REPORT ON
COMBINED HELICOPTER-BORNE
MAGNETIC, ELECTROMAGNETIC,
AND VLF--EM SURVEY
OF THE
MAPLE LAKE CLAIMS
ONTARIO

for
BRASS RING RESOURCES LIMITED
by
AERODAT LIMITED
FEBRUARY 1983

42C03SW0113 41N13NE0012 DAVID LAKES   010C

TABLE OF CONTENTS

LIST OF MAPS

(Scale: 1/15,840)

Data provided but not included in report:

1 - master map (2 colour) of coaxial and
    coplanar profiles with flight path

2 - anomaly list providing estimates of
    depth and conductivity thickness

3 - analogue records of data obtained in
    flight

1. INTRODUCTION

This report describes an airborne geophysical survey
carried out on behalf of Brass Ring Resources Limited
by Aerodat Limited. Equipment operated included a 3
frequency electromagnetic system, a VLF-EM system,
and a magnetometer.

The survey was flown in February 10 to February 22, 1983
from an operations base at Wawa Ontario.   A total of
317 line miles were flown, at a nominal line spacing of
660 feet. Of the total flown, this report describes
63 line miles.

2. SURVEY AREA/CLAIM NUMBERS AND LOCATIONS

The mining claim numbers and locations covered by this survey are indicated on the map in the following pocket.

3. AIRCRAFT EQUIPMENT

3.1 Aircraft

The helicopter used for the survey was an Aerospatial Astar 350D owned and operated by North Star Helicopters. Installation of the geophysical and ancillary equipment was carried out by Aerodat. The survey aircraft was flown at a nominal altitude at 60 meters.

3.2 Equipment

3.2.1 Electromagnetic System

The electromagnetic system was an Aerodat/ Geonics 3 frequency system. Two vertical coaxial coil pairs were operated at 955 and 4130 Hz and a horizontal coplanar coil pair at 4500 Hz. The transmitter-receiver separation was 7 meters. In-phase and quadrature signals were measured simultaneously for the 3 frequencies with a time-constant of 0.1 seconds. The electromagnetic bird was towed 30 meters below the helicopter.

3.2.2 VLF-EM System

The VLF-EM System was a Herz 2A. This instrument measures the total field and vertical

quadrature component of two selected frequencies. The sensor was towed in a bird 15 meters below the helicopter.

The sensor aligned with the flight direction is designated as "LINE", and the sensor perpendicular to the line direction as "ORTHO". The "LINE" station used was NAA, Cutler Maine, 17.8 KHz or NLK, Jim Creek Washington, 24.8 KHz. The "ORTHO" station was NSS, Annapolis Maryland, 21.4 KHz. The NSS transmitter was operating on a very limited schedule and was not available during a large part of the survey.

3.2.3 Magnetometer

The magnetometer was a Geometrics G-803 proton precession type. The sensitivity of the instrument was 1 gamma at a 1.0 second sample rate. The sensor was towed in a bird 15 meters below the helicopter.

3.2.4 Magnetic Base Station

An IFG proton precession type magnetometer was operated at the base of operations to record diurnal variations of the earths magnetic field. The clock of the base station was synchronized with that of the airborne system

to facilitate later correlation.

3.2.5   Radar Altimeter

A Hoffman HRA-100 radar altimeter was used to
record terrain clearance. The output from the
instrument is a linear function of altitude
for maximum accuracy.

3.2.6   Tracking Camera

A Geocam tracking camera was used to record
flight path on 35 mm film. The camera was
operated in strip mode and the fiducial numbers
for cross reference to the analog and digital
data were imprinted on the margin of the film.

3.2.7   Analog Recorder

A RMS dot-matrix recorder was used to display
the data during the survey. A sample record
with channel identification and scales is
presented on the following page.

CAMERA
FIDUCIAL #

TIME

MAG   20 gamma

ALTIMETER   20 feet

                   0 feet

VLF QUAD.
      (ORTHO)
VLF TOTAL   25%

VLF QUAD.
      (LINE)
VLF TOTAL

COPLANAR QUAD.
                   40 ppm.

MAG   50 gammas

COPLANAR IN-PHASE
                   40 ppm.

COAXIAL QUAD.
(HIGH FREQ.)   20 ppm.

COAXIAL IN-PHASE
(HIGH FREQ.)   20 ppm.

COAXIAL QUAD.
(LOW FREQ.)   20 ppm.

COAXIAL IN-PHASE
(LOW FREQ.)   20 ppm.

MANUAL FIDUCIAL
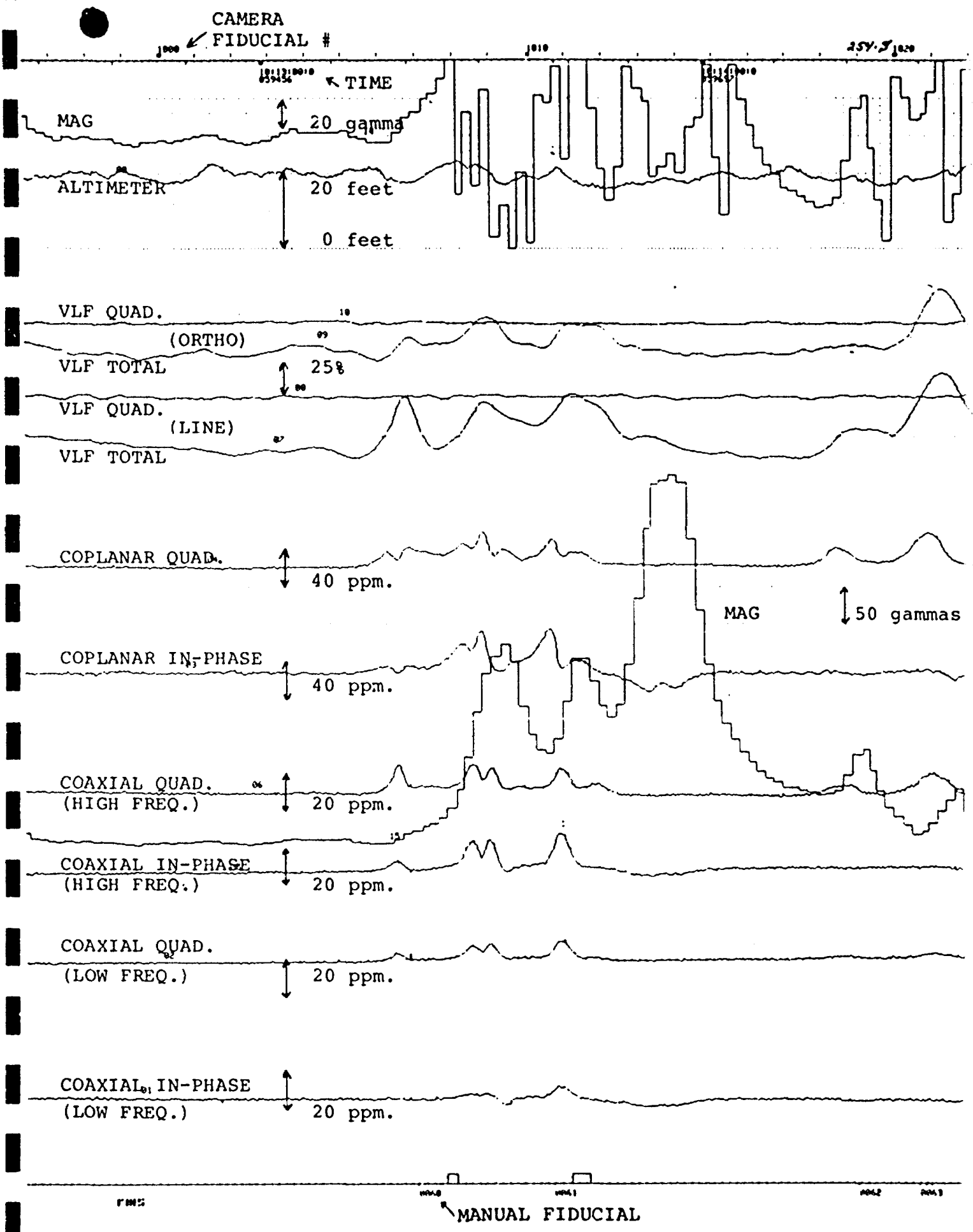
3.2.8   Digital Recorder

A Perle DAC/NAV data system recorded the survey
data on cassette magnetic tape.   Information
recorded was as follows:

Equipment	Interval
EM	0.1 second
VLF-EM	0.5 second
magnetometer	0.5 second
altimeter	1.0 second
fiducial (time)	1.0 second
fiducial (manual)	0.2 second

4.   DATA PRESENTATION

4.1   Base Map and Flight Path Recovery

The base map photomosaic at a scale of 1/15,840 was constructed from available aerial photography. The flight path was plotted manually on this base and digitized for use in the computer compilation of the maps. The flight path is presented with fiducials for cross reference to both the analog and digital data.

4.2 Electromagnetic Profile Maps

The electromagnetic data was recorded digitally at a high sample rate of 10/second with a small time constant of 0.1 second. A two stage digital filtering process was carried out to reject major sferic events, and reduce system noise.

Local atmospheric activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with a geological phenomenon. To avoid this possibility, a computer algorithm searches out and rejects the major "sferic" events.

