

63.699

ZENMAC METAL MINES LIMITED

GEOLOGICAL EXAMINATION

August, 1  
1956



42A03NE8462 63.699 BARTLETT

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INTRODUCTION:

During the summer of 1956, a number of trenches were dug and some blasting was done on the Timmins' property of Zenmac Metal Mines Limited. The work was done by John Brisson and Len Barnes, prospectors from Timmins, Ontario.

During the period from August 8th to 11th, 1956, the property was visited by the writer and the trenches were examined and mapped. This information is presented on an accompanying map at one inch equals one hundred feet.

LITHOLOGY:

Bedrock in most of the trenches is iron formation. This is a siliceous sediment containing bands of slate and magnetite. These bands range from half an inch to several inches in thickness. The remaining 50% to 75% of the rock is quartzite. These bands are from one inch to several inches thick.

Several outcrops of clastic sediments were mapped, ranging from sandstone (?) through arkose to conglomerate. These appear to be parallel to the iron formation and probably represent other members of the same sequence of deposition.

Occurring along both sides and through the iron formation are some basic intrusives, mostly diorite and gabbro. The diorite is dark green, generally medium grained and is diabasic to equigranular in texture. The gabbro is similar except that it contains a higher proportion of ferromagnesian minerals.

STRUCTURE:

The iron formation strikes  $0^{\circ}$  to  $30^{\circ}$  true and dips eastward at  $70^{\circ}$  to  $80^{\circ}$ . In some places the bedding has been highly contorted but this seems to have no relation to the mineralization.

From the results of a magnetometer survey it was concluded that the iron formation was cut by two north-west trending, right-handed faults, but these are not exposed at the surface.

MINERALIZATION:

The gabbro and diorite contain up to 5% pyrite with minor pyrrhotite and magnetite. The iron formation contains up to 55% pyrite. The mineralization occurs in bands up to 18 inches wide which are parallel to the bedding. Some pyrrhotite is visible in the more massive occurrences. At 2,900 feet east on line 8 north, and in another trench 150 feet north, chalcopyrite mineralization is exposed. It occurs along slip faces of small shears in association with the other sulphides.

Grab samples of selected material have assayed up to 2.4% copper with a trace of gold. The best exposure is estimated to run about 1% copper over 2 or 3 feet in width. Numerous occurrences of chalcopyrite are visible in the trenches but no zone of concentration could be found.

CONCLUSIONS:

The immediate area of the main showings and the extensions thereof on strike are worthy of a limited amount of further exploration in the hope that a zone of concentrated copper mineraliza-

tion can be found.

Respectfully submitted,

*Michael Ogden*

Michael Ogden.

ZENMAC METAL MINES LIMITED

Timmins Property

MAGNETOMETER SURVEY

January 1,

1957



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INTRODUCTION:

The following report is based upon the results of a magnetometer survey carried out on the Timmins property of Zenmac Metal Mines Limited. The field work was carried out by the writer during a period from November 17th to December 22nd, 1956, assisted by John Brisson. The claims covered by the survey are numbered as follows: P39026, P39027, P39051, P39057, P39058, P39411, P39409, P39411, P39412, and P39415.

LOCATION:

The property is located in Bartlett Township in the District of Timiskaming, some 35 miles south of Timmins, Ontario. It is easily reached by a road which is open all the year round.

PROPERTY:

The property consists of 72 claims, all contained within the Porcupine Mining Division, and numbered as follows:

P39022 - P39030 inclusive  
P39041 - P39058 inclusive  
P39307 - P39333 inclusive  
P39406 - P39423 inclusive

A total of 72 claims.

TOPOGRAPHY:

The area is fairly rugged and is characterized by ridges up to 100 feet high which are randomly oriented. Outcrops are rare,

the bedrock being covered with gravel, sand and muskeg. The bush is dense and practically impenetrable in places. Spruce and jackpine predominated.

