010

REPORT ON THE SELF POTENTIAL SURVEY OF

BAGAMAC MINES LIMITED

CONNAUGHT TOWNSHIP PROVINCE ONTARIO



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REPORT ON THE SELF POTENTIAL SURVEY OF BAGAMAC MINES LIMITED

Connaught Township Province Ontario.

SUMMARY

The property of Bagamac Mines Limited in the Township of Connaught has been surveyed geophysically. A magnetometer survey was used to select areas of structural significance. These areas were surveyed electromagnetically in an effort to detect sulphide mineralization. As a check on the electromagnetic results some self potential profiles have been taken.

The results of the surveys correlate well and indicate that sulphide mineralization on the selected blocks is disseminated, with no large sized concentrations possible.

Two diamond drill holes have been recommended to test, possible structural features and obtain samples to assay for gold. These drill hole locations are on Claim 8876 and Claim 8610.

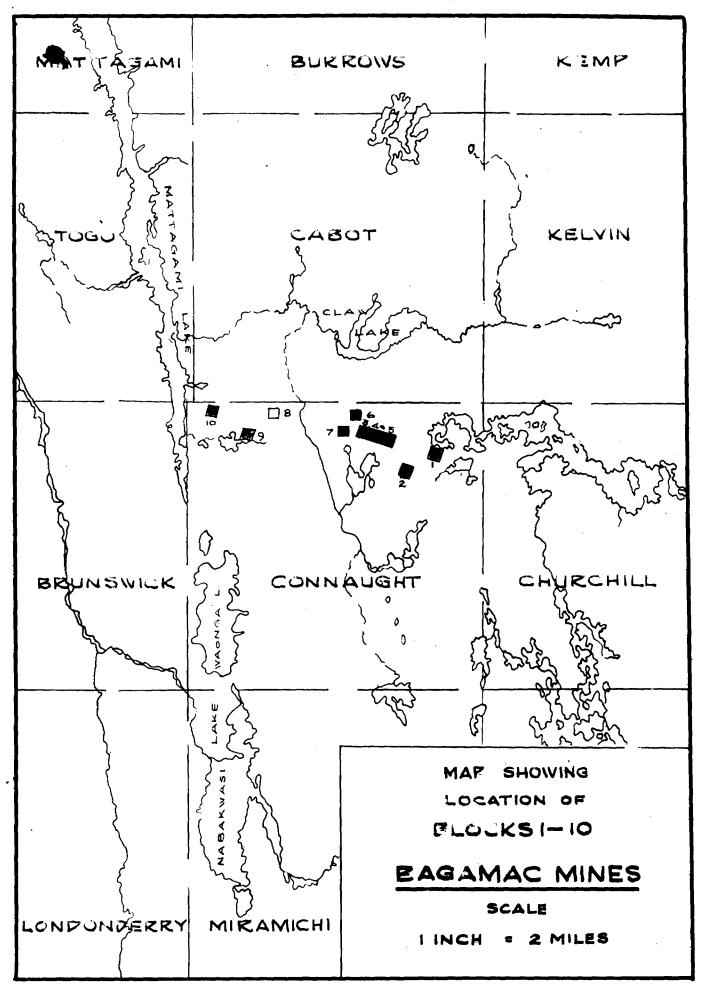


FIG. 1

INTRODUCTION

The property of Bagamac Mines Limited is situated in the Township of Connaught in the Province of Ontario. It consists of 124 claims along the northern boundary. Cabot Township adjoins the Bagamac property to the north.

A survey was conducted by means of a vertical magnetometer in the months of April, July and August in 1947. Forty claims were surveyed in detail with picket lines every 300 feet. The remaining claims were surveyed in a reconnaissance manner using picket lines spaced at 600 foot intervals.

The magnetic results were interpreted with the aid of outcrop information. These interpretations suggested ten blocks to be of sufficient complexity to warrant further exploration. In the months of May and June 1949, an electromagnetic ratiometer survey was conducted over the selected blocks in an effort to find possible sulphide mineralization. The results of this survey are described in Report No. 253 of Mining Geophysics Corporation.

The recommendations of the above report included the suggestion that short self potential profiles be run as a check on some of the anomalies obtained. Accordingly, in the month of August 1949 S. L. Spafford and T. G. Robinson of Mining Geophysics Corporation ran short profiles over selected electromagnetic anomalies.

The following report describes the results obtained.

GENERAL GEOLOGY

The ground geology has been treated fully in Report No. 242A of Mining Geophysics Corporation Limited.

GEOPHYSICAL SURVEY

The self potential method was used in this survey.

This method depends on the following conditions.