The signal to noise was further enhanced by the application of a low pass filter. The filter was applied digitally. It has zero phase shift which prevents any lag or peak displacement from occurring and it suppresses only variation with a wavelength less than about 0.25 seconds. This low effective time constant permits maximum profile shape resolution.

Following the filtering processes, a base level correction was made. The correction applied is a linear function of time that ensures that the corrected amplitude of the various inphase and quadrature components

is zero when no conductive or permeable source is·
present. This filtered and levelled data was then
presented in profile map form.

The in-phase and quadrature responses of the coaxial
955 Hz configuration are plotted with the flight
path and presented on the photomosaic base.

The in-phase and quadrature responses of the coaxial
4500 Hz and the coplanar 4130 Hz configuration are
plotted with flight path and are available as a two
colour overlay.

4 - 4

4.3 Magnetic Contour Maps

The aeromagnetic data was corrected for diurnal
variations by subtraction of the digitally recorded
base station magnetic profile. No correction for
regional variation is applied.

The corrected profile data was interpolated onto a
regular grid at a 2.5 mm interval using a cubic
spline technique. The grid provided the basis for
threading the presented contours at a 10 gamma
interval.

4.4 VLF-EM Contour and Profile Maps

The VLF-EM "LINE" signal, was compiled in map form. The mean response level of the total field signal was removed and the data was gridded and contoured at an interval of 2%. When the "ORTHO" signal was available it was compiled in a similar fashion.

4.5 Electromagnetic Conductor Symbolization

The electromagnetic profile maps were used to
identify those anomalies with characteristics
typical of bedrock conductors. The in-phase
and quadrature response amplitudes at 4130 Hz
were digitally applied to a phasor diagram for
the vertical half-plane model and estimates of
conductance (conductivity thickness) were made.
The conductance levels were divided into categories
as indicated in the map legend; the higher the number,
the higher the estimated conductivity thickness
product.

As discussed in Appendix I the conductance should be
used as a relative rather than absolute guide to
conductor quality. A conductance value of less than
2 mhos is typical for conductive overburden material
and electrolytic conductors in faults and shears.
Values greater than 4 mhos generally indicate some
electronic conduction by certain metallic sulphides
and/or graphite. Gold, although highly conductive,
is not expected to occur in sufficient concentration
to directly produce an electromagnetic anomaly;
however, accessory mineralization such as pyrite or

graphite can produce a measurable response.

With the aid of the profile maps, responses of similar
characteristics may be followed from line to line and
conductor axes identified.

The distinction between conductive bedrock and over-
burden anomalies is not always clear and some of
the symbolized anomalie: may not be of bedrock origin.
It is also possible that a response may have been
mistakenly attributed to overburden and therefore not
included in the symbolization process. For this reason,
as geological and other geophysical information becomes
available, reassessment of the significance of the
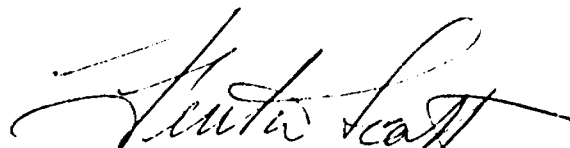various conductors is recommended.

4.6   INTERPRETATION MAPS

The conductive trends are shown and discriminated for descriptive purposes.

These conductors are described below:

1   Moderate, one quarter mile, slightly magnetic conductor adjacent to cross-cutting magnetic low.

2   Weak conductor, three-quarter miles long, along north flank of magnetic high.

3   One-quarter mile conductor along crest of formational magnetic feature.

4   Weak conductor along north flank of magnetic feature.

5   Cross-cutting trend demonstrated by VLF response. Left-lateral faulting shown by displacement of iron formation.

Respectfully submitted,

JUNE 8, 1983.   Fenton Scott, P. Eng.

APPENDIX I

GENERAL INTERPRETIVE CONSIDERATIONS

Electromagnetic

The Aerodat 3 frequency system utilizes 2 different
transmitter-receiver coil geometries. The traditional
coaxial coil configuration is operated at 2 widely
separated frequencies and the horizontal coplanar coil
pair is operated at a frequency approximately aligned
with one of the coaxial frequencies.

The electromagnetic response measured by the helicopter
system is a function of the "electrical" and "geometrical"
properties of the conductor. The "electrical" property
of a conductor is determined largely by its conductivity
and its size and shape; the "geometrical" property of the
response is largely a function of the conductors shape and
orientation with respect to the measuring transmitter and
receiver.

Electrical Considerations

For a given conductive body the measure of its conductivity
or conductance is closely related to the measured phase
shift between the received and transmitted electromagnetic
field. A small phase shift indicates a relatively high
conductance, a large phase shift lower conductance. A
small phase shift results in a large in-phase to quadrature

ratio and a large phase shift a low ratio. This relation-
ship is shown quantitatively for a vertical half-plane
model on the accompanying phasor diagram. Other physical
models will show the same trend but different quantitative
relationships.

The phasor diagram for the vertical half-plane model, as
presented, is for the coaxial coil configuration with the
amplitudes in ppm as measured at the response peak over
the conductor. To assist the interpretation of the survey
results the computer is used to identify the apparent
conductance and depth at selected anomalies. The results
of this calculation are presented in table form in Appendix I
and the conductance and in-phase amplitude are presented
in symbolized form on the map presentation.

The conductance and depth values as presented are correct
only as far as the model approximates the real geological
situation. The actual geological source may be of limited
length, have significant dip, its conductivity and thickness
may vary with depth and/or strike and adjacent bodies and
overburden may have modified the response. In general the
conductance estimate is less affected by these limitations
than the depth estimate but both should be considered a
relative rather than absolute guide to the anomalies
properties.

Conductance in mhos is the reciprocal of resistance in ohms and in the case of narrow slab like bodies is the product of electrical conductivity and thickness.

Most overburden will have an indicated conductance of less than 2 mhos; however, more conductive clays may have an apparent conductance of say 2 to 4 mhos. Also in the low conductance range will be electrolytic conductors in faults and shears.

The higher ranges of conductance, greater than 4 mhos, indicate that a significant fraction of the electrical conduction is electronic rather than electrolytic in nature. Materials that conduct electronically are limited to certain metallic sulphides and to graphite. High conductance anomalies, roughly 10 mhos or greater are generally limited to sulphide or graphite bearing rocks.

Sulphide minerals with the exception of sphalerite, cinnabar and stibnite are good conductors; however, they may occur in a disseminated manner that inhibits electrical conduction through the rock mass. In this case the apparent conductance can seriously under rate the quality of the conductor in geological terms. In a similar sense the relatively non-conducting sulphide minerals noted above may be present in significant concentration in association with minor conductive

sulphides, and the electromagnetic response only relate
to the minor associate mineralization. Indicated conductance
is also of little direct significance for the identification
of gold mineralization. Although gold is highly conductive
it would not be expected to exist in sufficient quantity
to create a recognizable anomaly but minor accessory sulphide
mineralization could provide a useful indirect indication.

In summary the estimated conductance of a conductor can
provide a relatively positive identification of significant
sulphide or graphite mineralization; however, a moderate
to low conductance value does not rule out the possibility
of significant economic mineralization.

Geometrical Considerations

Geometrical information about the geologic conductor can
often be interpreted from the profile shape of the anomaly.
The change in shape is primarily related to the change in
inductive coupling among the transmitter, the target, and
the receiver.

In the case of a thin, steeply dipping, sheet-like conductor,
the coaxial coil pair will yield a near symmetric peak over
the conductor. On the other hand the coplanar coil pair will
pass through a null couple relationship and yield a minimum
over the conductor, flanked by positive side lobes. As the
dip of the conductor decreases from vertical, the coaxial

anomaly shape changes only slightly, but in the case of the coplanar coil pair the side lobe on the down dip side strengthens relative to that on the up dip side.

As the thickness of the conductor increases, induced current flow across the thickness of the conductor becomes relatively significant and complete null coupling with the coplanar coils is no longer possible. As a result, the apparent minimum of the coplanar response over the conductor diminishes with increasing thickness, and in the limiting case of a fully 3 dimensional body or a horizontal layer or half-space, the minimum disappears completely.

A horizontal conducting layer such as overburden will produce a response in the coaxial and coplanar coils that is a function of altitude (and conductivity if not uniform). The profile shape will be similar in both coil configurations with an amplitude ratio (coplanar/coaxial) of about 4/1.[*]

In the case of a spherical conductor, the induced currents are confined to the volume of the sphere, but not relatively restricted to any arbitrary plane as in the case of a sheet-like form. The response of the coplanar coil pair directly over the sphere may be up to 8[*] times greater than that of the coaxial coil pair.

In summary a steeply dipping, sheet-like conductor will display a decrease in the coplanar response coincident with the peak of the coaxial response. The relative strength of this coplanar null is related inversely to the thickness of the conductor; a pronounced null indicates a relatively thin conductor. The dip of such a conductor can be infered from the relative amplitudes of the side-lobes.

Massive conductors that could be approximated by a conducting sphere will display a simple single peak profile form on both coaxial and coplanar coils, with a ratio between the coplanar to coaxial response amplitudes as high as 8.*

Overburden anomalies often produce broad poorly defined anomaly profiles. In most cases the response of the coplanar coils closely follow that of the coaxial coils with a relative amplitude ratio of 4.*

Occasionally if the edge of an overburden zone is sharply defined with some significant depth extent, an edge effect will occur in the coaxial coils. In the case of a horizontal conductive ring or ribbon, the coaxial response will consist of two peaks, one over each edge; whereas the coplanar coil will yield a single peak.