PURPOSE OF SURVEY:

Previously a magnetometer survey had been conducted over the property with readings taken at 100-foot intervals. This survey gave a rough indication of the outlines of the iron formation which runs across the property in a north-north-east direction. Sulphides have been found on the property, apparently associated with the iron formation. Thus, more information concerning the extent and structure of the formation was desired. It was thought that magnetometer readings taken at 50-foot intervals, or even 25-foot intervals, would give this information.

METHOD OF SURVEY:

A base line was cut previously in a north-south direction, and picket lines at 400-foot intervals were cut at right angles to it.

A Sharpe A-2 magnetometer, having a scale constant of approximately 21.6 gammas per scale division was used for the survey. This value was checked daily.

A main base station was established some 150 feet west of the camp, on the south side of the road. Daily readings were taken over this station to obtain a day to day correction.

Sub base stations were accurately established along the base lines at 800-foot intervals, by taking several check readings. These readings were compared with those taken during the previous

survey and a normal correction was obtained. During the survey, at maximum intervals of two hours, readings were taken over the nearest sub-base station. These readings were compared at the end of the day and diurnal corrections calculated.

To each reading, therefore, a normal correction, a day to day correction, and a diurnal correction were applied.

Readings were taken at 50-foot intervals over those areas presumed to be underlain by iron formation. If consecutive readings showed an above average difference in magnetic intensity, additional readings were taken at intervening 25-foot intervals.

#### DISCUSSION OF RESULTS:

The corrected readings are presented on the accompanying map at one inch equals 300 feet. A profile for each line and iso-magnetic contours are shown.

Readings taken over, or adjacent to, outcrops of iron formation gave, in all cases, high readings, i.e. over 5,000 gammas.

Away from the iron formation, the ground is characterized by the uniformity of the magnetic relief, with values generally ranging between 1,100 and 1,500 gammas, although there are a few exceptions to this.

The check survey did not reveal any additional anomalous areas. However, it did serve to more accurately delineate known magnetic anomalies. These anomalies show the iron formation to strike across the property at  $15^{\circ}$  true, and to dip nearly vertically. It would appear that the formation is faulted twice as it crosses the Zenmac property. These postulated faults would strike at  $300^{\circ}$ . The northern fault crosses line 20 north at 3,300 feet

east, and the other crosses line 16 south at 2,600 feet east. It is emphasized that there is no surface indication of these faults.

CONCLUSIONS:

The magnetometer check survey did not indicate any additional anomalous areas. It served to more clearly outline the extent of the iron formation and to strengthen the theory that the formation is faulted twice as it crosses the property.

RECOMMENDATIONS:

It is recommended that 12 claims covering the area around the iron formation be retained and the remainder be allowed to lapse. Those claims to be held are: P39026, P39027, P39051, P39057, P39058, P39311, P39408 to P39412 inclusive, and P39315.

Respectfully submitted,



Ross D. Lawrence, B.A. Sc.

January 1, 1957.



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Zenmac Metal Mines Ltd.

Geological Report on the  
Bartlett Township Property.

January 1956

J. Gauvin



Zenm Metal Mines Ltd.  
414 - 200 Bay St.  
Toronto, Ont.

Gentlemen:

The following report describes the geological survey conducted over your property near Timmins, Ontario. The survey was carried out by the writer during the late summer period of 1955.

The claims covered by the survey are as follows:

39022 - 39030 inc.

39041 - 39058 inc.

39307 - 39333 inc.

39406 - 39423 inc.

A total of 72 claims.

The results of the survey are shown combined with a magnetometer survey on the accompanying map.

#### Location

The property is located in Bartlett township in the district of Timiskaming, some 39 miles south of the city of Timmins. It is easily reached by a road open all year round.

#### Size of area

The 72 claims of the property cover a rectangular area of 2.7 miles long by 1.7 miles wide, that is 4.6 square miles.

