE ON FILE.~~

MINING AND SURFACE RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT, R.S.O. 1990 ORDER NO. O-P-25/92 NER DATED 92-SEP-10 AT 7:00 A.M. E.S.T. (CLAIM NO.S P-528308 TO P-528312 INCL. AND P-528309 TO P-528312 INCL.)

MINING AND SURFACE RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT, R.S.O. 1990 ORDER NO. O-P 29/92 NER DATED 92-NOV-06 AT 7:00 A.M. E.S.T. (CLAIM NO.S P-451531 TO P-451533 INCL.)

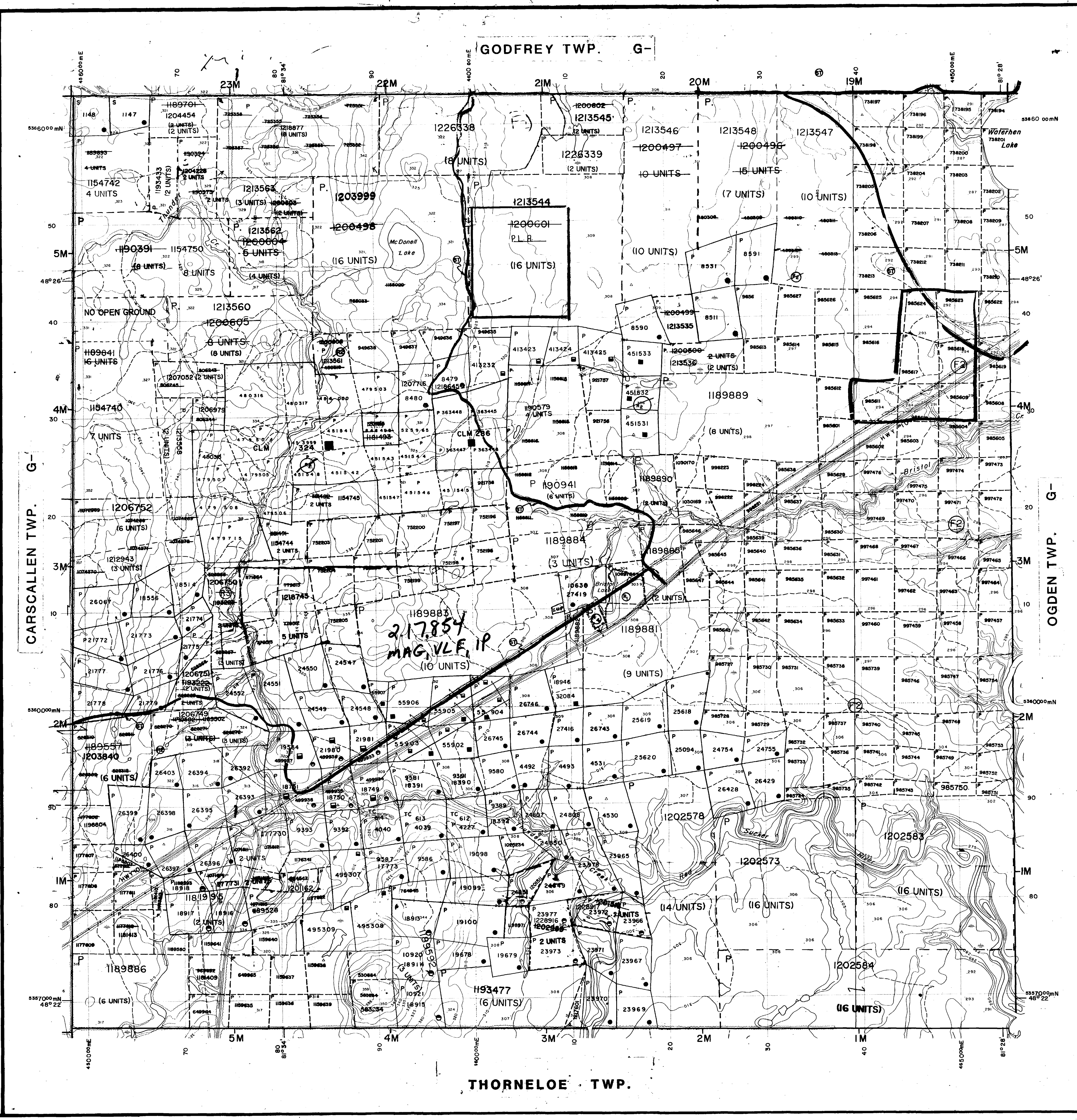
MINING AND SURFACE RIGHTS RE-OPENED TO PROSPECTING, STAKING OUT, SALE OR LEASE UNDER SECTION 35 OF THE MINING ACT, R.S.O. 1990 ORDER NO. O-P 30/92 NER DATED 92-NOV-02 AT 7:00 A.M. E.S.T. (CLAIM NO.S P-480306 TO P-480313 INCL. AND P-480316)