* It should be noted at this point that Aerodat's definition
  of the measured ppm unit is related to the primary field
  sensed in the receiving coil without normalization to the
  maximum coupled (coaxial configuration). If such normal-
  ization were applied to the Aerodat units, the amplitude
  of the coplanar coil pair would be halved.

Magnetics

The Total Field Magnetic Map shows contours of the total magnetic field, uncorrected for regional variation. Whether an EM anomaly with a magnetic correlation is more likely to be caused by a sulphide deposit than one without depends on the type of mineralization. An apparent coincidence between an EM and a magnetic anomaly may be caused by a conductor which is also magnetic, or by a conductor which lies in close proximity to a magnetic body. The majority of conductors which are also magnetic are sulphides containing pyrrhotite and/or magnetite. Conductive and magnetic bodies in close association can be, and often are, graphite and magnetite. It is often very difficult to distinguish between these cases. If the conductor is also magnetic, it will usually produce an EM anomaly whose general pattern resembles that of the magnetics. Depending on the magnetic permeability of the conducting body, the amplitude of the inphase EM anomaly will be weakened, and if the conductivity is also weak, the inphase EM anomaly may even be reversed in sign.

VLF Electromagnetics

The VLF-EM method employs the radiation from powerful
military radio transmitters as the primary signals.
The magnetic field associated with the primary field
is elliptically polarized in the vicinity of electrical
conductors.   The Herz Totem uses three coils in the X.
Y. Z. configuration to measure the total field and
vertical quadrature component of the polarization
ellipse.

The relatively high frequency of VLF 15-25 KHz provides
high response factors for bodies of low conductance.
Relatively "disconnected" sulphide ores have been found
to produce measurable VLF signals.   For the same reason,
poor conductors such as sheared contacts, breccia zones,
narrow faults, alteration zones and porous flow tops normally
produce VLF anomalies.   The method can therefore be used
effectively for geological mapping.   The only relative dis-
advantage of the method lies in its sensitivity to conductive
overburden.   In conductive ground the depth of exploration
is severely limited.

The effect of strike direction is important in the sense
of the relation of the conductor axis relative to the
energizing electromagnetic field.   A conductor aligned
along a radius drawn from a transmitting station will be

in a maximum coupled orientation and thereby produce a
stronger response than a similar conductor at a different
strike angle. Theoretically it would be possible for a
conductor, oriented tangentially to the transmitter to
produce no signal. The most obvious effect of the strike
angle consideration is that conductors favourably oriented
with respect to the transmitter location and also near
perpendicular to the flight direction are most clearly
rendered and usually dominate the map presentation.

The total field response is an indicator of the existence
and position of a conductivity anomaly. The response will
be a maximum over the conductor, without any special filtering,
and strongly favour the upper edge of the conductor even in
the case of a relatively shallow dip.

The vertical quadrature component over steeply dipping sheet
like conductor will be a cross-over type response with the
cross-over closely associated with the upper edge of the
conductor.

The response is a cross-over type due to the fact that it
is the vertical rather than total field quadrature component
that is measured. The response shape is due largely to
geometrical rather than conductivity considerations and
the distance between the maximum and minimum on either side
of the cross-over is related to target depth. For a given
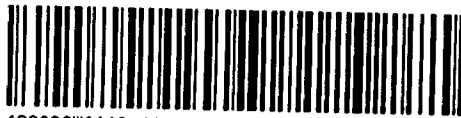target geometry, the larger this distance the greater the

depth.

The amplitude of the quadrature response, as opposed to shape is function of target conductance and depth as well as the conductivity of the overburden and host rock. As the primary field travels down to the conductor through conductive material it is both attenuated and phase shifted in a negative sense. The secondary field produced by this altered field at the target also has an associated phase shift. This phase shift is positive and is larger for relatively poor conductors. This secondary field is attenuated and phase shifted in a negative sense during return travel to the surface. The net effect of these 3 phase shifts determine the phase of the secondary field sensed at the receiver.

A relatively poor conductor in resistive ground will yield a net positive phase shift. A relatively good conductor in more conductive ground will yield a net negative phase shift. A combination is possible whereby the net phase shift is zero and the response is purely in-phase with no quadrature component.

A net positive phase shift combined with the geometrical cross-over shape will lead to a positive quadrature response on the side of approach and a negative on the side of departure. A net negative phase shift would produce the reverse. A further sign reversal occurs with a 180 degree

change in instrument orientation as occurs on reciprocal
line headings. During digit..1 processing of the quad-
rature data for map presentation this is corrected for
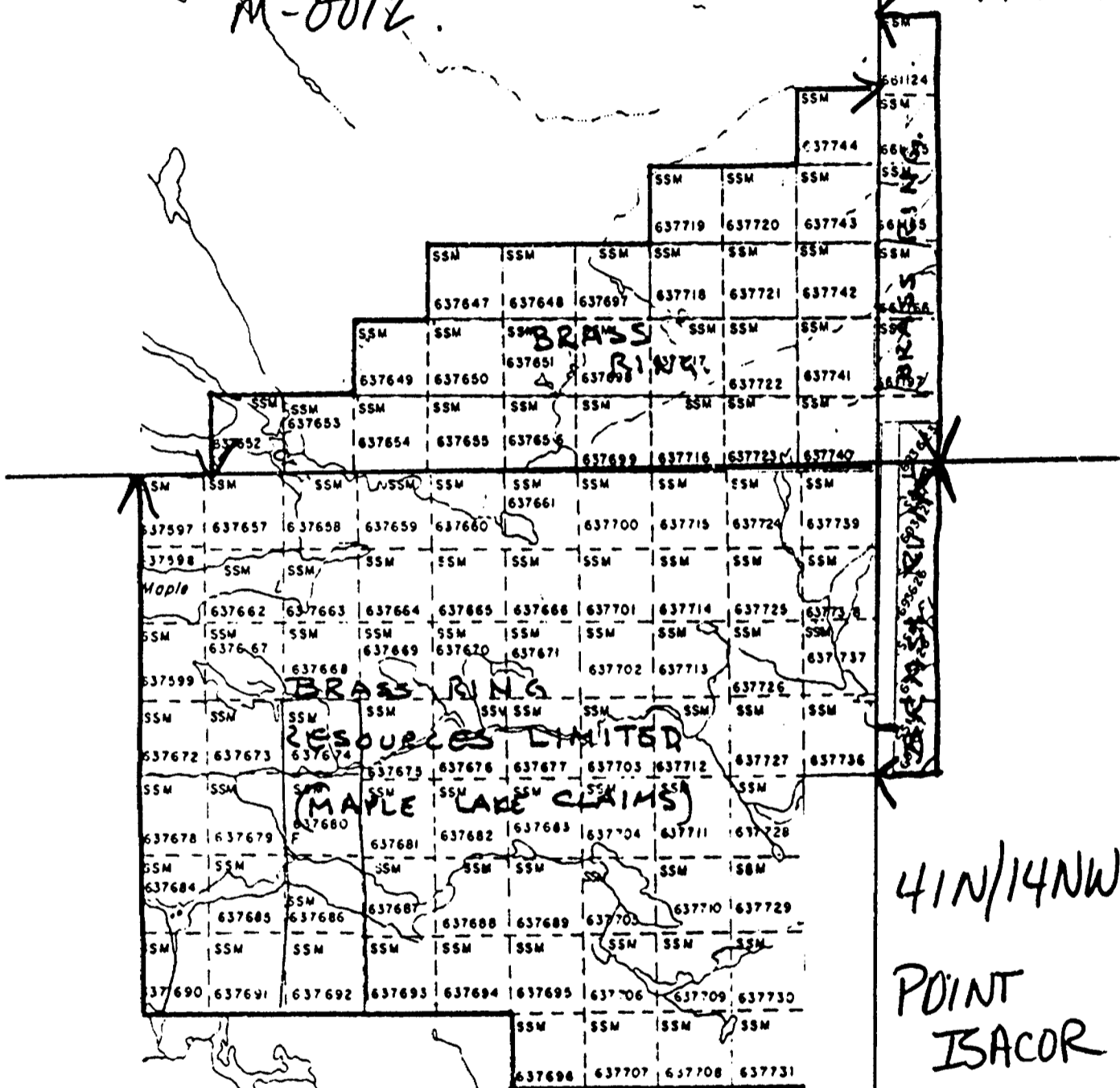by normalizing the sign to one of the flight line headings.

900

42C/04SE
DAVID LK
M-0012.