## Topography

The area has a fairly rugged topography with ridges up to approximately 90 feet high. It is covered by gravel, sand and muskeg. The rock outcrops are very few and separated by swamps and lakes. The bush is dense and practically impenetrable in many places. Spruce and jackpine predominate.

## Purpose of investigation

A narrow band of iron formation running in a north-east direction underlies the eastern part of the property. An outcrop of this formation is located on Line 8+00N at 29+00E. It is 60 feet long and 15 to 30 feet wide. It shows heavily mineralized alternating beds of black slate and of white quartzite. In a few places the sulphides are massive and carry a trace of copper (chalcopyrite) in the pyrite and pyrrhotite. The north extension of this outcrop leads to a second one 15 feet away which is the barren iron formation of magnetite bands into the quartzite.

The purpose of the investigation was to find the location and the size of the interbedded iron formation as well as the nature and content of its mineralized sections. Also, it was to know the nature of the underlying rocks over all the property which may give clues concerning the local structure.

## Method of investigation

The ground has been mapped by running traverses along east-west picket lines 400 feet apart on north-south base lines.

### Summary and conclusions

The geological structure is largely unknown beside the facts that the general trend of the formations is consistently in a N.N.E. direction with a steep dip to the east.

The iron formation seems to be broken into three main sections.

The mineralization is epigenetic and of hydrothermal origin. It replaces the quartzite to give in few places a quite massive occurrence of sulphides.

### Recommendations

The quartzite may be a good carrier of base metal ores and the quartz porphyry of gold and silver ores as they are in the Porcupine area. Therefore, in the way of subsurface investigation we recommend a few exploration diamond drill holes in those localities where the mineralized siliceous sediments and quartz porphyry occur. These holes should be located on the east side of the iron formation and be drilled in a westward direction through the favorable geological units. Furthermore, the drilling will provide more information about the sedimentary formation, as for its depth, shape, attitude, and width.

### Stratigraphy and Petrography

The rock types are very numerous for a very small number of outcrops. They are granite, aplite, syenite, quartz porphyry, rhyolite, andesite, tuff and agglomerate.

The granite is of the common type, pink and of a fine grained texture, it contains very little biotite.

The aplite is of the red type, very fine grained texture. It occurs near the granite along the east shore of Scott Lake (Lines 36+00S, 40+00S, etc.). There is no visible contacts.

The syenite occurs only as one outcrop on Line 56+00N at 17+00E. It looks like the above granite without quartz. It is probably the result of a lesser quartz content in the granite intrusive.

The quartz diorite very similar to the diorite in composition, contains some blue quartz. The texture is medium to fine grained. It occurs mostly in the south-west corner of the property, close to the diorite intrusive.

The diorite is dark green and generally of a medium grained texture. It contains a fair amount of dark minerals as hornblende and pyroxene and a little biotite. It is the main intrusive of the area. It occurs on both sides of the iron formation and even cuts through in a few places. It lies also in the western section of the property. The quartz diorite as well as the diorite contains in a few places a fair amount of mineralization which is mostly pyrite up to 5% and a little pyrrhotite and magnetite. In the vicinity of the iron formation the mineralization is heavier and disseminated throughout the formation. In a few places the diorite has a granodioritic aspect.

The gabbro occurs only as one large outcrop on Line 44+00S at 60+00E. It is of a very dark green and medium grained texture. The ferromagnesian minerals predominate over the plagioclase.

The "quartz porphyry" is made of quartz phenocrysts included in an aphanitic greenish gray matrix. The porphyry occurs mainly along the south-west side of the iron formation in a continuous band of approximately 3600 feet long. In the Porcupine area, the quartz porphyry stocks are favorable to the accumulation of ore deposits, i.e. Hollinger, McIntyre. Over this property, the writer did not notice such a relation between the mineralized iron formation and any fractures in the nearby porphyry or related to it. However, this relation might exist below the surface.

