

41P12SE0511 2.5421 GROVES

REPORT

ON

VLF EM AND MAGNETIC SURVEYS

ON

PROPERTY

OF

THOR RESOURCES INC.

GROVES AND ST. LOUIS TOWNSHIPS

PORCUPINE MINING DIVISION

SUDBURY DISTRICT, ONTARIO

RECEIVED

MAK 1 1 1983

MINING LANDS SECTION



GEOCANEX LTD.
R. Gillick
H.J. Hodge
March 4th, 1983





TABLE OF CONTENTS

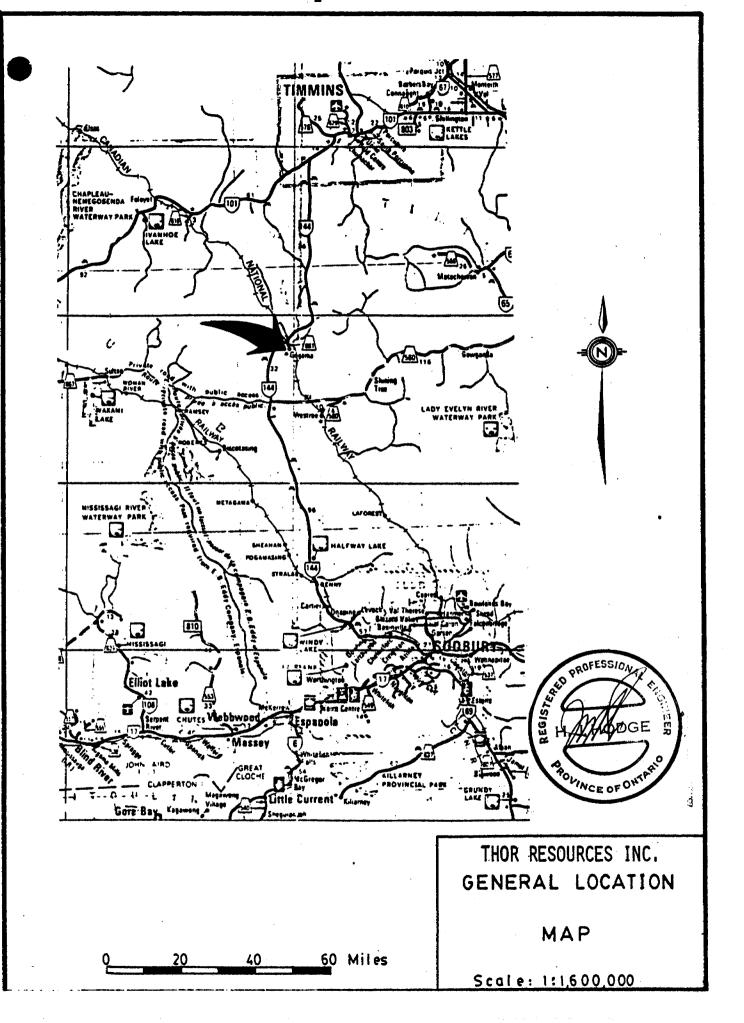
	Page
Summary	1
General Location Map	2
Property Location Map	. 3
Introduction	4
Geology	4
Previous Work	5
Present Program	5
Results and Interpretation	
Zone A-A'	6
Zone B-B'	6
Conductor C	7
Conductors D and E	7
Conductors F and G	8
Conductor H	8
Conductor I	8
Conductor J	8
N-W Fault	9
Conclusions	9
Recommendations	9
Estimated Cost of Recommended Program	10
References	11
Maps	
No. 1 - Base Map showing Claim Locations	(back of report)
No. 2 - Total Field Magnetics	(back of report)
No. 3 - VLF Survey	(back of report)