MISHIBISHU
LK.
42C/03SW
M-0007

41N/14NW
POINT
ISACOR
M-0006

41N/13NE
M-20. PILOT HARBOUR

2.5659

1" = 40 chains

DISTRICT OF
THUNDER BAY

SAULT STE. MARIE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

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

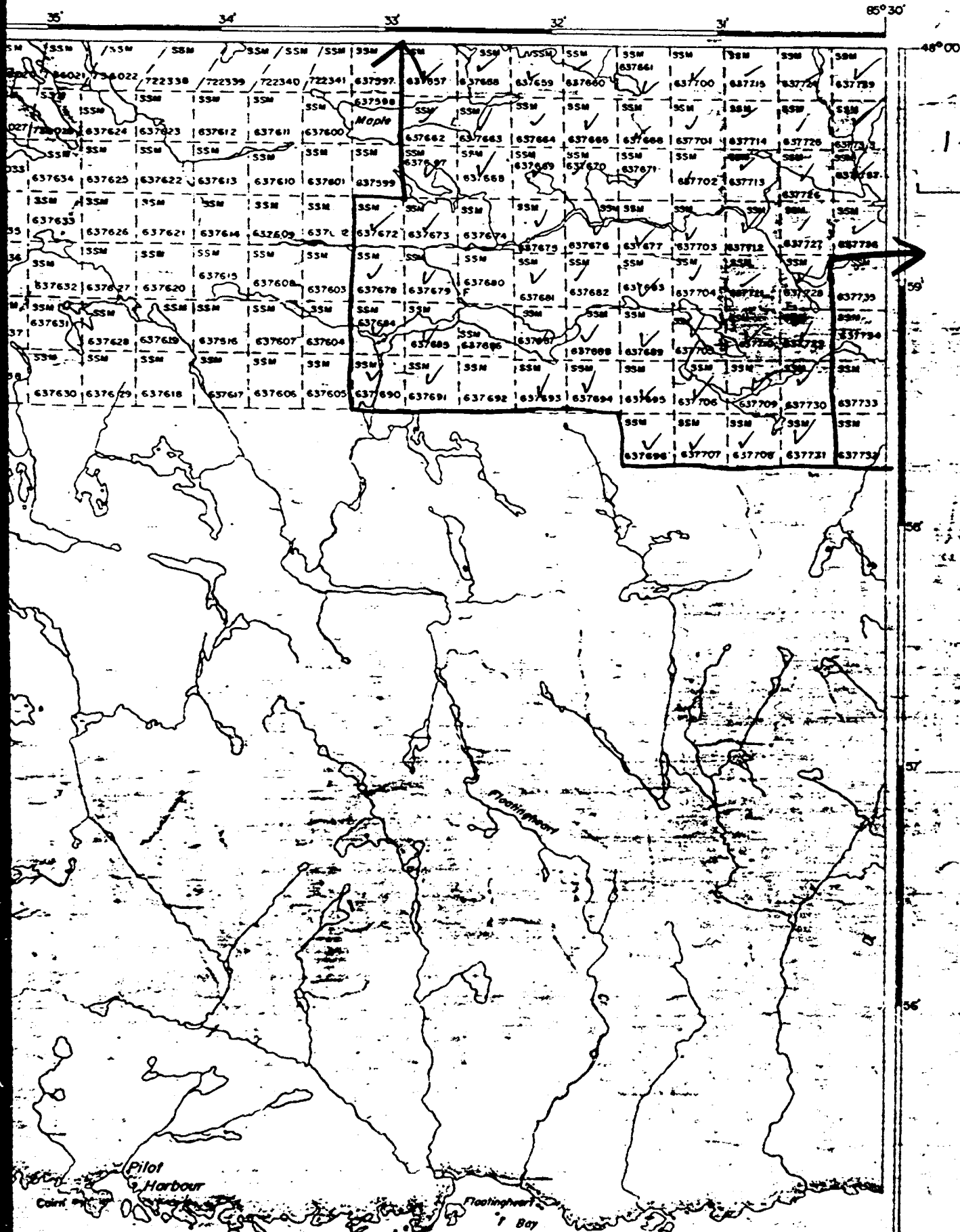## NOTES

400 ft.

Land under Lake Superior withdrawn
from staking by Order in Council
dated April 30, 1912.

DATE OF ISSUE
JAN 3 1984
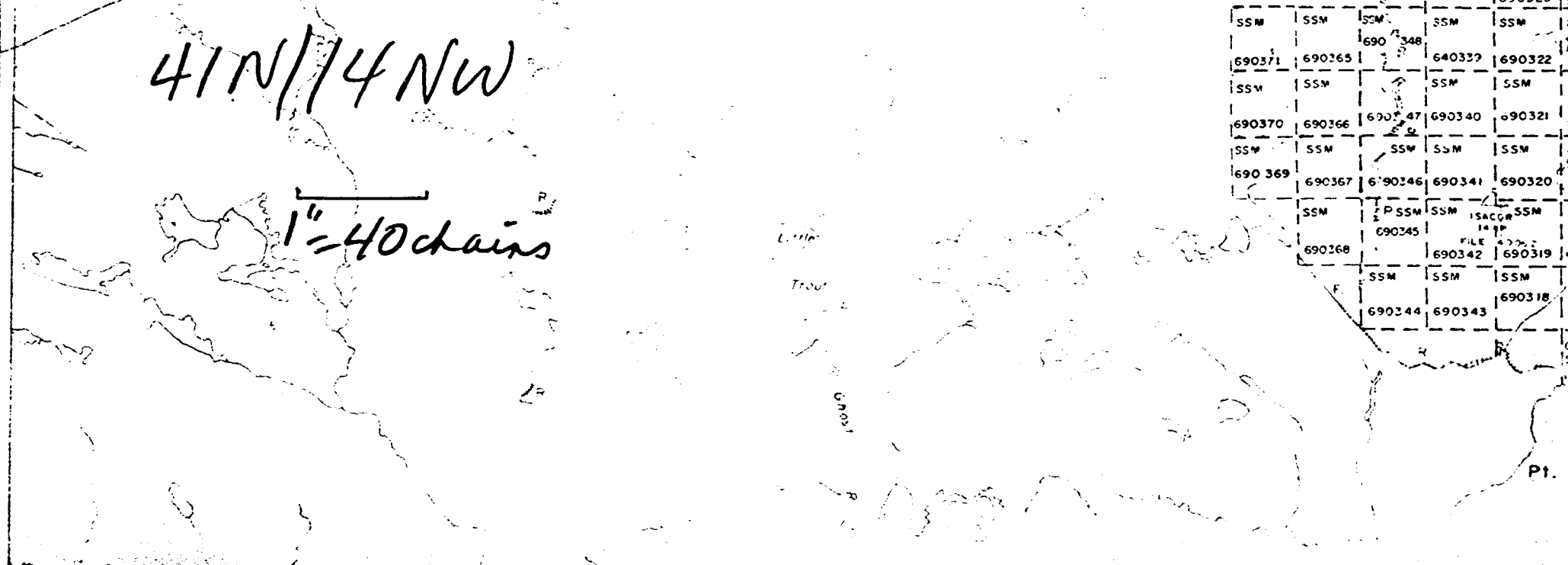Ministry of Natural Resources
TORONTO

85°30'
48°00'

POINT ISACOR
M-0006
41N/14NW

1"=40 chains
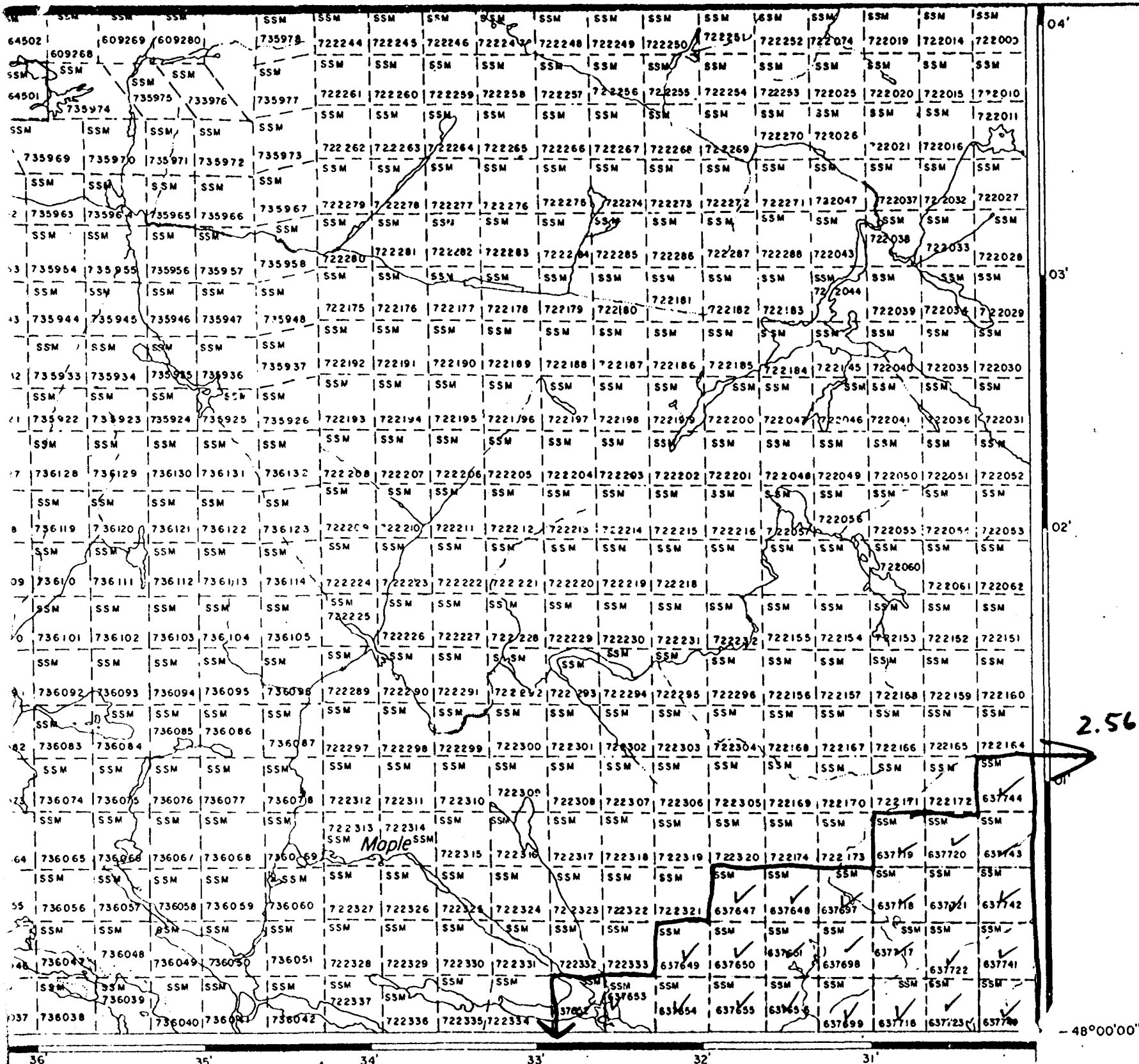
MISHIBISHU LAKE

M-0007

Augusta

Floatingheart

Mishibishu L

Floatingheart Cr

Missing

85°30'   29'   28'   27'   26'   25'   24'   23'   22'