The rhyolite is found in the vicinity of the andesitic lava flows and the aplite dykes. It is of a light gray color and has the aphanitic texture.

The andesite is second to the diorite as the most common rock on the property. It forms a continuous unit along the diorite intrusive in the western section of the property. It shows some pillowed and vesicular structures.

The agglomerate lies in the north-west and south-west sections of the property between the andesite and the diorite. It is formed of andesitic fragments in a fine grained and dark green matrix.

### Structural Geology

The original volcanics and sedimentary formations containing the interbedded iron formation were probably intruded by the basic rocks (diorite and gabbro) which were later invaded by an acid intrusive (granite) and by aplite and quartz porphyry.

dykes. The old formations are probably of the Keewatin period (Archeozoic) and the later ones of the Algonian period (Proterozoic).

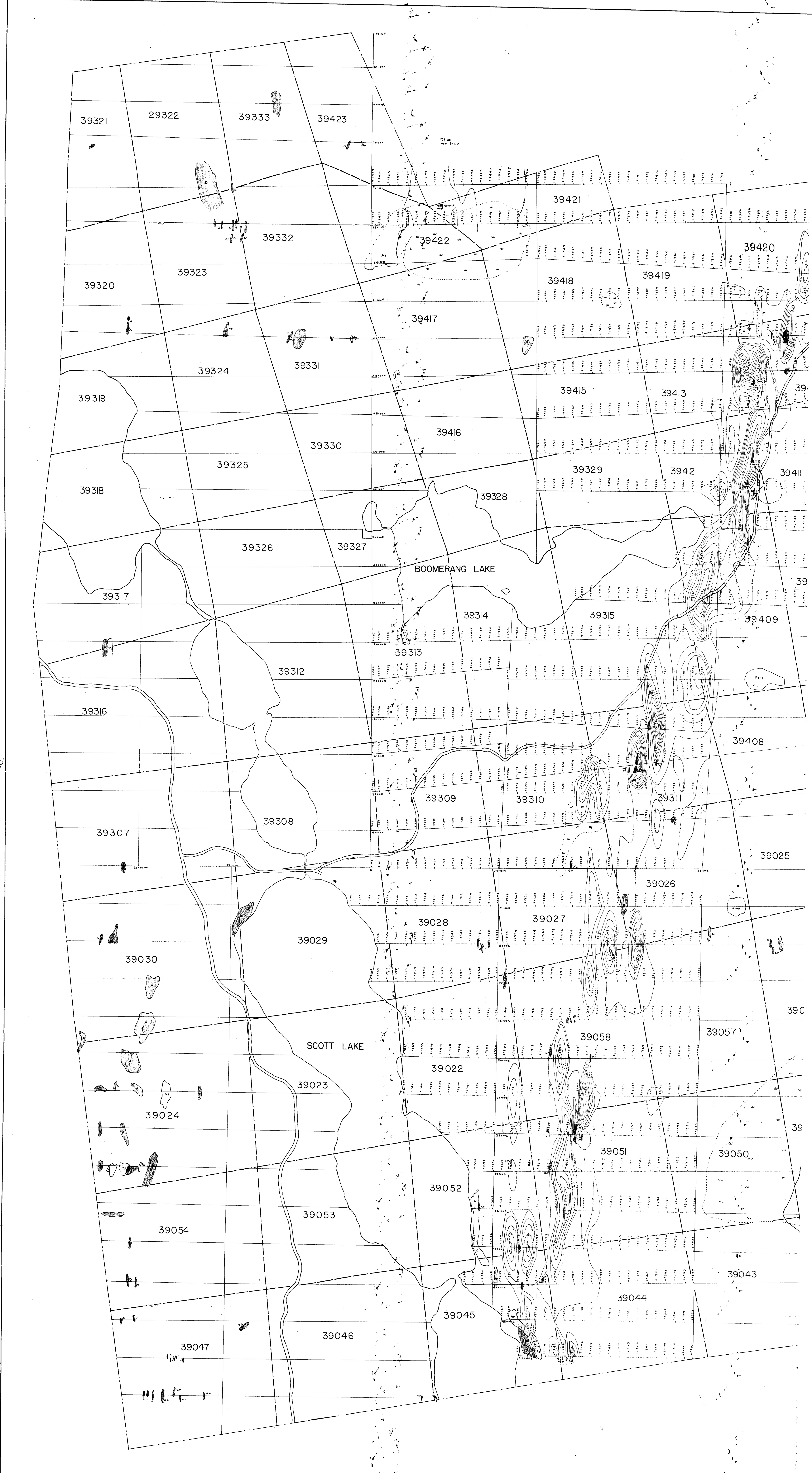
From the geological data alone, the structural setting is yet very vague. The general dip and strike of the formations are quite consistent over the whole area. They are respectively of  $60^{\circ}$  east to vertical and of due north to  $N30^{\circ}E$ .

