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THREE BROTHERS MINING EXPLORATION LIMITED

Garrison Township, Ontario

Preliminary Magnetometer Survey

March - April, 1960

INTRODUCTION

This report is based on the results of a detailed magnetometer survey carried out on part of the 17 claim property of Three Brothers Mining Exploration Limited, in Garrison and Harker Townships, Ontario. The survey work was done during the period March 17 to April 11, 1960.

The purpose of the survey was to outline the Destor-Porcupine fault zone which is believed to traverse the northern part of the property, and to locate the granite-greenstone contact south of the fault zone. Since there are no outcrops on the property, a magnetometer survey provides the best means of interpreting the geological structure.

The fault zone has been intersected by drilling on several properties to the west, and in one hole on the Three Brothers property, drilled by the previous owners, Morningdale Mines Limited.

SUMMARY

A magnetometer survey was conducted on the northern part of the Three Brothers property in Garrison and Harker Townships in March and April, 1960. The survey outlined approximately the contact of a granite body and revealed an area of high magnetic intensities between the granite contact and the Destor-Porcupine fault zone. A cross-fault in the northeastern part of the property was also interpreted from the results of the survey.

It has been recommended that any further work should be directed toward investigating the cross-fault and areas of highest magnetic susceptibilities.

PROPERTY

The Three Brothers claim group consists of 17 mining claims, numbered L-70815 to L-70831 inclusive, situated in the northeastern part of Garrison Township, and the northwestern part of Harker Township, five of the claims

being in Harker. The claims are easily accessible via highway No. 101 which runs east from Matheson to the Quebec boundary. The northernmost claim is approximately 500 feet south of the highway on the Garrison-Harker Township line.

GEOLOGY

The central part of Garrison township is occupied by a granite dome, surrounded by volcanics, and bounded on the north by the Destor-Porcupine fault zone. Immediately north of the fault lies a belt of early Precambrian sediments and volcanics, and basic dikes and sills of several ages. For detailed descriptions of the rock types and the geology, the reader is referred to O.D.M. Report No. 58, part 4, 1949, by J. Satterly.

The Destor-Porcupine fault zone has been the centre of most of the activity in the area, although it is mostly drift covered. The fault has been intersected by many drill holes across the width of the township. The apparent strike of the zone is about $N 70^{\circ} E$ and the dip is $75^{\circ} N$. Several N-S cross faults have also been encountered. The main fault zone consists of a complex of alternating talc-chlorite schist, green carbonate, felsite, and porphyry with remnants of unaltered lava and narrow interbeds of sediments.

Underground work on the Garrison property outlined several veins bearing low gold values, but the occurrences were found to be irregular and patchy.

FIELD WORK

Picket lines were cut at 400 foot intervals, normal to an east-west base line on the northern part of the Three Brothers property. The instrument employed in the magnetometer survey was a Sharpe A-2 magnetometer of the Schmidt type, with a sensitivity of 20 gammas per scale division. Readings were taken at 100 foot intervals along the picket lines. A total of 351

readings were taken, and approximately 8 miles of line cut during this survey. Work was very difficult due to the dense bush and poor snow conditions in April. As a result the remainder of the property was not surveyed.

The survey covered the 10 claims numbered L-70815 to 821 inclusive, and L-70824, 829, and 830.

DISCUSSION OF RESULTS

The accompanying plan of the magnetic survey shows the readings in gammas, with contours at 500 gamma intervals. A colour system has been used to indicate the areas of different magnetic intensity. The approximate location of the Destor-Porcupine fault zone has also been indicated on the map.

A considerable variation in the magnetic intensities can be seen in the area immediately south of the fault zone, marked by a series of magnetic "highs" in the order of 6,000 gammas. This occurs north of the assumed granite contact, and may be due to the proximity of the fault and the granite intrusive, which would result in a zone of disturbance and alteration. It is also possible that the magnetic anomalies could be caused by remnants of the sediments which occur north of the fault zone, and contain bands of iron formation. Another possibility is the presence of a basic intrusive, such as serpentized peridotite, which also occurs north of the fault zone.

The presence of a cross-fault is indicated by a marked displacement of the magnetic anomaly at 8 N on lines 8 W and 12 W. The fault is believed to extend from 16 W, 10 N, in a southeasterly direction to 4 E, 4 N. Since very few of the known cross-faults in this area have been thoroughly explored, this zone could be a favourable area for further exploration.

Due to the lack of outcrops on the property, the exact location of the Destor-Porcupine fault zone is not known. One hole on the Morningdale property intersected a width of 400 feet of green quartz-carbonate rocks and talc-chlorite schists. Beyond this point the position of the main fault zone

is not clear, but is assumed to lie immediately north of the high magnetic anomalies as shown on the maps.