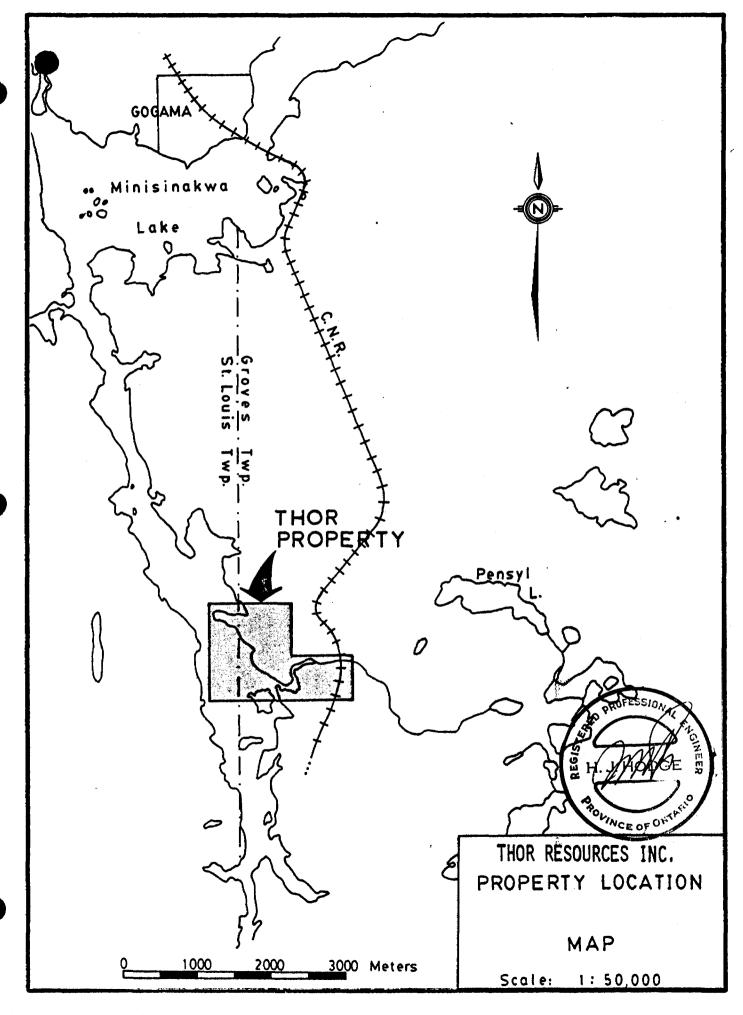
SUMMARY

VLF EM and magnetic surveys, carried out over the Thor Resources Inc. Gogama Area property in January 1983, were successful in delineating ten bedrock conductors or conductive zones.

Two of these zones (A-A' and B-B') may represent sulphide bearing shear zones associated with magnetite-sulphide iron formation. These zones are considered as having good potential for gold mineralization, and are recommended as high priority drill targets.

Two other conductive zones (C and E-F) are considered to be caused by pyrrhotite rich sulphide zones. System E-F indicates folding and/or faulting along its length. It is recommended that both these zones be investigated by diamond drilling.





INTRODUCTION

The following report describes ground geophysical (VLF EM and Magnetic) surveys carried out during January, 1983 over Thor Resources' property in the Gogama Area of Northern Ontario (General Location Map).

The property, consisting of a block of 16 unpatented mining claims, is located approximately five miles due south of the Town of Gogama near Minisinakwa Lake (Property Location Map). Access from Gogama to the property area for the present program was via snowmobile over the ice of Minisinakwa Lake.

GEOLOGY

The property lies along a narrow east-west trending belt of metasedimentary and metavolcanic rocks bounded on the north and south by granitic intrusives. Major northnorthwesterly trending faults cut across the belt.

On the Thor property itself, east-west striking, steeply north to vertically dipping, metasedimentary rocks, are cut by a major zone of east-west shearing running approximately parallel to the bedding. The metasediments are overlain to the north by metavolcanics, consisting of andesitic and basaltic flows.

Numerous gold occurrences have been located throughout the belt. One former gold producer, the Jerome Mine, occurs within the belt approximately 25 miles to the west.

Gold mineralization is generally of two types:

- (1) Gold in sulphide zones and/or quartz veins in the metasedimentary-metavolcanic rocks
- (2) Gold in quartz veins in granitic rocks.

On the Thor property grab samples from a pyritic schist in the eastern part of the property returned .02 oz/ton gold. Further to the east in the Pensyl Lake Area, roughly along strike with the shear zone crossing the Thor property, assays up to .5 oz/ton gold were obtained from several showings, associated with iron formation. To the west in Chester and Yeo Townships, numerous high grade showings have been located and minor gold production has been achieved in past years.