The iron formation seems to be broken into three main sections by assumed faults in north-west direction. Those faults may be of secondary order and strike in a parallel direction to a regional fault probably indicated by a succession of lakes trending in a north-west direction ( $N25^{\circ}W$ ), i.e. Scott Lake, Marceau Lake and Triple Lake.

Sincerely yours,

Halet, Broadhurst & Ogden,

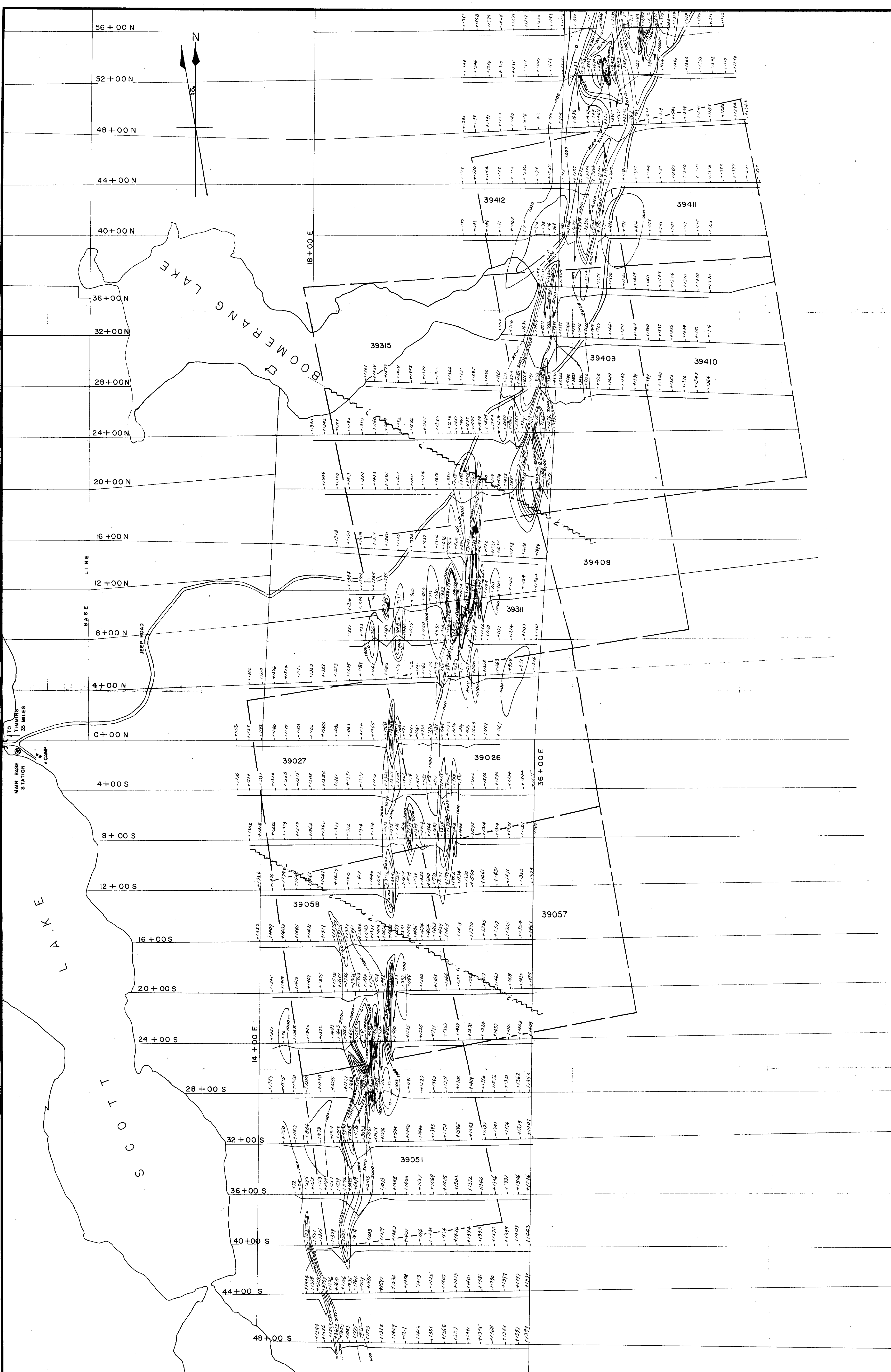
*J. Gauvin*  
J. Gauvin, P. Eng.