Ground waters and oxygen in the overburden oxidize sulphides which would normally outcrop, if the overburden were removed. This chemical reaction produces a natural battery and electric currents flow in the subsurface. These currents may be detected by the variation of potential on the surface. The self potential survey consists of taking these measurements of potential.

The disadvantage of a self potential survey are three-fold. The first is, the sulphides must be accessible to oxidizing ground waters, and secondly the overburden should not exceed 75 feet. Finally, anomalies may be obtained from graphite in the rock as in resistivity surveys.

These limitations are not too serious in this case since the overburden is not too deep. The anomalies due to graphite may, in most cases, be discounted due to the fact that such anomalies are usually higher than those found over sulphides.

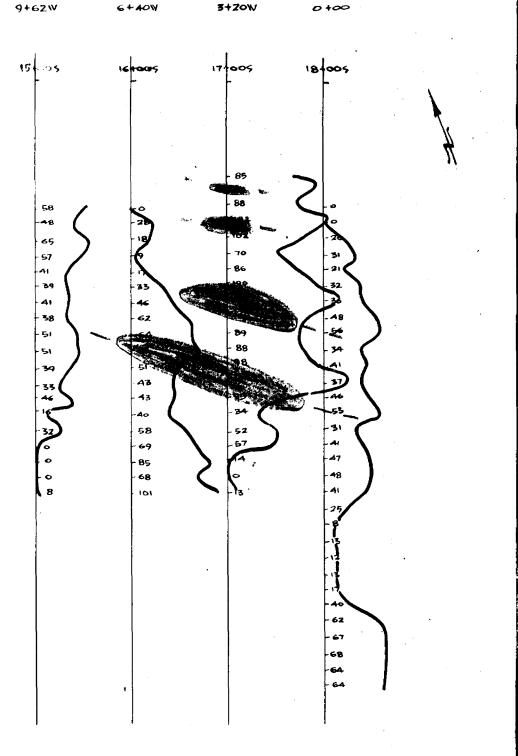
that it will detect good conducting clay stringers in the overburden. Since the self potential method is not influenced by this type of variation a comparison of the results from two types of survey should delineate electromagnetic anomalies of this source. This has been the purpose of this survey.

Potential differences were measured between fifty foot stations. By adding these potential differences a self potential profile was obtained.

The following is a discussion of the results.

Block 1:

In Block 1 there is a good correlation between the electromagnetic and self potential results. The self potential anomalies



BLOCK Nº 2



FROFILE SCALE-I"=100 MILLIVOLTS

are not large, however, and they appear to be caused by local and shallow deposits of sulphides. Numerous outcrops in the vicinity would tend to indicate that this is the case, and some disseminated sulphides might be expected.

Block 2:

Four profiles have been run along the existing picket lines of Block 2. The results were not sufficiently promising to warrant the running of more closely spaced lines, however, a fair correlation exists between the electromagnetic results and the self potential results.

over the Mataris showing. Two other anomalies of the same order of magnitude were found 250 and 500 feet north of the Mataris showing. The anomaly at 500 feet north was coincident with an electromagnetic anomaly. It can be continued in a general northwest direction. The amount of mineralization would appear to be quite small and localized, and of about the same grade as now present at the Mataris showing.

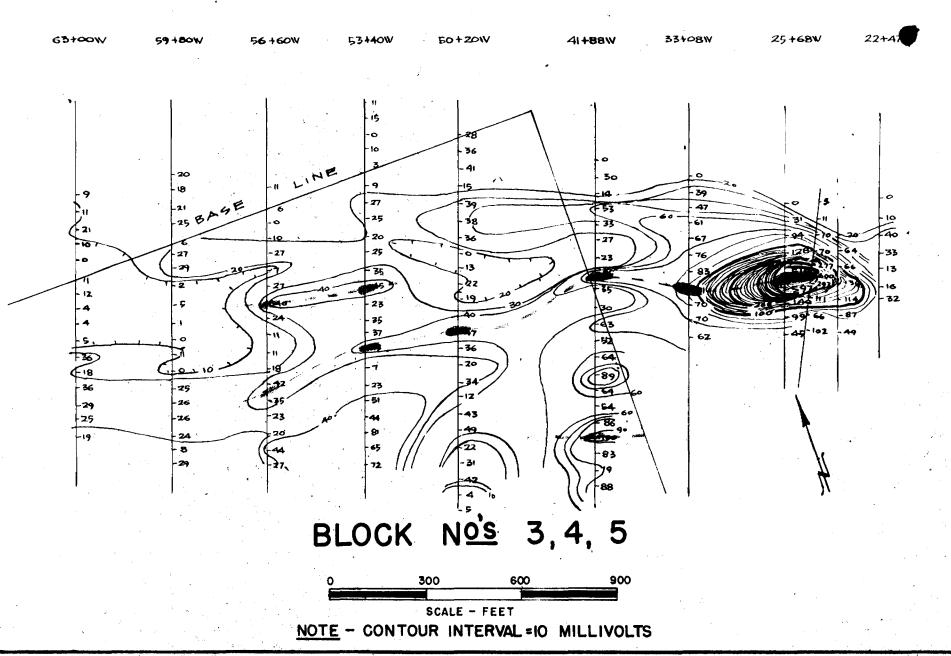
An anomaly is found on the south end of Line 0 + 00.