CONCLUSIONS AND RECOMMENDATIONS

The magnetometer survey has helped to indicate the position of the granite-greenstone contact and the major fault zone to the north of this contact. Between these structural features, a series of high magnetic intensities was outlined, the cause of which is unknown. The anomalies may have been caused by alteration of the rocks caused by the fault movement and the intrusion of the granite, or they may be due to inclusions of the iron bearing sediments found north of the fault zone. A third possibility is the presence of a basic intrusive such as the peridotites found to the northwest.

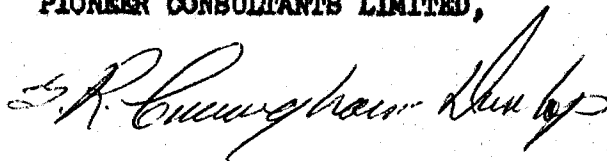
An apparent cross fault was outlined by the survey, striking in a southeasterly direction near the east end of the property. This region appears to be the most promising for further exploration, and it could be tested only by diamond drilling. The depth of overburden on the property is unknown, and could make drilling difficult.

It is recommended that any further work on this property should be designed to test by drilling the magnetic anomaly which extends from 24 W, 0 N to 16 W, 3 N, and the assumed cross-fault at 12 W, 9 N.

The possibility of locating sulphide bodies in these areas should not be overlooked.