PREVIOUS WORK

During November, 1980, the Thor property was covered by regional airborne EM and magnetic surveys carried out by Geophysical Surveys Inc. The results indicated a bedrock VLF EM conductor with a coincident magnetic high striking east-west across the northern portions of Claims PA 573087 and PA 574775. (Map 4 in pocket).

In December 1981, H.J. Hodge examined the property and carried out a reconnaissance VLF survey to position the airborne anomaly on the ground. The reconnaissance lines indicated a strong (peak-to-peak 75%) VLF anomaly striking east-west across Claim PA 573097 (Report on Property of Thor Resources Inc. by H.J. Hodge, September, 1982).

PRESENT PROGRAM

Between January 12th and 26th, 1983, linecutting, and magnetometer and VLF EM surveys were carried out over the Thor property by Geocanex Ltd. of Toronto.

The Mileage breakdown of these surveys is as follows:

Linecutting	27.12 miles
Magnetometer surveying	24.0 miles
VLF surveying	23.41 miles

Personnel involved in the work were:

R.	Morin and crew - linecutting	Jan.	12	to	25
R.	Gillick - geophysicist	Jan.	12	to	26
	Usarzica - operator	Jan.	20	to	25

A grid was cut with north-south lines approximately perpendicular to the geological strike. Line spacing was 200 feet over the western half of the grid and 100 feet over the eastern half. Included in the above mileage totals were 600 foot line extensions cut over newly staked additions to the Thor property to the north.

The magnetic survey was performed using an E.D.A. PPM 350 proton precession field magnetometer. Diurnal/drift changes were monitored with an E.D.A. PPM 400 base station magnetometer and all field readings subsequently corrected.

The VLF EM survey was carried out using a Geonics EM-16 unit tuned to receive the 17.9 Hz signals transmitted from Cutler, Maine.

The station interval for both surveys was 50 feet along all grid lines.

RESULTS AND INTERPRETATION

The magnetic and VLF EM results are plotted on Maps 2 and 3, respectively.

ZONE A-A'

The most prominent feature on Map 2 is a relatively broad magnetic ridge of maximum amplitude 7,000 gammas striking approximately east-west from line 23E to L46E near the baseline.

VLF conductors A and A' strike approximately along the north and south flanks of this ridge, respectively, from L33E to L46E. The dominant conductor of the pair is conductor A which exhibits peak-to-peak amplitudes of over 100% along several profiles. Conductor A appears to cross to the north side of the magnetic ridge west of L32E.

The lack of direct correlation between the conductor axes and the apex of the magnetic ridge eliminates pyrrhotite as the anomalous source. In all likelihood, the magnetic feature represents a zone of moderate magnetite iron formation. Local contortions, within and off the ridge, suggest folding within the iron formation.

The occurrence to the east (near the railway), of a strongly sheared pyrite-bearing sericite carbonate schist (Report by H.J. Hodge), suggests that conductors A and A' may represent the edges of a westward striking shear zone, or pyritic units within a shear zone.

The VLF profiles for conductor A indicate a steeply north-dipping conductor. A rough estimate of maximum conductor depth is obtained as the horizontal half-width of the peak-to-peak VLF anomaly. This gives a depth of less than 150 feet to the top of the conductor.

ZONE B-B'

This zone strikes eastward from L31E to L46E at about 10+00S. It continues off the property to the east.

Its characteristics are very similar to Zone A-A' however, anomaly amplitudes are much smaller. Conductors B and B' again run along the flanks of a magnetic anomaly. Local distortions of the magnetic trend suggest some folding has taken place. The resemblance of this Zone to Zone A-A' suggests an analogous interpretation; weak iron formation within or flanking a parallel shear, possibly containing sulfide conductors.

Dip estimates for the conductor pair are again steeply to the north. Conductor B' is estimated to be less than 120 feet deep and Conductor B somewhat shallower with a depth of less than 75 feet.

CONDUCTOR C

This conductor was discovered along the original north boundary of the property. Additional claims were staked, and line extensions cut to the north to provide complete coverage of this conductor.

Conductor C strikes approximately east-west from L8E to L18E at about 13+00N. It continues off the property to the east.