- |                |                 |             |                      |                                       |       |
|----------------|-----------------|-------------|----------------------|---------------------------------------|-------|
| GRANITE        | DIORITE         | ANDESITE    | MAGNETITE            | VERTICAL MAGNETIC INTENSITIES (GAMMA) | ROAD  |
| APLITE         | GABBRO          | TUFF        | PYRRHOTITE           | DIP & STRIKE OF BEDDING, PILLOWS      | SWAMP |
| SYENITE        | QUARTZ PORPHYRY | AGGLOMERATE | ISOMAGNETIC CONTOURS | CREEK                                 |       |
| QUARTZ DIORITE | RHYOLITE        | PYRITE      |                      |                                       |       |







LEGEND

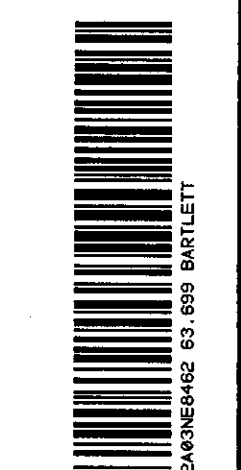
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VERTICAL MAGNETIC INTENSITIES IN GAMMAS  
SCALE OF PROFILE: 1 INCH = 10,000 GAMMAS

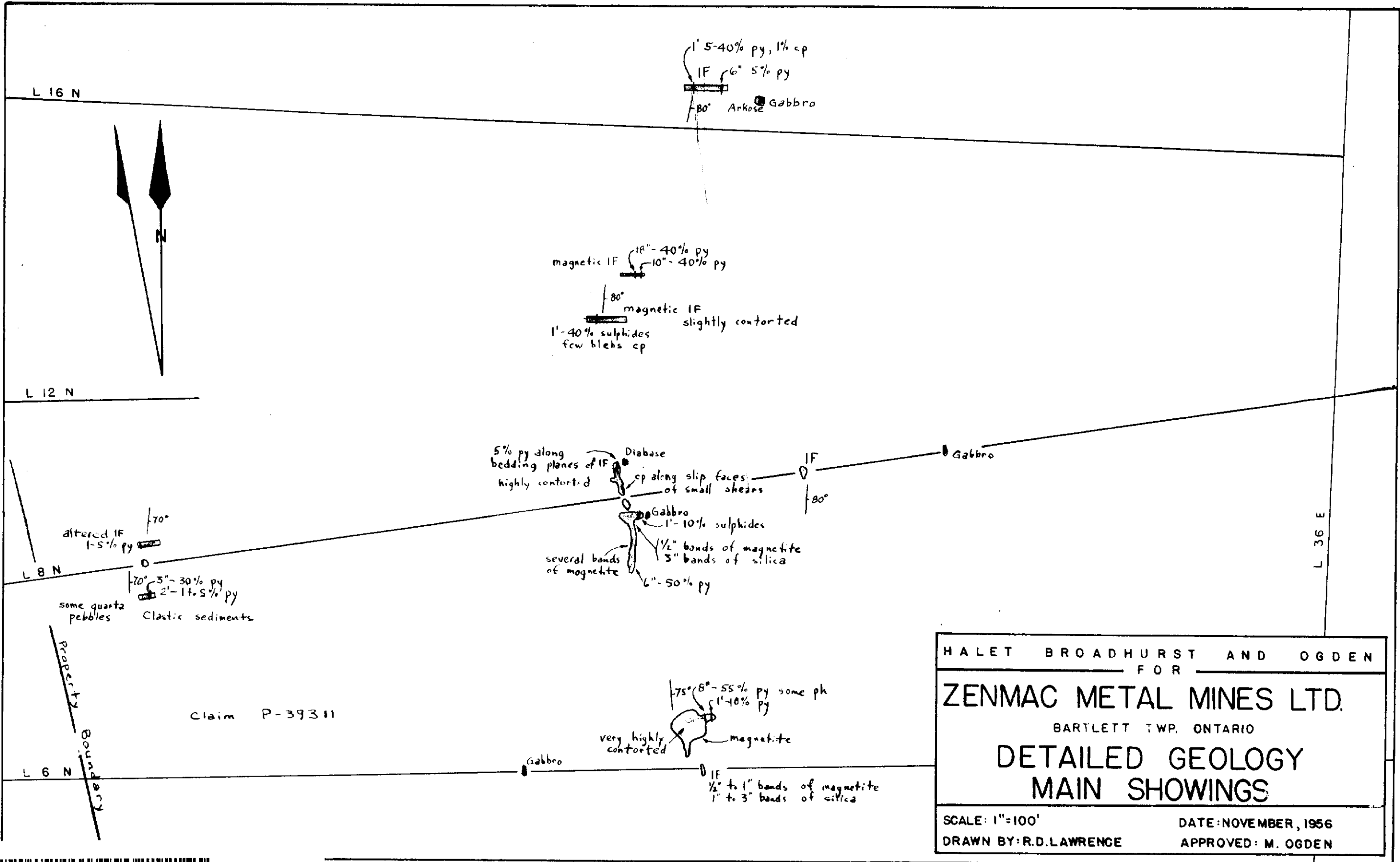
ISOMAGNET CONTOURS

HALET BROADHURST AND OGDEN  
FOR  
ZENMAC METAL MINES LTD.  
BARTLETT TWP. ONTARIO  
MAGNETOMETER  
SURVEY  
SCALE: 1 INCH = 300 FEET  
DATE: JAN. 5, 1957  
DRAWN BY: LAWRENCE  
APPROVED: OGDEN

63-699







HALET BROADHURST AND OGDEN  
FOR  
**ZENMAC METAL MINES LTD.**  
BARTLETT TWP. ONTARIO  
**DETAILED GEOLOGY  
MAIN SHOWINGS**