Respectfully submitted,

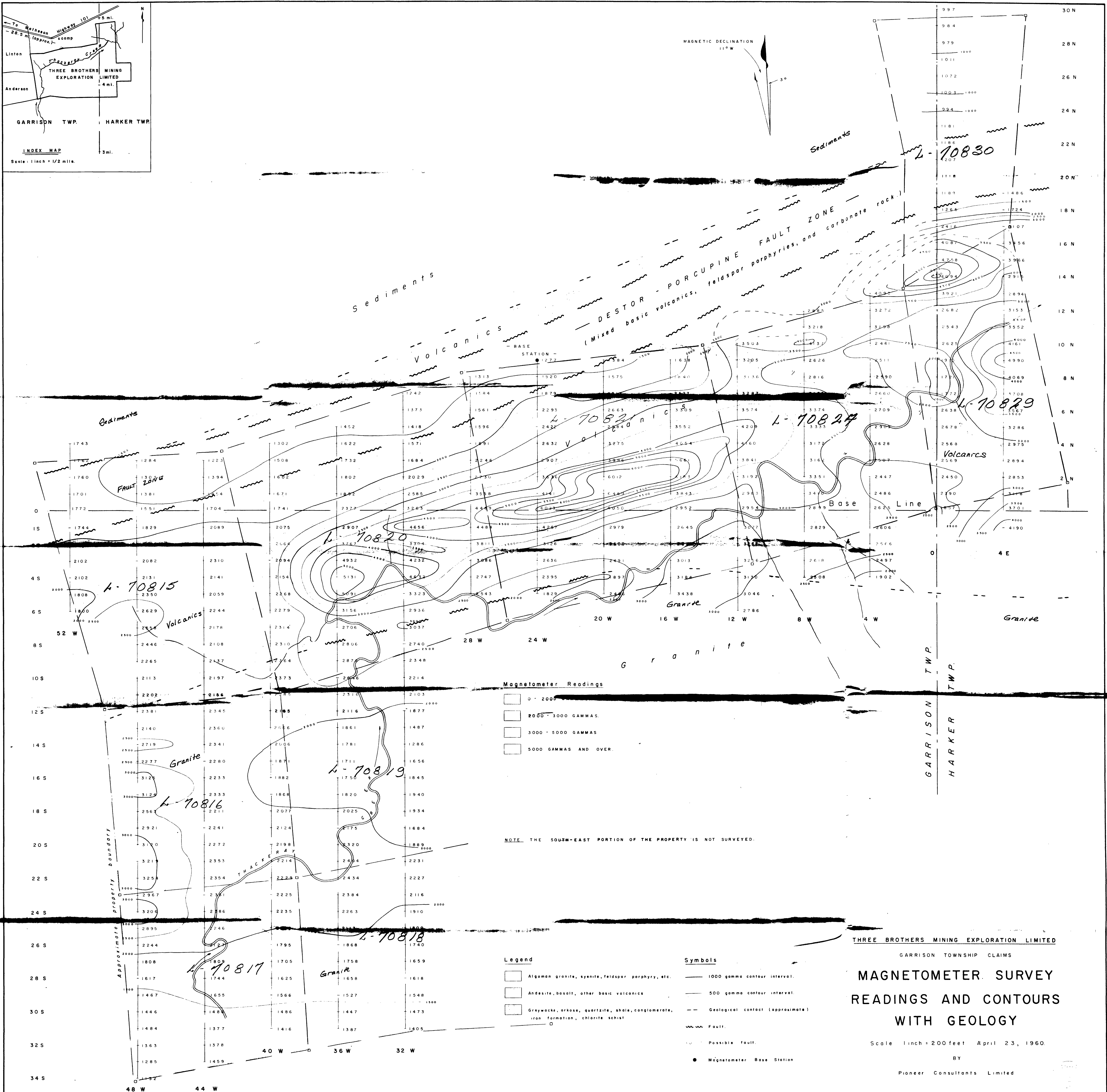
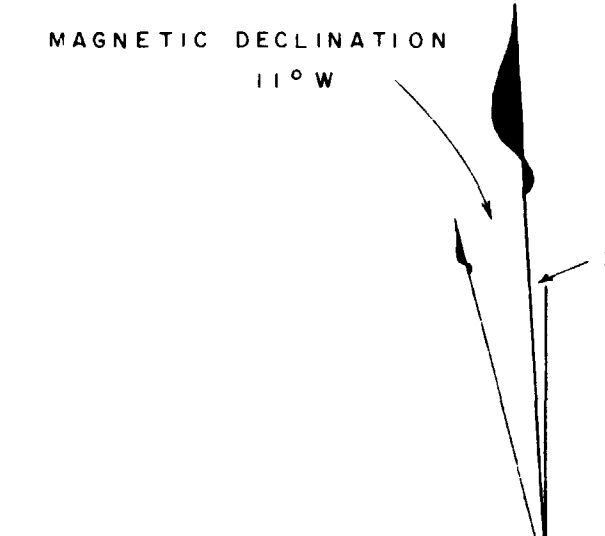
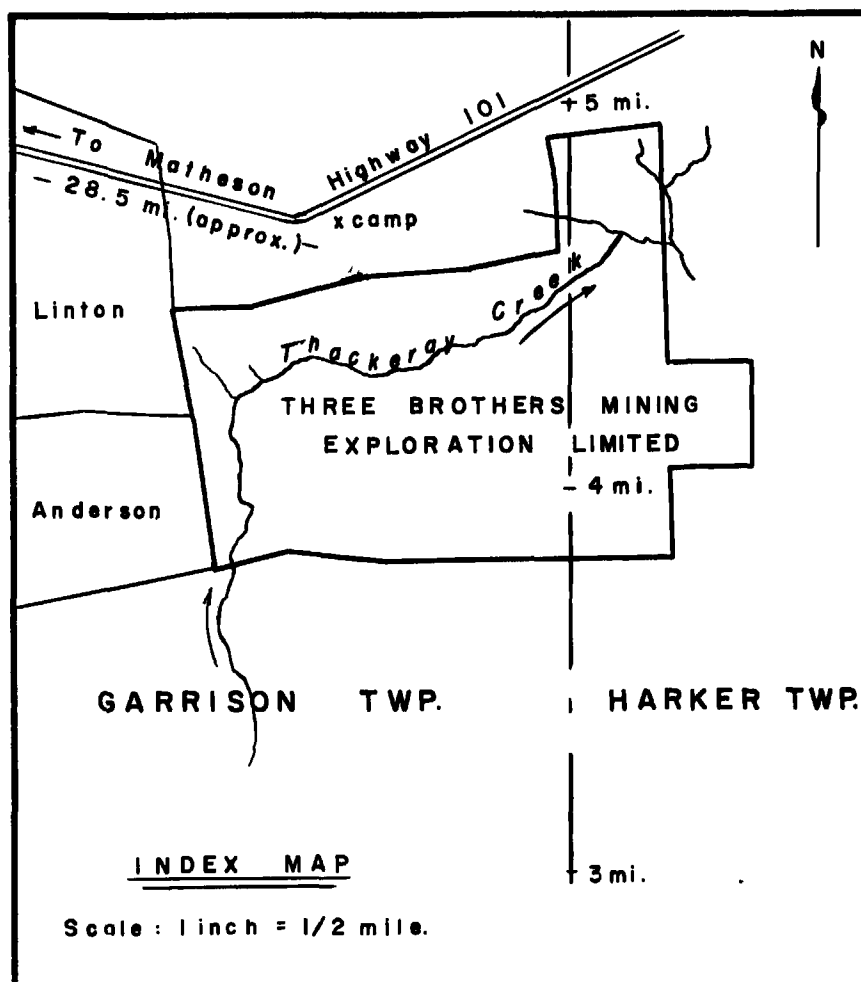
PIONEER CONSULTANTS LIMITED,