The conductor is moderate to strong with peak-to-peak amphitudes as high as 70%. Its depth appears to be increasing westward. The conductor shows direct coincidence with the axis of a narrow magnetic ridge. A massive to semi-massive zone of pyrrhotite is a probable source. Disseminated sulphides along the western limb of the zone may explain the lack of conductive response west of L8E along the magnetic ridge. The system may be displaced by faulting or terminated at its western extremity although a weak magnetic trend beneath Minisinakwa Lake, and on strike with Zone C, may indicate its continuation.

The dip of Conductor C appears to be steeply northward with a depth of less than 50 feet on L18E and increasing westward possibly along a gentle plunge.

CONDUCTORS D AND E

Conductors D and E roughly follow the axis of a rather irregular east-west trending magnetic high. The two conductors are possibly fault displaced segments of the same horizons. The whole system may be terminated at its western end by a northwest trending fault or dyke.

The amplitudes of both conductors suggest a moderately conductive source, possibly weak sulphides. The dip is again steeply to the north. The conductor system is shallowest on L18E (\simeq 100 feet) with depth increasing westward.

Conductor E may continue to the east as Conductor I.

CONDUCTORS F AND G

These conductors both lie along the same weak eastwest trending magnetic ridge. Both conductors are of very limited strike extent (Conductor F is less than 500 feet; Conductor G is less than 200 feet). A semi-massive to disseminated magnetic sulphide (eg. pyrrhotite) source is possible.

Due to the limited length of these conductors, they are considered secondary priority targets at this time.

CONDUCTOR H

This conductor, crossing lines 8E, 6E, 4E and 2E, strikes to the northwest off the grid. The amplitude response of the conductor is increasing to the northwest. There is no magnetic correlation. The conductive source could be a non-magnetic sulphide (eg. pyrite), graphite, or a fault. It may be advisable to trace this conductor northwestward at some future time to obtain a better idea of its size and character.

CONDUCTOR I

Located at the northern ends of lines 20E, 21E and 22E, this short strike length conductor exhibits good amplitude response (\$\simes 70\%\) on L20E) but has no magnetic correlation. It is possible that this conductor and Conductor E are continuous; however, the magnetics seem to indicate otherwise.

CONDUCTOR J

This weaker conductor strikes east-west from L2E to L18E at about 5+00S. Due to its signature and location it is believed to be a bedrock conductor despite the lack of magnetic correlation. It may be a weakly conductive fault.

N-W FAULT

The fault outlined on Map 3 strikes along a distinct narrow northwest trending magnetic ridge. Discontinuities in the ridge as plotted are believed to be mainly due to the relatively large (200 foot) line spacing.

The magnetic response of the interpreted fault may be due to partial or complete in-filling with high susceptibility dyke material (eg. diabase).

CONCLUSIONS

Four of the conductors or conductive zones outlined are considered high priority targets..

- (1) <u>CONDUCTORS A AND A'</u> This zone exhibits good conductive responses suggesting sulphides and/or shearing, as well as, the strong possibility of the presence of magnetite iron formation. This combination indicates a good geological environment for gold mineralization.
- (2) CONDUCTORS B AND B' This zone is believed to represent a similar environment to that of Conductors A and A', and hence also indicates good potential for gold localization.
- (3) CONDUCTOR C It is highly likely that pyrrhotite is present here and possibly other sulphides with economic potential. Although the conductor itself has a strike length of about 1,000 feet (on Thor property), the associated magnetic trend extends for 1,800 feet on the property.
- (4) <u>CONDUCTORS E AND F</u> These conductors, along with their associated magnetics, indicate folding and/or faulting along their lengths. Such structure could provide pathways and depositional sites for gold bearing solutions. The entire dual conductor system is extensive with a strike length of over 1,800 feet.

RECOMMENDATIONS

The four conductive zones described above, A-A', B-B', C and E-F, should be investigated by diamond drilling. A minimum of eight (8) holes should be drilled, two on each conductive zone. These holes should be located so as to intersect the conductors at 150 to 200 feet below surface. This would require a minimum hole length of 300 feet. This drilling could be carried out in winter or summer conditions.

Geological mapping and prospecting should be conducted over the property, and any sulphide zones, quartz veins, or mineralized shear zones should be sampled and analyzed for gold. Emphasis should be placed on more detailed mapping and prospecting in the conductive areas.

Humic sampling should be carried out over the whole grid at 100 feet spacing along the lines and samples analyzed for gold.