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.

KEY PLAN
For O.B.M. Map

20 17 4500 53600
20 17 4600 53600
20 17 4600 53500
20 17 4500 53500

not to scale



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
CANCELLED
SAND & GRAVEL

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
ZONE : 17

~~APPLICATION PENDING UNDER THE PUBLIC LANDS ACT NOTICE RECEIVED 92-DEC-21 SNOWMOBILE TRAILS~~

APPLICATION FOR CROWN LAND UNDER THE PUBLIC LANDS ACT NOTICE RECEIVED 93-MAY-4 C.G.S. EXCAVATION TOP SOIL HOLDING STORAGE ETC.

F2 THIS TWP SUBJECT TO FOREST ACTIVITY IN 1995/96. AREAS DESIGNATED EXACTLY AS SUBMITTED BY MNR TIMMINS.

DATE OF ISSUE
DEC 12 1997
PROVINCIAL RECORDING OFFICE - SUDBURY

TOWNSHIP
BRISTOL

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

Ministry of Natural Resources — Land Management Branch
Ontario

ORIGINAL COMPILATION JULY 1984
ACTIVATED JULY 13, 1992 BY D.C.
REVISED
CHECKED BY G.W.

Number
G-3998

200

LEGEND

Instrument: BRGM OMNI-PLUS
Transmitter Station: NAA CUTLER MAINE
Frequency: 24.0 KHz
Parameters Measured: INPHASE DIP ANGLE
Vertical Scale: 1cm=40%
Operator: J. DerWeduwen

EXSICS EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151

CLIENT:	PELANGIO LARDER/COPPER DOME.
PROPERTY:	POIRIER PROPERTY
TITLE:	BRISTOL TWP. VLF DIP ANGLE

Date: July 1997	Scale: 1:5000	NTS:
Drawn: P.Gauthier	Interp: J.C.Grant	Job No.:E-266

LEGEND

Instrument: Scintrex ENVI MAG
Parameters Measured: Earth's total magnetic field
Accuracy: +/- 0.1 nano-teslas
Diurnals: Corrected by base station recorder
Contour Interval: 0,10,20,30,40,50,......
Reference Field: 58,000 gammas
Datum Subtracted: 57,000 gammas

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Suite 13, Hollinger Bldg. Timmins Ont.
Telephone: 705-267-4151

CLIENT:	PELANGIO LARDER/COPPER DOME
PROPERTY:	POIRIER PROPERTY
TITLE:	BRISTOL TWP. MAGNETOMETER SURVEY

Date: July 1997	Scale: 1:5000	NTS:
Drawn: P.Gauthier	Interp: J.C.Grant	Job No.: E-266

LEGEND

Instrument: SCINTREX ENVI MAG
Transmitter Station: NAA CUTLER MAINE
Frequency: 24.0 KHz
Values filtered: INPHASE DIP ANGLE
Contour Interval: 0,5,10,15,20,25,......
Operator: J. DerWeduwen

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Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151

CLIENT:	PELANGIO LARDER/COPPER DOME
PROPERTY:	POIRIER PROPERTY
TITLE:	BRISTOL TWP.

FRASER FILTERED VLF

Date: July 1997	Scale: 1:5000	NTS:
Drawn: P.Gauthier	Interp: J.C.Grant	Job No.: E-266