48°00'

2.5659

1"= 40 chains   (42C/03SW)

DAVID LAKES

1" = 40 chains

2.5659

Maple

04'
03'
02'

48°00'00"

85°30'00"

36'   35'   34'   33'   32'   31'

File: 2.5659

Ministry of Natural Resources Ontario ●	**Report of Work** (Geophysical, Geological, Geochemical and Expenditures) **2.5659** The Mining Act	Instructions: — Please type or print. — If number of mining claims traversed exceeds space on this form, attach a list. Note: — Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns. — Do not use shaded areas below.

Type of Survey(s)
Airborne Electromagnetic, Magnetic, VLF-EM

Township or Area Michibishu Lake
Pt. Isacor, Pilot Harbor

Claim Holder(s)
David Krutz

Prospector's Licence No.
K19796

Address
639 2nd Avenue   Val d'Or   Que.   J9P 1W5

Survey Company
Aerodat Limited

Date of Survey (from & to)
10 Day | 2 Mo. | 83 Yr. | 15 Day | 2 Mo. | 83 Yr.

Total Miles of line Cut
3.15

Name and Address of Author (of Geo-Technical report)
Fenton Scott   17 Malabar Place, Don MIlls, Ontario   m3b 1A4

Credits Requested per Each Claim in Columns at right

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

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

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	25.2
	Magnetometer	25.2
	Radiometric	25.2

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
SSM	661124 ·				
	25 ·				
	661165 ·				
	66 ·				
	661197 ·				

SAULT STE. MARIE MINING DIV.
RECEIVED
NOV 1 1983
A.M. 7|8|9|10|11|12| P.M.

Expenditures (excludes power stripping)

Type of Work Performed
MINING LANDS SECTION

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures		Total Days Credits
$	+ 15 =	

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

Total number of mining claims covered by this report of work. 5

Date
October 28/83

Recorded Holder or Agent (Signature)

Certification Verifying Report of Work

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

Name and Postal Address of Person Certifying
Fenton Scott   17 Malabar Place, Don Mills, Ontario M3B 1A4

Date Certified	Certified by (Signature)
Oct 28/83	

1362 (81/9)

Filed on SSM 637647

Ministry of Natural Resources
Ontario

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

2.5659

The Mining Act

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

Type of Survey(s)	Township or Area David Lakes
Airborne Electromagnetic, Magnetic, VLF-EM	Pt. Isacot, Pilot Harbor

Claim Holder(s)	Prospector's Licence No.
David Recoskie	K19810

Address
106 Johnson Street   Vald'Or Quebec   J9P 3H7

Survey Company	Date of Survey (from & to)	Total Miles of line Cut
Aerodat Limited	10 2 83 15 2 83 Day Mo. Yr. Day Mo. Yr.	28

Name and Address of Author (of Geo-Technical report)
Fenton Scott   17 Malabar Place   Don Mills   Ontario

Credits Requested per Each Claim in Columns at right

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

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

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	25.2
	Magnetometer	25.2
	Radiometric VLF	25.2

RECEIVED SAULT STE. MARIE Mining Div.
NOV 1 1983
7 8 9 10 11 12 1 2 3 4 5 6
A.M.   P.M.

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Expend. Days Cr.	Mining Claim Prefix	Number	Expend. Days Cr.
SSM	637697 ✓		SSM	637720 ✓	
	98 ✓			21 ✓	
	99 ✓			22 ✓	
	700 ✓			23 ✓	
	01 ✓			24 ✓	
	02 ✓			25 ✓	
	03 ✓			26 ✓	
	04 ✓			27 ✓	
	05 ✓			28 ✓	
	06 ✓			29 ✓	
	07 ✓			30 ✓	
	08 ✓			31 ✓	
	09 ✓			736 ✓	
	10 ✓			37 ✓	
	11 ✓			38 ✓	
	12 ✓			39 ✓	
	13 ✓			40 ✓	
	14 ✓			41 ✓	
	15 ✓			42 ✓	
	16 ✓			43 ✓	
	17 ✓			44 ✓	
	18 ✓				
	19 ✓				

Expenditures (excludes power stripping)

Type of Work Performed
RECEIV...
Performed on Claim(s)
NOV 3 1983
MINING LAND: SEC...

Calculation of Expenditure Days Credits

Total Expenditures		Total Days Credits
$	+ 15 =	

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

Total number of mining claims covered by this report of work. **44**

Date	Recorded Holder or Agent (Signature)
October 28/83	[signature]

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
3326.4	November 1, 1983	[signature] St. Julee
	Date Approved as Recorded Dec 15/83	[signature]

Certification Verifying Report of Work

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

Name and Postal Address of Person Certifying
Fenton Scott   17 Malabar Place   Don Mills   Ontario

Date Certified	Certified by (Signature)
Oct 28/83	[signature] Fenton Scott

1362 (81/9)

Filed on SSM 637647

File: 2.5659

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures) **2.5659**

The Mining Act

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

Type of Survey(s)
Airborne Electromagnetic, Magnetic, VLF

Township or Area David Lakes
Pt. Isacor, Pilot Harbour

Claim Holder(s)
Real Mangeau

Prospector's Licence No.
K19808

Address
1070 - 7ieme Rue Apt. #21 Val d'Or Quebec J9P 3R5

Survey Company
Aerodat Limited

Date of Survey (from & to)
30 2 83 15 2 83
Mo. Yr. Day Mo. Yr.

Total Miles of line Cut
89

Name and Address of Author (o. Geo-Technical report)
Fenton Scott 17 Malabar Place, Don Mills, Ontario

Credits Requested per Each Claim in Columns at right

Special Provisions

For first survey:
Enter 40 days. (This includes line cutting)

For each additional survey: using the same grid:
Enter 20 days (for each)

Geophysical	Days per Claim
· Electromagnetic	
· Magnetometer	
· Radiometric	
· Other	
Geological	
Geochemical	

Man Days

Complete reverse side and enter total(s) here

Geophysical	Days per Claim
· Electromagnetic	
· Magnetometer	
· Radiometric	
· Other	
Geological	
Geochemical	

Airborne Credits

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

	Days per Claim
Electromagnetic	25.2
Magnetometer	25.2
Radiometric VLF	25.2

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures
Total Days Credits
$ [ ] + 15 = [ ]

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

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Expend. Days Cr.	Mining Claim Prefix	Number	Expend. Days Cr.
SSM	637647 ✓		SSM	637670 ✓	
	48 ✓			71 ✓	
	49 ✓			72 ✓	
	50 ✓			73 ✓	
	51 ✓			675 ✓	
	52 ✓			76 ✓	
	53 ✓			77 ✓	
	54 ✓			78 ✓	
	55 ✓			79 ✓	
	56 ✓			681 ✓	
	57 ✓			82 ✓	
	58 ✓			83 ✓	
	59 ✓			84 ✓	
	60 ✓			85 ✓	
	61 ✓			687 ✓	
	62 ✓			88 ✓	
	63 ✓			89 ✓	
	64 ✓			90 ✓	
	65 ✓			91 ✓	
	66 ✓			693 ✓	
	67 ✓			94 ✓	
	68 ✓			95 ✓	
	69 ✓			96 ✓	

Total number of mining claims covered by this report of work. 46

For Office Use Only

Total Days Cr. Recorded 3,477.6

Date Recorded November 1, 1983

Mining Recorder [signature]

Date Approved as Recorded 83.12.08

Branch Director [signature]

Date 28 October/83

Recorded Holder or Agent (Signature) [signature]

Certification Verifying Report of Work

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

Name and Postal Address of Person Certifying
Fenton Scott Rm 17 Malabar Place Don Mills, Ontario M3B 1A4

Date Certified Oct 28/83

Certified by (Signature) [signature] Fenton Scott

1362 (81/9)

Filed on SSM 637647

File: 2.5659

Ministry of Natural Resources Ontario

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

The Mining Act

Type of Survey(s)	Township or Area
Airborne Electromagnetic, Magnetic, VLF-EM	Pt. Isacor, Pilot Harbor

Claim Holder(s)	Prospector's Licence No.
Raymond Champagne	M21154

Address
c/o 169 Perreault Avenue   Vald"or   Que.   J9P 2H1

Survey Company	Date of Survey (from & to)	Total Miles of line Cut
Aerodat Limited	10 2 83 / 10 2 83 (Day | Mo. | Yr.)	2.4

Name and Address of Author (of Geo-Technical report)
Fenton Scott   17 Malabar Place, Don Mills, Ontario.