ESTIMATED COST OF RECOMMENDED PROGRAM

Diamond Drilling - 2,500 feet at \$25/ft (all inclusive)	\$62,500
Geological Mapping, prospecting	5,000
Geochemical sampling	10,000
Supervision, transportation, supplies, etc.	5,000
Contingency - 20%	16,500
TOTAL	\$99,000

Respectfully submitted, GEOCANEX LTD.

Par R. Gilliak

A.J. Hodge



REFERENCES

Hodge, H.J. - Report on Property of Thor Resources Inc., September, 1982.

Society of Exploration Geophysicists - Mining Geophysics Vol. II Telford, W.M. et al - Applied Geophysics



Report of Work

(Geophysical, Geological, Geochemical and Expenditures)





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Type of Survey(s)	_				Township o			
MAGNETICS	S, $VLF-$	EM					7W/2	
(Claim Holder(s)							r's Licence No.	
THOR RES	SOURCES	1100	•			<i>F</i> -	1278	
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OFFICE USE ONLY



Ministry of Natural Resources

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) Electromagnetic(VLF) & Mag	netic
Township or Area Groves & St. Louis Twps. Claim Holder(s) Thor Resources Inc.	MINING CLAIMS TRAVERSED List numerically
Survey Company GEOCANEX LTD. Author of Report R. Gillick and H.J. Hodge Address of Author 700-11 Adelaide St. Toront Covering Dates of Survey Jan. 12 to Jan. 27, 1 (linecutting to office) Total Miles of Line Cut 27.12 miles	1
CREDITS REQUESTED Geophysical —Electromagnetic 4 ENTER 40 days (includes line cutting) for first survey. ENTER 20 days for each additional survey using geological game grid. AIRBORNE CREDITS (Special provision credits do not apply support (enter days per claim) DATE: Feb 18/83 SIGNATURE:	602918 602919 602920 602921 602922 602923 602924 602925 648819 648820
Res. Geol. Qualifications 2.45 2.3812 Previous Surveys File No. Type Date Claim Holder	RECEIVED MAR 1 1 1983 MINING LANDS SECTION
	TOTAL CLAIMS 16

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey 2535 Number of Readings Mag. 2535 VLF 2473 Number of Stations ___ 50 feet Line spacing 200' and 100' Station interval_ Profile scale 1 inch = 40% Contour interval 50 gammas Instrument _ E.D.A. PPM 350 total field magnetometer Accuracy - Scale constant 1 gamma Diurnal correction method recording base station Mag. (EDA PPM 400) Base Station check-in interval (hours)_____ Base Station location and value North Shore Minisinakwa Lake 58650 Geonics EM-16 Instrument ____ ELECTROMAGNETIC Coil configuration _____ Coil separation ___ Accuracy 18 ■ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line Method: Frequency 17.8 KHz - Cutler Maine (specify V.L.F. station) Parameters measured in-phase and quadrature Instrument _____ Scale constant _____ Corrections made _____ Base station value and location _____

Elevation accuracy_____



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)_____ Instrument(s) (specify for each type of survey) Accuracy_____ (specify for each type of survey) Aircraft used_____ Sensor altitude_____ Navigation and flight path recovery method _____ Aircraft altitude_____Line Spacing_____ Miles flown over total area_____Over claims only_____

GEOCHEMICAL SURVEY - PROCEDURE RECORD



Numbers of claims from which samples taken		
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Ministry of Natural Resources Geotechnical Report Approval

May 24/83

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To: Mining Land	ds Section, Room 6462, Whitney Block.	(Tel: 5-1380)		
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Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We have received reports and maps for a Geophysical (Electromagnetic & Magnetometer) Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims P 573087 et al in the Township of Groves.