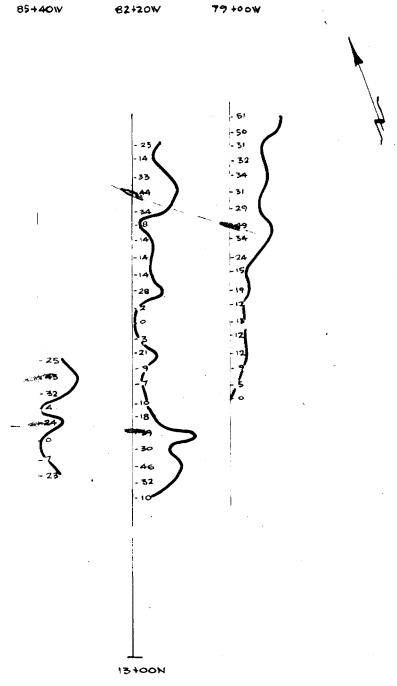
There is some correlation with the electromagnetic data. The anomaly, however, is small and of doubtful economic interest.

Blocks 3, 4, and 5:

Several profiles have been run in this area to check anomalies detected by the electromagnetic survey. There is a fair correlation between the results obtained in the two surveys. The self potential anomalies, however, are rather small and indicate that the sulphide mineralization is disseminated.

One large anomaly apparently 200 feet long is encountered on Line 33 + 08 W. The magnitude is of such a size (600 millivolts) to suggest that it is probably due to graphite in the sediments. The depth