Credits Requested per Each Claim in Columns at right

Special Provisions

For first survey:
Enter 40 days. (This includes line cutting)

For each additional survey: using the same grid:
Enter 20 days (for each)

Geophysical	Days per Claim
- Electromagnetic	
- Magnetometer	
- Radiometric	
- Other	
Geological	
Geochemical	

Man Days

Complete reverse side and enter total(s) here

Geophysical	Days per Claim
- Electromagnetic	
- Magnetometer	
- Radiometric	
- Other	
Geological	
Geochemical	

Airborne Credits

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

	Days per Claim
Electromagnetic	25.2
Magnetometer	25.2
Radiometric	25.2

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
SSM	693624 ✓				
	25 ✓				
	26 ✓				
	27 ✓				

SAULT STE. MARIE MINING DIV.
RECEIVED
NOV 1 1983
A.M. 7|8|9|10|...|12| P.M.

NOV 3 1983
MINING LANDS SECTION

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures
$ _____ + 15 = _____   Total Days Credits

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

Total number of mining claims covered by this report of work.	4

Date	Recorded Holder or Agent (Signature)
Oct. 28/83	[signature]

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
302.4	November 1, 1983	[signature] Wm. St. Jules
	Date Approved as Recorded Dec 15/83	Branch Director [signature]

Certification Verifying Report of Work

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

Name and Postal Address of Person Certifying
Fenton Scott   17 Malabar Place, Don Mills, Ontario.

Date Certified	Certified by (Signature)
OCT/28/83	[signature] Fenton Scott

1362 (81/9)

Filed on SSM 637647

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

The Mining Act

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

Type of Survey(s)	Township or Area Michibishu Lake
Airborne Electromagnetic, magnetic, VLF-EM	Pt. Isacor, Pilot Harbor

Claim Holder(s)	Prospector's Licence No.
Rene Allard	M21155

Address
Vassan, Co. Abitibi, Quebec

Survey Company	Date of Survey (from & to)	Total Miles of line Cut
Aerodat Limited	Day 10 Mo. 2, 83	Day 20 Mo. 2, 83	0.63

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

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

Special Provisions

For first survey:
Enter 40 days. (This includes line cutting)

For each additional survey: using the same grid:
Enter 20 days (for each)

Geophysical	Days per Claim
· Electromagnetic	
· Magnetometer	
· Radiometric	
· Other	
Geological	
Geochemical	

Man Days

Complete reverse side and enter total(s) here

Geophysical	Days per Claim
· Electromagnetic	
· Magnetometer	
· Radiometric	
· Other	
Geological	
Geochemical	

Airborne Credits

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

	Days per Claim
Electromagnetic	25.2
Magnetometer	25.2
Radiometric VLF	25.2

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures		Total Days Credits
$	+ 15 =	

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

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
SSM	693623				

Total number of mining claims covered by this report of work.	1

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
75.6	November 1, 1983	M.J. St Jules
	Date Approved as Recorded Dec 15/83	Branch Director

Date	Recorded Holder or Agent (Signature)
Oct 28 /83	

Certification Verifying Report of Work

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

Name and Postal Address of Person Certifying
Fenton Scott 17 Malabar Place, Don Mills, Ontario

Date Certified	Certified by (Signature)
Oct. 28/83	

362 (81/9)

filed on SSM 637647

	Ministry of Natural Resources Ontario	Geotechnical Report Approval	File 2.5659

Nov. 9/83

Mining Lands Comments

☑ To: Geophysics   *Roger Barlow.*

Comments

☑ Approved   ☐ Wish to see again with corrections | Date Dec 5/83 | Signature R Bala |

☐ To: Geology · Expenditures

Comments

☐ Approved   ☐ Wish to see again with corrections | Date | Signature |

☐ To: Geochemistry

Comments

L. D.

☐ Approved   ☐ Wish to see again with corrections | Date | Signature |

☐ To: Mining Lands Section, Room 6462, Whitney Block.   (Tel: 5-1380)

1593 (81/10)

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL
TECHNICAL DATA STATEMENT

Ontario

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

Type of Survey(s) _AIRBORNE E.M., MAGNETIC, V.L.F._

Township or Area _PILOT HARBOUR, PT. ISACOR, 2C._

Claim Holder(s) _ROCCO A SCHIRALLI IN TRUST._
_____

Survey Company _AERODAT LIMITED_

Author of Report _FENTON SCOTT_

Address of Author _17 MALABAR PLACE, DON MILLS_

Covering Dates of Survey_____
(linecutting to office)

Total Miles of Line Cut _____

MINING CLAIMS TRAVERSED
List numerically

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

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(right margin, vertical) If space insufficient, attach list

SPECIAL PROVISIONS
CREDITS REQUESTED

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

ENTER 20 days for each additional survey using same grid.

DAYS per claim

Geophysical

–Electromagnetic_____

–Magnetometer_____

–Radiometric_____

–Other_____

Geological_____

Geochemical_____

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

Magnetometer _25_ Electromagnetic _25_ ~~Radiometric~~ V.L.F _25_
(enter days per claim)

DATE: _June 24/83_ SIGNATURE: _Fenton Scott_
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS_____

(left margin, vertical) OFFICE USE ONLY

SELF POTENTIAL.

Instrument _____ Range _____

Survey Method _____

_____

Corrections made _____

_____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

_____

Additional information (for understanding results) _____

_____

_____

AIRBORNE SURVEYS

Type of survey(s)	MAGNETOMETER	E.M.	V.L.F.
Instrument(s)	GEOMETRICS G-803	AERODAT 3 FREQ.	TOTEM 2A
Accuracy	0.5 GAMMAS	(specify for each type of survey) 1 PPM.	1%
Aircraft used	AT STAR	(specify for each type of survey) HELICOPTER	AEROSPATIALE.
Sensor altitude	150'	100'	150'

Navigation and flight path recovery method _VISUAL NAVIGATION , MANUAL AND_
AUTOMATIC FIDUCIALS — ON BOARD CAMERA

Aircraft altitude____200'_____ Line Spacing___660'__

Miles flown over total area___317_____ Over claims only___63__

TABLE I - CLAIM LIST

SSM.				
	637647	to	637673	27
	637675	to	637679	5
	637681	to	637685	5
	637687	to	637691	5
	637693	to	637731	39
	637736	to	637744	9
	661124	to	661125	2
	661165	to	661166	2
	661197			1
	693623	to	693627	5

Total: 100 claims

Total of 100 contiguous claims for approximately 1619 hectares (4000 acres). All the claims are located in Sault Ste. Marie mining division, Ontario.

1983 07 07   2.5659

Mrs. M.V. St. Jules
Mining Recorder
875 Queen Street East
P.O. Box 669
Sault Ste. Marie, Ontario
P6A 5N2

Dear Madam:

We have received reports and maps for an Airborne Geophysical
(Electromagnetic and Magnetometer) survey submitted on Mining
Claims SSM 637647 et al in the Area of Pilot Harbour.

This material will be examined and assessed and a statement of
assessment work credits will be issued.

We do not have a copy of the report of work which is normally
filed with you prior to the submission of this technical data.
Please forward a copy as soon as possible.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416) 965-1380

A. Barr:mc

cc: Rocco A. Schiralli (In Tudit)
      Suite 420
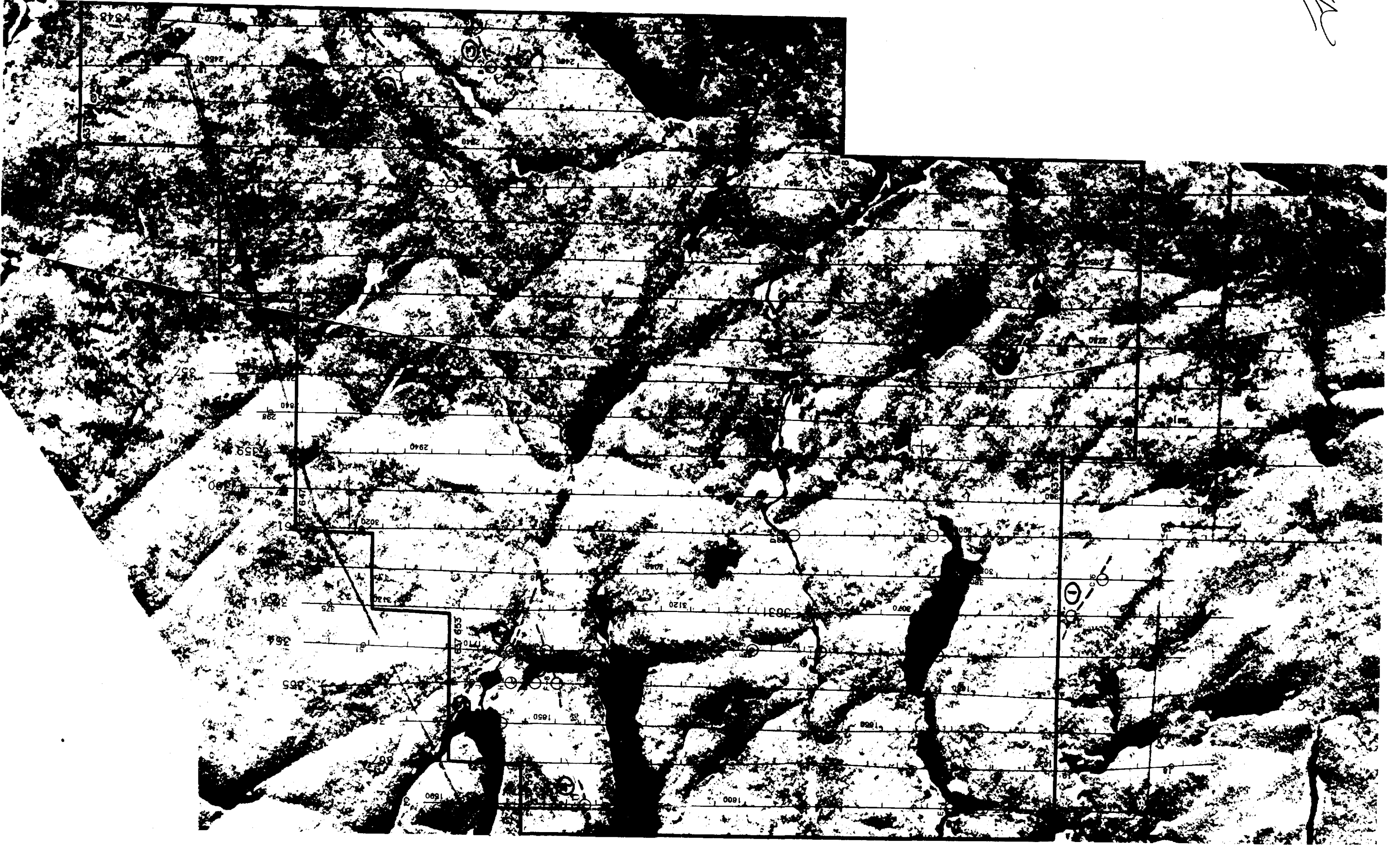   181 University Avenue
      Toronto, Ontario
      M5H 3M7