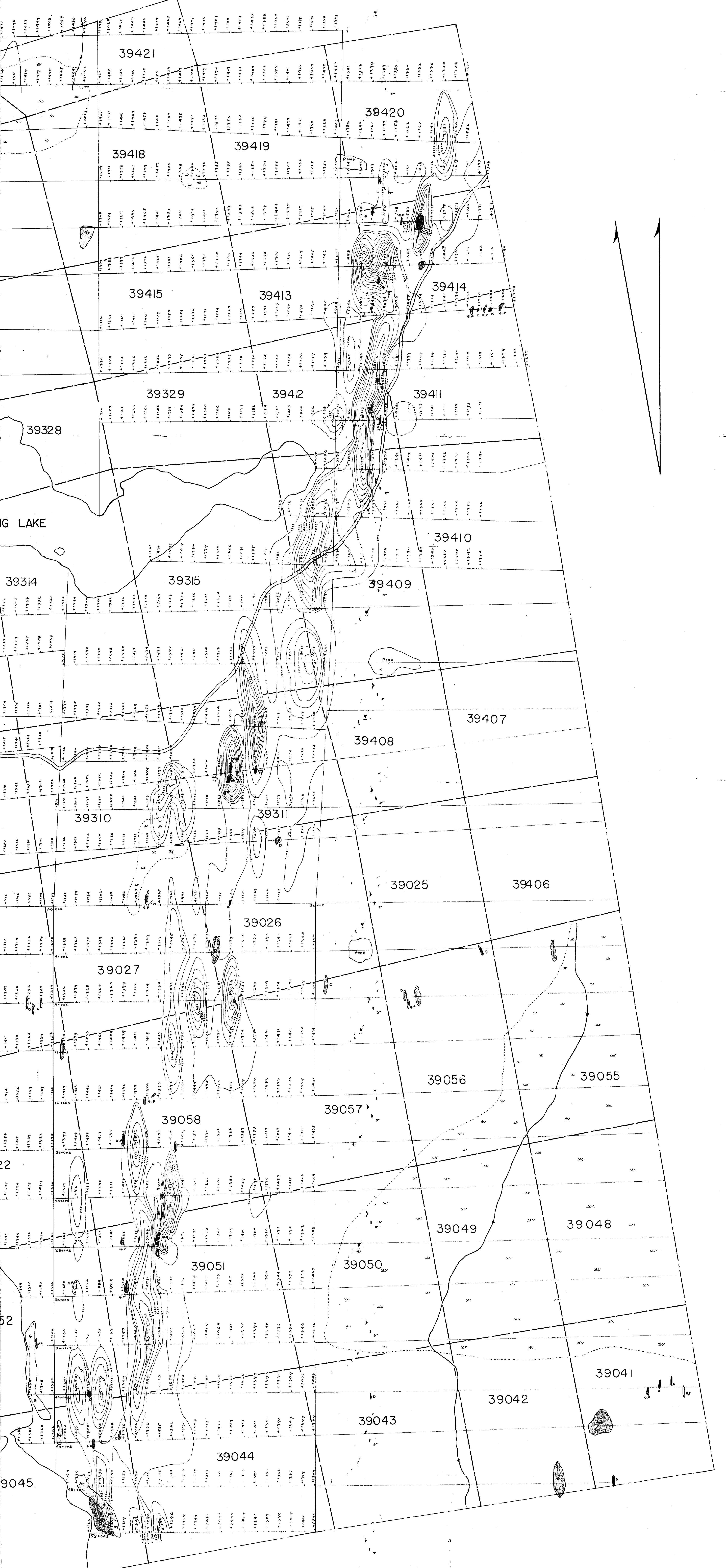
SCALE: 1"=100'      DATE: NOVEMBER, 1956  
DRAWN BY: R.D. LAWRENCE      APPROVED: M. OGDEN



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ZENMAC METAL MINES LTD.  
 BARTLETT TWP. ONT.  
 GEOLOGICAL & ISOMAGNETIC CONTOUR MAP  
 SCALE : 1 INCH = 300 FEET  
 JANUARY 56 J. GAUVIN 63-699

VERTICAL MAGNETIC INTENSITIES (GAMMAS)  
 ROAD  
 SWAMP  
 CREEK  
 ISOMAGNETIC CONTOURS

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