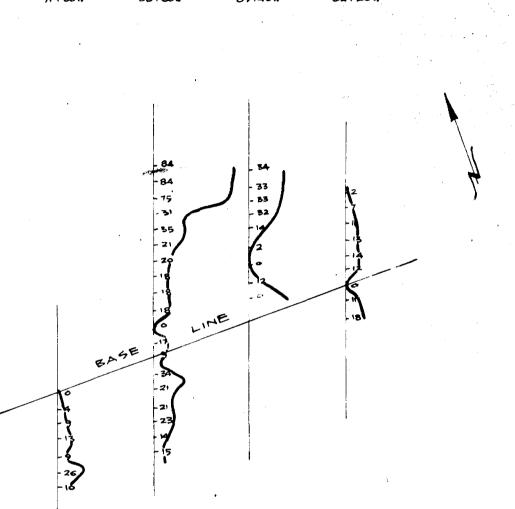




BLOCK Nº 6



PROFILE SCALE - 1" = 100 MILLIVOLTS



BLOCK Nº 7

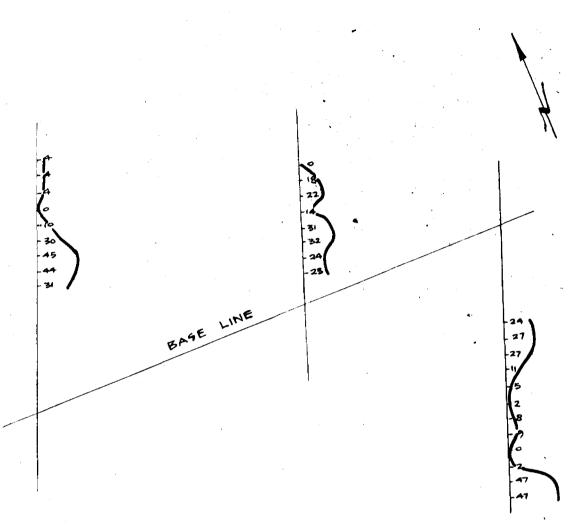


PROFILE SCALE - 1 100 MILLIVOLTS





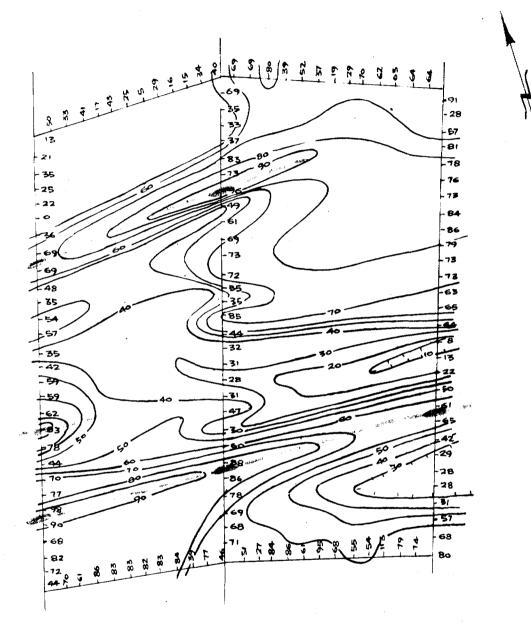
99+20W



BLOCK Nº 9



PROFILE SCALE- I" = 100 MILLIVOLTS.



BLOCK Nº 10



NOTE - CONTOUR INTERVAL IO MILLIVOLTS

appears to be quite shallow at this point, and the mineralization might be uncovered by stripping.

Block 6:

In Block 6 two small anomalies were detected by the electromagnetic method. These were checked by means of the self potential method. The anomalies found were quite small, the amount of sulphide mineralization is probably negligible.

Blook 7:

In Block 7 a small amount of mineralization has been detected. This mineralization has affected the self potential results.

Three hundred feet east an anomaly of 80 millivolts has been found. Still further east a small electromagnetic anomaly exists. The mineralization then can be assumed to extend further east.

Block 8:

Block 8 was not surveyed.

Block 9:

Anomalies were found by the electromagnetic method. They were not considered to be significant. Short self potential profiles uncovered some anomalies, too small to be of any economic interest.

Block 10:

Block 10 produced electromagnetic anomalies of about three times the magnitude of those found over the Mataris showing. They coincided with magnetics which appeared interesting because of one interpreted drag fold. Self potential readings were accordingly taken over this section.

The anomalies due to the electromagnetic results are spread out over a large part of Block 10. Self potential anomalies covering approximately the same limits have been found. These anomalies, however, are of small magnitude, the largest being 90 millivolts. Their trends bear

some relationships to the interpreted fold (see Figure 9). The overburden to the west of this point is about 50 feet deep, and decreases towards the west. A concentration of sulphides should produce an anomaly of some magnitude at this depth.

The results are in good agreement and indicate that the mineralization is disseminated.

CONCLUSIONS

A few self potential profiles have been run to check or substantiate the results of an electromagnetic survey. These areas were originally chosen to be the most suitable for localization of sulphides by means of magnetic results.

The anomalies obtained in both the electromagnetic and the self potential surveys indicate the presence of the known sulphides. It is concluded that similar anomalies found in areas covered by overburden are most likely due to mineralization of the same type and concentration; namely, small and scattered local concentrations.

The anomalies in Blook 10 originally thought to be the most promising from the electromagnetic results are probably due to minor amounts of mineralization; however, due to their association with interesting structure, the zone should be sampled and assayed for gold.

This trend is accentuated by the fact that the diabase dikes deviate from a north-south strike along it. Diabase dikes sometimes change strike where they cross shear zones. The disseminated sulphides may lie along such a zone of shearing, roughly marked by the east-west magnetic belt interpreted as diabase in the original interpretation.

RECOMMENDATIONS

The possibility of finding sulphide deposits of any size in the area investigated is negligible. Further exploration should be confined to sampling and assaying for gold mineralization.

It is recommended that -

- Diamond drilling be done on Claim 8876 to obtain samples of the mineralization to assay for gold, and to test the structure postulated from the results of the geophysical surveys.
- 2. Trenching be done on Claim 8650 to sample the sulphide mineralization and assay for gold.
- 3. Diamond drilling be done on Claim 8610 to sample the cause of the large self potential anomaly and test for the presence of a shear zone. The drill should be stopped upon intersection of a northsouth dike.

Proposed Diamond Drilling:

D.D.H. No. 1:

Collar: Line 167 + 24 W, 10 + 00 N (Baseline # 2)

Direction: N 20° E (along picket line)

Dip: 45°
Slope Length: 1416'
Projected Length: 1000'

Purpose: To test anomaly on Claim 8876 and 8877.

D.D.H. No. 2:

Collar: 100' east of station 17 + 00 N on line 25 + 68 W

Direction: # 20° W Dip: 45° Slope Length: 600' Projected Length: 424'

Purpose: To determine cause of large self potential anomaly and

cross-section a postulated shear.