G. R. Cunningham-Dunlop, P. Eng.

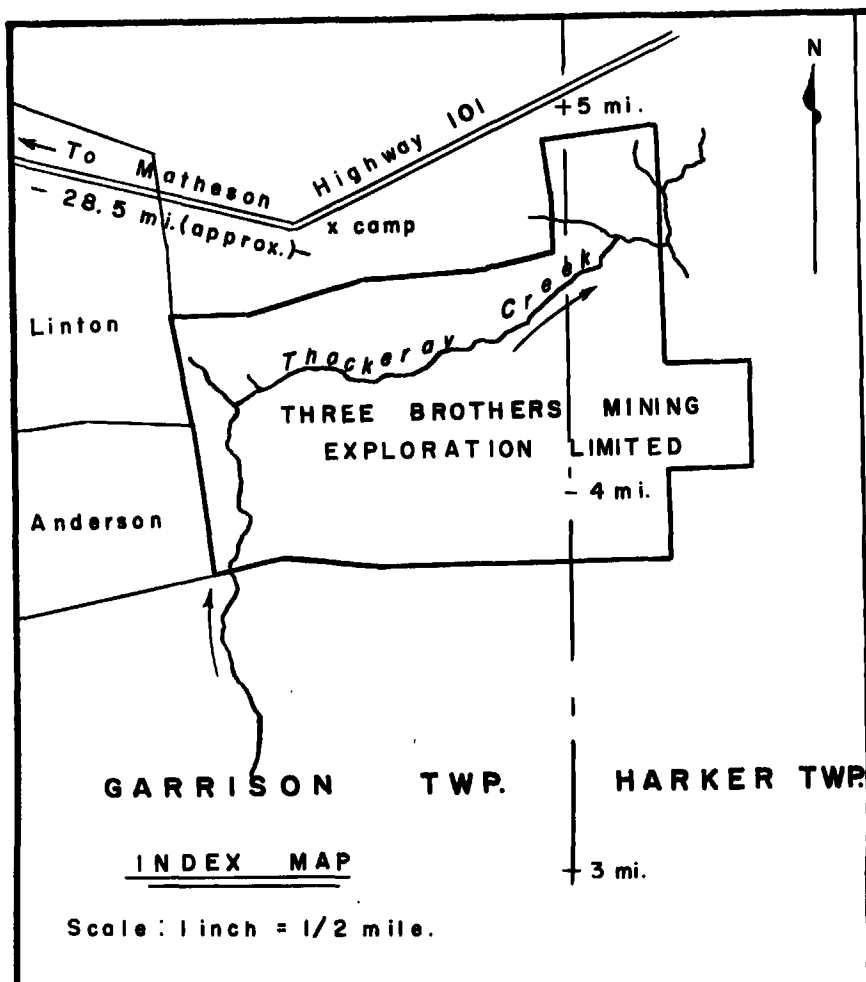
Haileybury, Ontario,

June 10, 1960.



THREE BROTHERS MINING EXPLORATION LIMITED
 GARRISON TOWNSHIP CLAIMS
**MAGNETOMETER SURVEY
 READINGS AND CONTOURS
 WITH GEOLOGY**
 Scale 1 inch = 200 feet April 23, 1960.
 BY
 Pioneer Consultants Limited

H. Cunningham



MAGNETIC DECLINATION
11° W

Sediments

Volcanics

DESTOR - PORCUPINE FAULT ZONE
(Mixed basic volcanics, feldspar porphyries, and carbonate rock)

Granite

L-10830

L-10821

L-10824

L-10829

L-10820

L-10815

L-10819

L-10816

L-10818

L-10817

Magnetometer Readings

- 0 - 2000 GAMMAS
- 2000 - 3000 GAMMAS
- 3000 - 5000 GAMMAS
- 5000 GAMMAS AND OVER

Legend

- Algonian granite, syenite, feldspar porphyry, etc.
- Andesite, basalt, other basic volcanics
- Greywacke, arkose, quartzite, shale, conglomerate, iron formation, chlorite schist
- Geological contact (approximate)
- Fault
- Possible fault
- Magnetometer Base Station

Symbols

- 1000 gamma contour interval
- 500 gamma contour interval
- Geological contact (approximate)
- Fault
- Possible fault
- Magnetometer Base Station

NOTE: THE SOUTH-EAST PORTION OF THE PROPERTY IS NOT SURVEYED.

THREE BROTHERS MINING EXPLORATION LIMITED

GARRISON TOWNSHIP CLAIMS

MAGNETOMETER SURVEY
READINGS AND CONTOURS
WITH GEOLOGY

Scale 1 inch = 200 feet April 23, 1960

BY

Pioneer Consultants Limited



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