cc: Fenton Scott
      17 Malabar Place
      Don Mills, Ontario
      M3B 1A4

SEE ACCOMPANYING
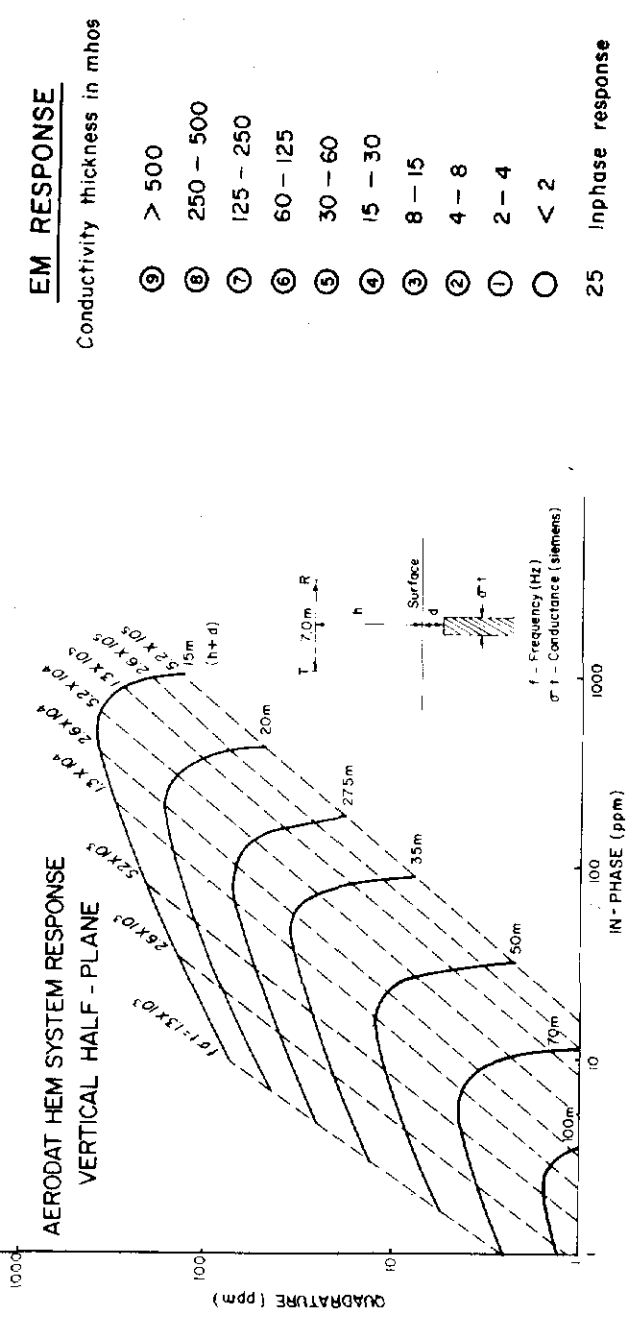# MAP(S) IDENTIFIED AS

41N/13NE - 0012 #1

2

3

LOCATED IN THE MAP
CHANNEL IN THE FOLLOWING
SEQUENCE (X)

X	X	X

EM RESPONSE
Conductivity thickness in mhos

⊕	> 500
⊕	250 - 500
⊕	125 - 250
⊕	60 - 125
⊕	30 - 60
⊕	15 - 30
⊕	8 - 15
⊕	4 - 8
⊕	2 - 4
⊙	< 2
25	Inphase response
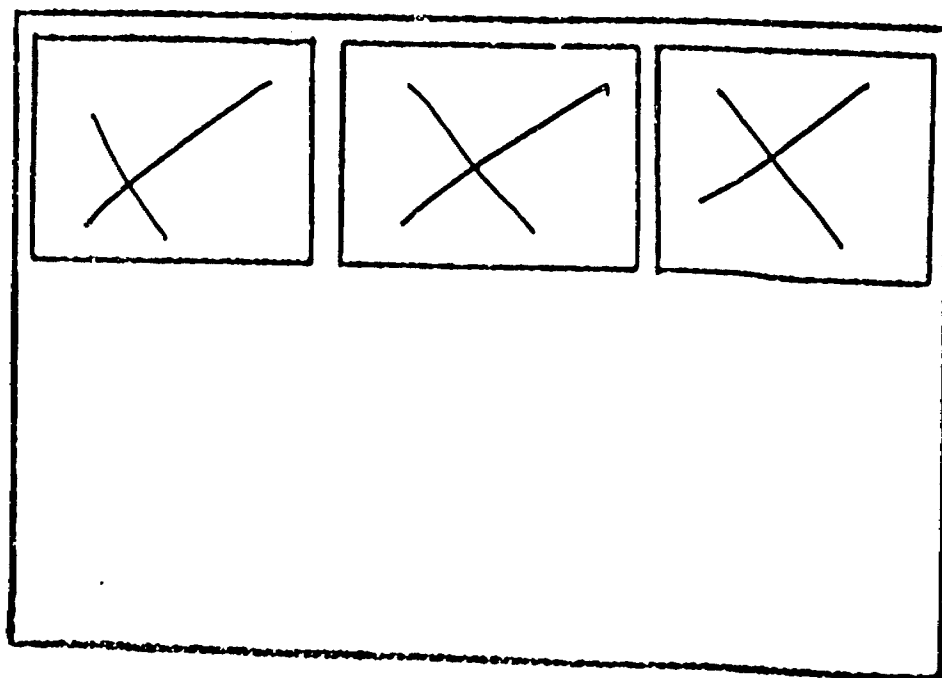
Horizontal control .... based on photo laydown
Average bird height .... 30 metres
Line spacing .... 660 feet

AERODAT HEM SYSTEM RESPONSE
VERTICAL HALF - PLANE

PROSPECTING GEOPHYSICS LTD.

AIRBORNE ELECTROMAGNETIC SURVEY

BRASS RING RESOURCES
MAPLE LAKE CLAIMS
ONTARIO

SCALE 1/ 15,840

DATE:	February, March 1983
N.T.S. No:	41N , 42C
MAP No:	1

▼ **AERODAT LIMITED**
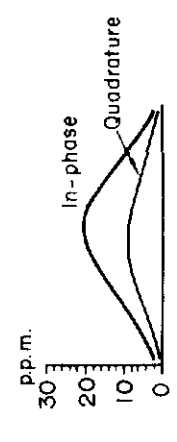
41N/13NE - 0012 # 1

PROSPECTING GEOPHYSICS LTD.