Respectfully submitted,
MINING GEOPHYSICS CORPORATION LIMITED

N. B. Keevil

J. E. Noakes

5.44 gerphyreal

APPENDIX

Property:

Bagamac Mines Limited, situated in the Township of Connaught, Province of Ontario, comprising 25 claims,

8916-8917; 8919; 3556-57; 4102; 8598; 8599; 8602-03; 8606-07; 8610; 8613; 8650; 8652; 8654; 8656; 8695; 8697; 8698; 8870; 8871; 8876; 8877; 8900-01-02.

Dates of Survey:

Chaining and electrical measurements - August 12 to August 22, 1949 (2 men) 22 man days

Calculating, plotting, interpretation, mapping -September 1 to September 13,1949 (5 men intermittently)

Total

Baseline and Picket Line:

The original lines cut in June 1947 were used. observations were made at 100, 300, and 700 feet line spacings (in some places observations were made at 10 feet).

Miles of Line:

5.5. miles

Operators:

T.G.Robinson and S. L.Spafford

Draftsman:

M. Arnett

Geophysicist and Geologist:

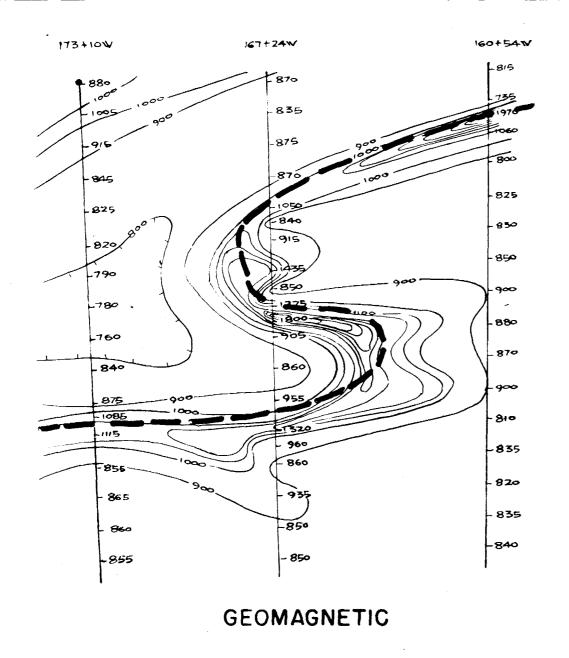
N. B. Keevil and J.E. Noakes

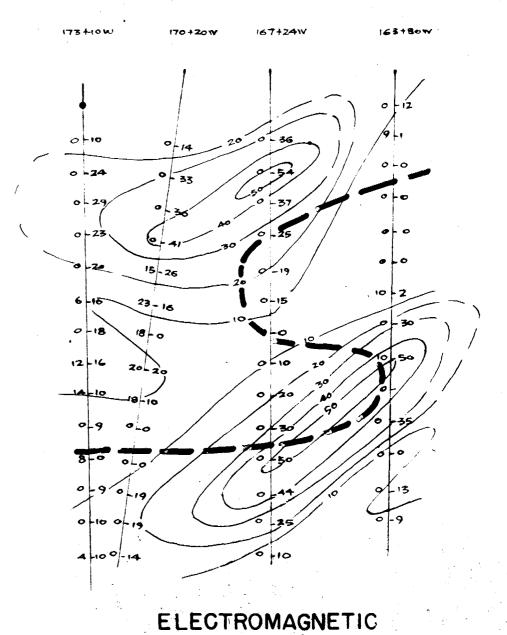
Instrument Used:

D.C.Potentiometer

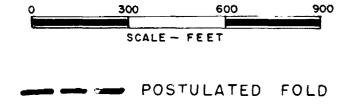
No. of Electrical Measurements:

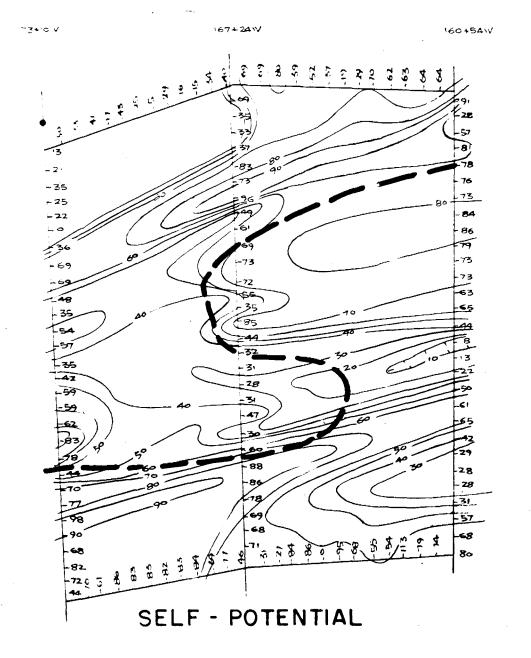
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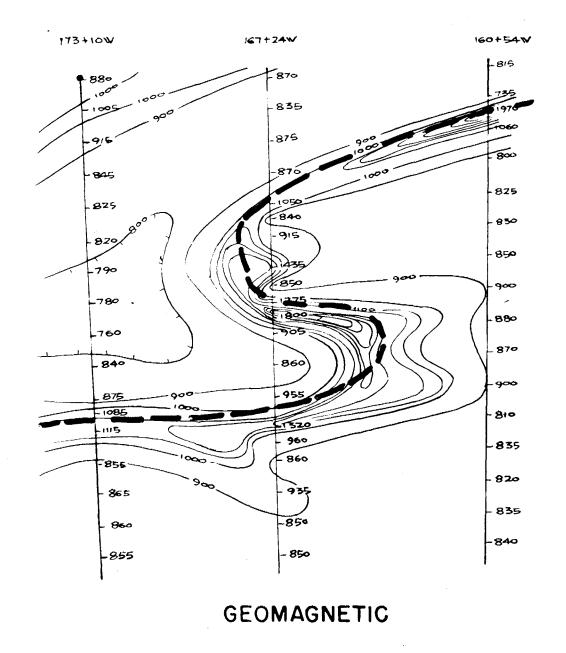




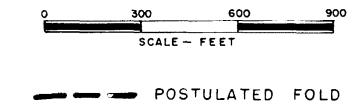
SON OF GEOMAGNETIC, ELECTROMAGNETIC F-POTENTIAL SURVEYS OF BLOCK Nº 10







COMPARISON OF GEOMAGNETIC, ELECTROMAGNE AND SELF-POTENTIAL SURVEYS OF BLOCK NO



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REPORT ON THE GEOELECTRICAL SURVEY OF

BAGAMAC MINES LIMITED

CONNAUGHT TOWNSHIP

PROVINCE ONTARIO



41011NW0445 63.104 CONNAUGHT

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REPORT ON A GEORIZOTRICAL SURVEY OF BAGAMAC MINES LIMITED

Connemight Township Province of Ontario

BUNGLARY

The claims of Bagamac Mines Limited, Commanght Township were surveyed previously both magnetically and geologically. This report describes sections which were selected from the interpretation of these surveys, and which were surveyed by means of the Electromagnetic Sationeter method.

The survey has been successful in indicating conductors which in all probability are due to sulphide mineralization. Several areas are considered to be of no further interest, and no further work is recommended on them.

The most interesting anomalies occur in the vicinity of Wire Lake where an apparent drag fold had been braced previously by magnetic methods. It is recommended that this area be surveyed in detail by the self potential method and drilled.

Other small areas have been selected as being the possible location of mineralisation, and it is renumented that these areas be tested by self potential profiles and drilling be decided upon if positive results are obtained.