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

Yours very truly,

E.F. Anderson Director Land Management Branch

Whitney Block, Room 6450 Queen's Park Toronto, Ontario N7A 1W3 Phone: 416/965-1380

A. Barr:sc

cc: Thor Resources Inc Toronto, Ontario

cc: Geocanex Limited Toronto, Ontario Attn: R. Gillick & H. Hodge. Torenco, Ont. M5H 1L9
Telephone (416) 363-4376



FIELD OFFICE No. 8 - 12 JUDGE AVE. NORTH BAY, ONT. PIA 182 TEL. (708) 474-7842

GEOPHYSICAL AND GEOLOGICAL CONTRACT SERVICES

March 9th, 1983

Mining Recorder
Ministry of Natural Resources
60 Wilson Ave.
Timmins P4N 2S7

RECEIVED

MAK 1 1 1983

MINING LANDS SECTION

Dear Sir,

On behalf of Thor Resources Inc. I am enclosing two (2) copies of a report on VLF EM and magnetic surveys, and completed Technical Data Statement for 60 days assessment credits on its property in Groves and St. Louis Townships.

I trust that everything is in order.

Yours very truly

GEOCANEX LTD.

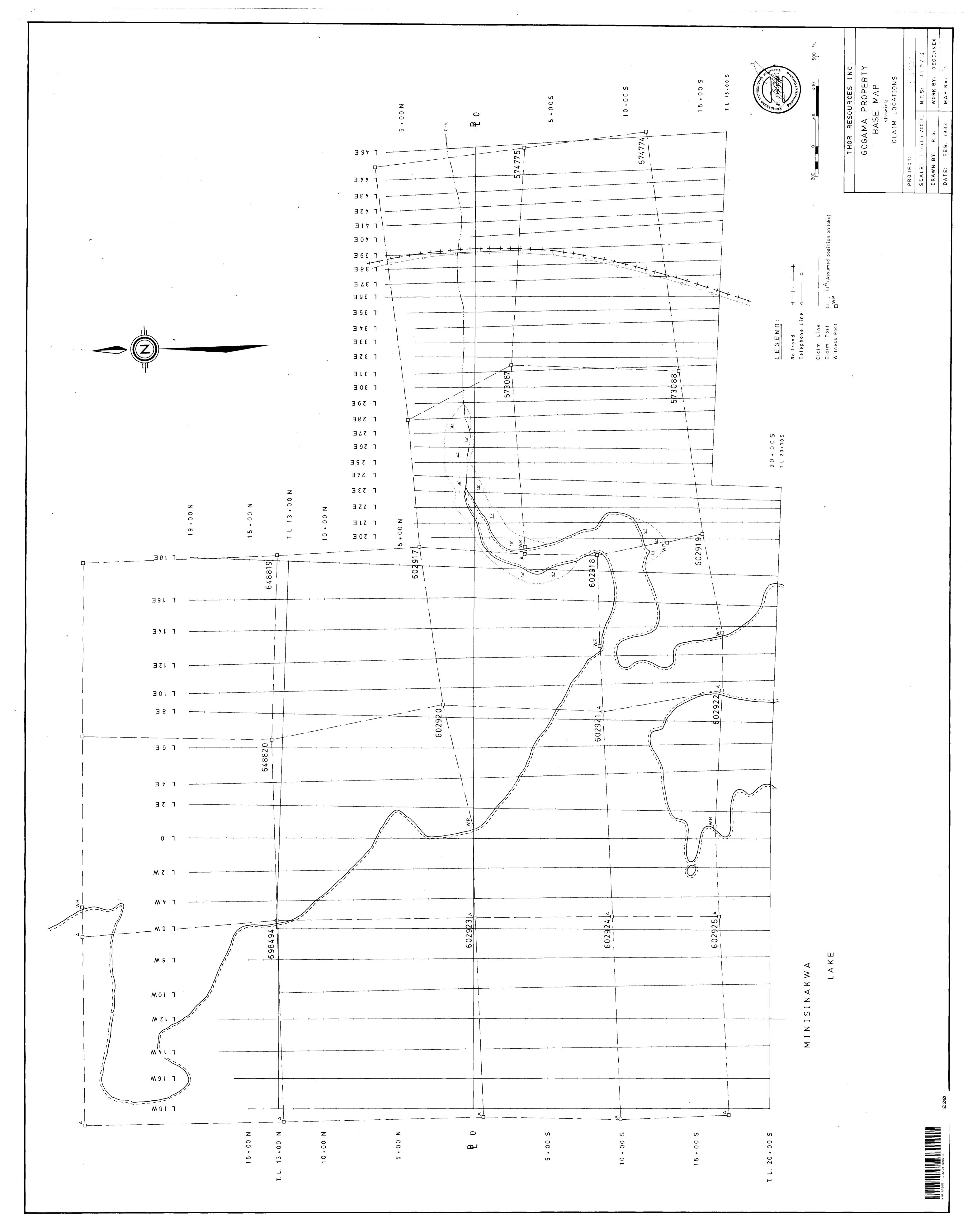
Garth B. Burton

President

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c.c. Thor Resources Inc.