AIRBORNE ELECTROMAGNETIC SURVEY
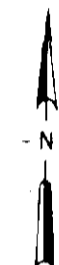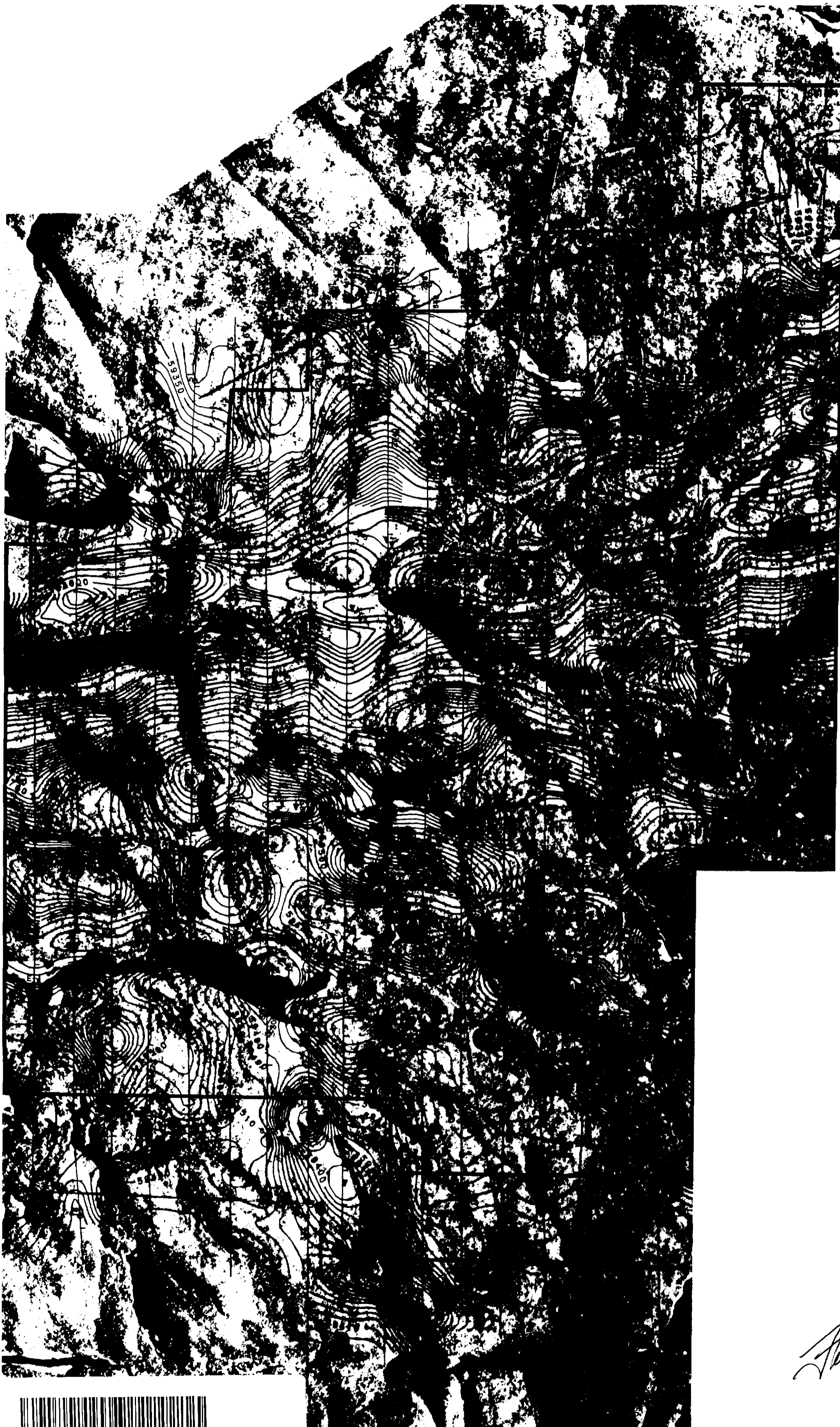PROFILES

BRASS RING RESOURCES
MAPLE LAKE CLAIMS
ONTARIO

SCALE 1/ 15,840

DATE:	February, March 1983
N.T.S. No:	41N , 42C
MAP No:	2

▼ **AERODAT LIMITED**

In-phase
Quadrature

4IN/13NE-0012 #2

LEGEND

100 gammas ....
50 gammas ....
10 gammas ....

PROSPECTING GEOPHYSICS LTD.		
TOTAL FIELD MAGNETIC MAP		
BRASS RING RESOURCES		
MAPLE LAKE CLAIMS		
ONTARIO		

SCALE 1/15,840

1/2   0   1/2 Mile

1   0   1 Kilometre
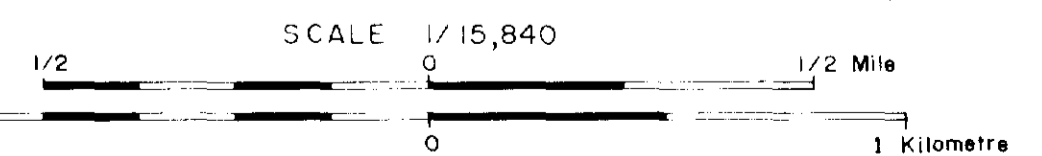
▼ AERODAT LIMITED	DATE:	February, March 1983
	N.T.S No:	4IN, 42C
	MAP No:	3
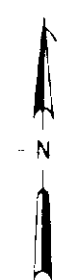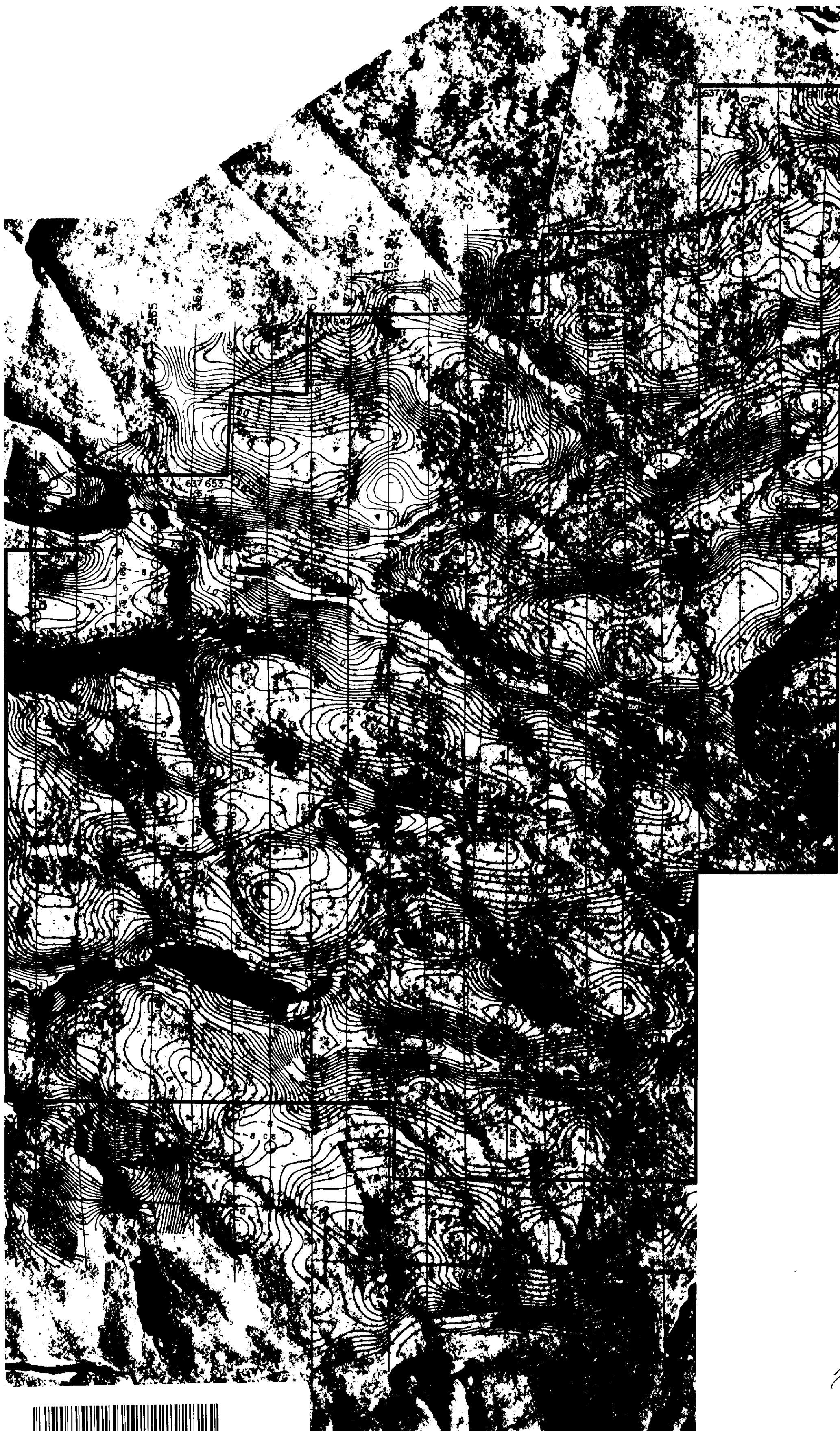
LEGEND

100	gammas	
50	gammas	
10	gammas	

4IN/I3NE-0012 #3

PROSPECTING GEOPHYSICS LTD.

VLF-EM
"LINE" NAA (MAINE) 17.8 KHz.
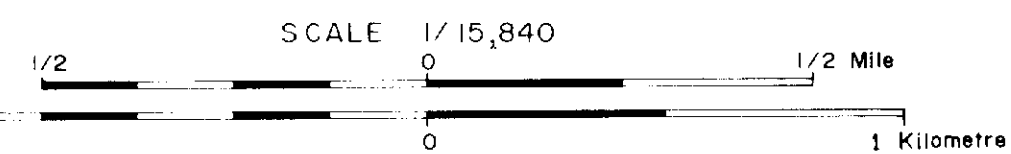
BRASS RING RESOURCES
MAPLE LAKE CLAIMS
ONTARIO

SCALE 1/15,840

1/2   0   1/2 Mile

1   0   1 Kilometre

DATE:	February, March 1983
N.T.S. No:	4IN, 42C
MAP No:	4

▼ AERODAT LIMITED