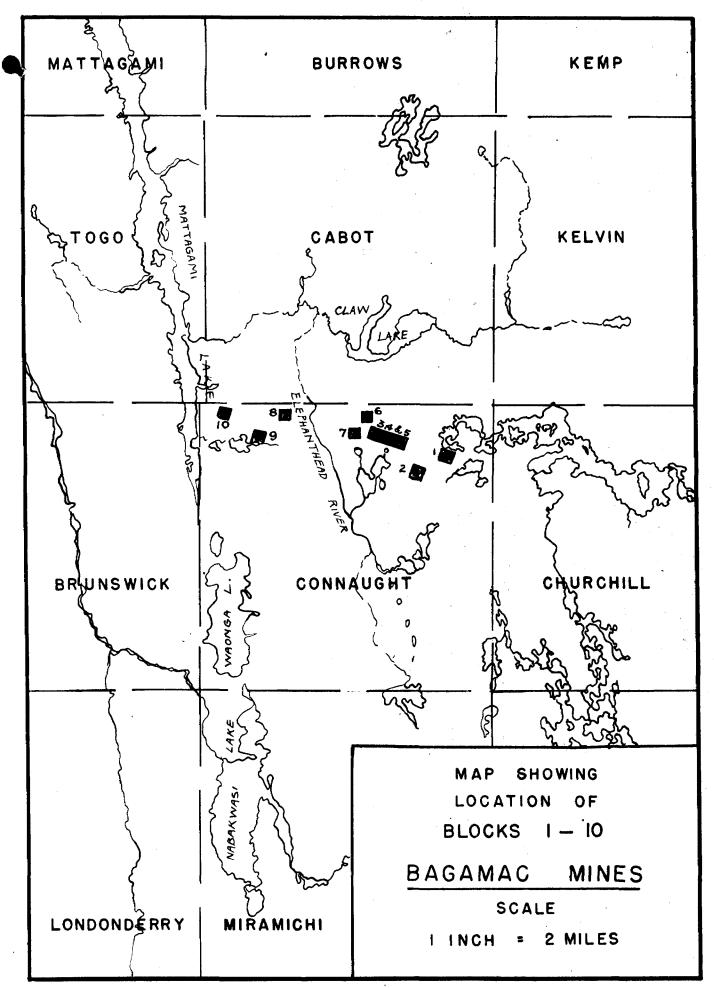


FIG. I

INTROLUCTION

The property of Bagamac Mines Limited is situated in the Township of Connaught in the Province of Ontario. It consists of 124 claims along the north boundary of the township. The township of Cabot lies to the north.

The area is covered by a thin mantle of overburden.

This mantle is of sufficient depth to cover most of the mineralization that may occur in the area. In order to extend the known geology, outline the diabase dikes, and obtain possible indications of mineralization, magnetic surveys were completed two years ago.

Measurements were taken of the vertical component of the natural magnetic field of the earth. The first survey was conducted in April 1947 over 40 claims, viz: 8596 - 8603 (inclusive); 8605 - 8613 (inclusive); 8650 - 8652 (inclusive); 8654 - 8657 (inclusive); 8697 - 8699 (inclusive); 8764 - 8765 (inclusive); 4100 - 4102 (inclusive); 3556 - 3557 (inclusive); 39264 - 39266 (inclusive); 40319 - 40320 (inclusive); and 3655.

The picket lines in this first survey were 300 feet apart with magnetometer stations every 100 feet. In July and August of the same year the survey was completed over the remaining 84 claims. The picket lines in this case were 600 feet apart, the survey being more of a reconnaissance nature.

The results of the geomagnetic survey indicated several points which were structurally complex and offered possible locations for the particular type of mineralization found in the area. The known mineralization consists of the Mataria showing on Claim TRS 3556 89/6

and mineralization in a banded iron formation on Slaim SAGE. The mineralization consists mainly of pyrite with some chalcopyrites. In addition, gold values are reported to have been obtained over 30 years ago, but the exact location of sampling is not known. Since chalcopyrite and pyrite are good conductors of electricity, recommendations were made to test the structure outlined magnetically for possible are deposition, and to trace possible extensions of mineralization already known, by masses of geoelectrical methods.

This is a natural sequence since large areas can be proved to be of little interest by cheaper and more rapid magnetic surveys.

The electrical method is then used in a follow-up program.

The method selected was the electromagnetic reticupter method, since it is more diagnostic in the case of small scattered deposits than applied potential methods:

The survey was carried out over ten small areas of interest by Mr. D. Brennan, assisted by H. Wank and G. Wilcon, in the months of May and June, 1949.

GENERAL GEGLOGY

The general geology has been breated fully in Report
No. 242A of Mining Geophysics Corporation Ltd.

GEOPHYSICAL BURYEY

The method utilised for the survey described in this report was the electromagnetic rationster method. A rather emlightening description of electromagnetic methods of this type may be found in "Geophysical Prospecting, Imperial Geophysical Experimental Survey" by Edge and Laby. The field procedure adopted in this survey is as follows:

A square loop of # 16 copper conducting cable was hald

out on the ground around the area to be examined. The sides of the loop were 1500 feet, producing a total length of wire of 5000 feet. Through the loop by means of a motor generator set, current was driven at a frequency of 1500 cycles per second. The purpose of this loop is to excite conducting material in the subsurface by means of a varying magnetic field.

This instrument consists of two coils at right angles and an electronic measuring device of special design. One coil is maintained in a horizontal field produced by the large exciting loop. A second coil was maintained in a vertical plane and measures induced currents flowing in the subsurface. Measurements were taken with the vertical coil in two directions, namely North-South and East-West.

The main disadvantage in this method is that elay beds will respond as well as sulphides. A fair conductor of large dimensions will produce an anomaly equally as well as a good conductor of small dimensions. Anomalies can be produced by topography as well as smanp areas. This method, however, manponds to small deposits. Since the topography is not generally rugged and the overburden not too deep, the method adopted is the most convenient from the point of view of speedi, expense and diagnostic properties.

All anomalies encountered then, are not significant and it is one of the objects of the interpretation to sort these out as to economic importance. For this reason a careful record was kept in the field notebook concerning the type of ground traversed as well as topographical features. In interpreting the results an attempt has been made to determine the cause of all the anomalies.