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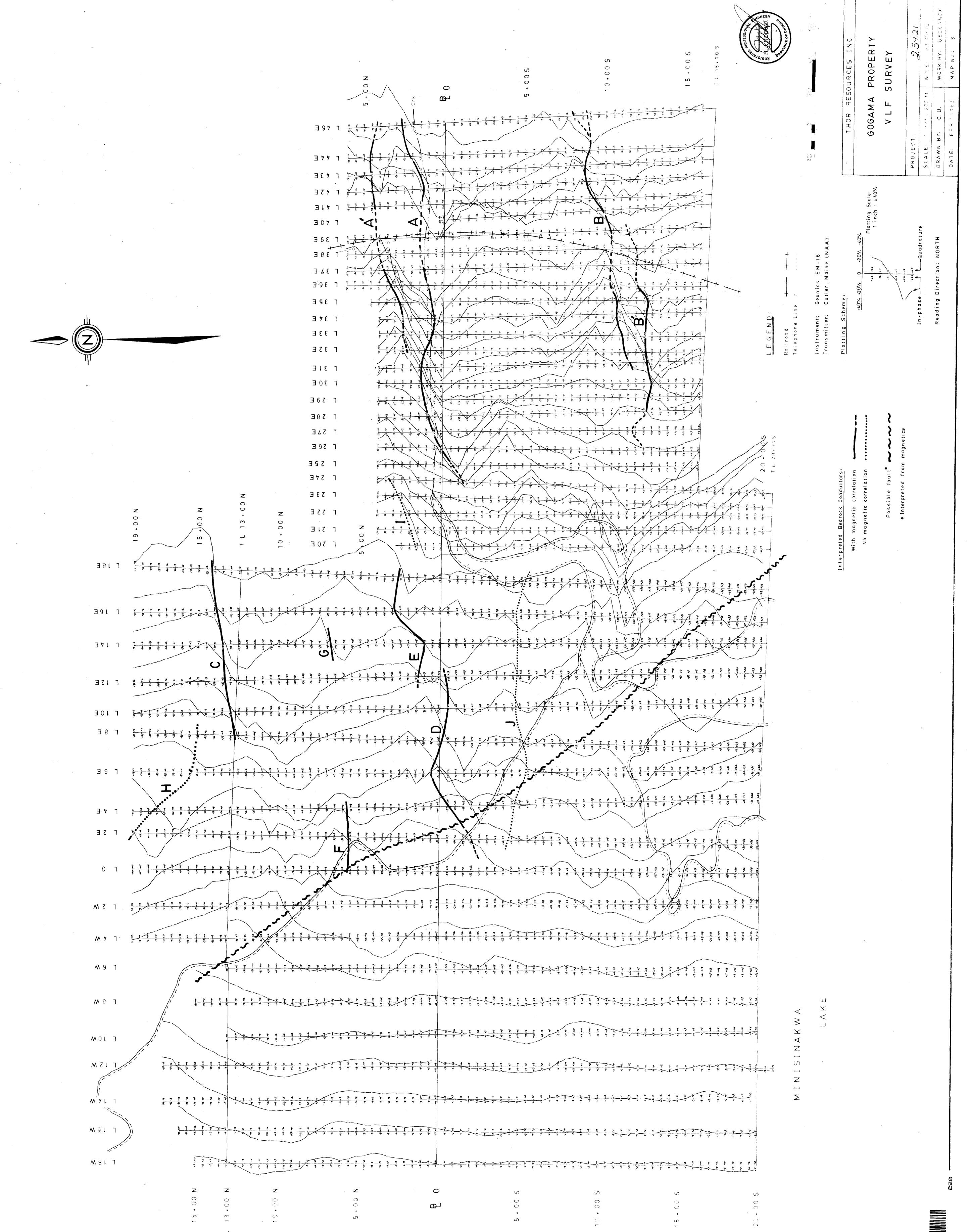
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