Ten blocks were laid out as being areas of possible interest and warranting electrical surveying. These have been numbered

from one to ton. The reasons for the selection of them particular areas are as follows:

Block l:

High magnetic readings which could not be readily explained by the known geology were indicated by the magnetic survey. This section was surveyed electrically in order to evaluate the possibility of the association of sulphides with these anomalous magnetic values.

Block 2:

The Materia showing which has been explored by test pits and dismond drilling is stuated in Block 2. Pyrite and chalcopyrite mineralisation is known here. It was decided to conduct an electrical survey in this locality in order to obtain results over known sulphides, and investigate the possibility of a large sulphide concentration in the immediate vicinity.

Blooks 5, 4, and 5:

The magnetic picture south of Picket lake where blocks 5, 4, and 5 are situated is very complicated. A large West-Morthwest trending diabase dike branches repeatedly in this area, and appears to intersect major north-south dikes suggesting a complicated fracture or fault system which these dikes followed. An electrical survey was made in this locality in an attempt to assess the possibility of the presence of sulphide concentrations.

Block 6:

This sestion of the property is characterised by high magnetic readings which are believed to be in part, at least, the expression of diabase dikes. An electrical survey was conducted in an attempt to determine if any of these anomalous readings indicated the presence of sulphides.

Block 7:

Banded iron formation, locally sheared and mineralized with pyrite and chalcopyrite traverses this block. An electrical survey was made in this locality to test the method over known mineralization in the area, and determine the probable extent and importance of this mineralized shear.

Blook 8:

An electrical survey was considered to be the most practical method of evaluating this section of the property which is characterized by high magnetic readings and very few rock exposures.

Blook 9:

An East-West fault (Wire Greek fault), which may be important in localizing any mineral deposits in the area, traverses this block. The magnetic survey indicated anomalies not readily explained by the known geology. An electrical survey was conducted to investigate the possibility of important sulphide mineralization in this locality.

Block 10:

A complicated magnetic picture was indicated in this area by the magnetic survey previously conducted by Mining Geophysics
Corporation. The interpretation of that survey suggested the pessibility of a drag-fold which may have been important in controlling are deposition. An electrical survey was undertaken in an attempt to locate any sulphides which might be present and thus guide any diamond drilling that would be considered.

The most instructive examples of anomalies may be found in Blocks 2 and 7. These blocks contain the Materia Showing and a

mineralised shear some respectively.

If the 6 * 40 E of Block 2 is characterised by a number of medium sized anomalies. This line was run outside the exciting loop. It will be noticed that high values were obtained on all profiles and parts of profiles outside the loop. It is questionable how much significance can be attached to these highs. They may be attributed to at least two casuses. In the vicinity of the loop, especially outside, topographical effects become more pronounced. To fulfil the theoretical considerations the exciting loop and the points of measurement must be all contained in the same plane. If the points of measurement are not in the same plane as the loop a small horisontal component due to the exciting loop may be detected. If the topography is rugged near the loop some of the high values may be attributed to this cause.

Local variations in the overburden will produce large anomalies near and outside the loop. Bump areas are believed to be a contributing cause in the case of some of the large values encountered.

examined it is found that there is a fair correlation between the magnetic profile and the electrical profile. This would suggest that not all the readings outside the loop are spurious and probably can be used in conjunction with other information. These additional readings were taken to provide data to guide interpretation of boundary effects. Use was made of these data in several instances.

In the remaining profiles inside the loop some interesting results are obtained. The presence of the magnetic disbase dikes obscure any electrical magnetic correlation, such as on profile 5 + 40 E. In the vicinity of the Mataria showing appealies have been

detected which are very likely due to mineralization. These anemalies, although not of large magnitude, produced readings which sould be measured with great sensitivity by the instrument. They can be used as a guide to illustrate the size of anomaly to be expected over other deposits in the area of the size and concentration of the Materia showing.

The anomalies which are considered significant are shaded on the accompanying maps. It is obvious that more mineralization is indicated than has been found in the Mataris sone. These additional deposits are, however, probably small.

Inside the loop at the south end of line 0 + 00 two.

anomalies are found. These anomalies may be due to the summps occurring at this particular point, but might also be due to some mineralization.

The anomaly is considered to be of secondary importance in this block.

In Block 7 some mineralization is known to ecour. It consists of a shear some with sulphide mineralization over a width of 2 feet. This mineralization has been detected by the electromagnetic survey and has been traced under everburden further to the east. Another peak to the south can be traced across the block. This public is considered to be of the same origin as the mineralization to the morth. The results on line 75 + 80 are considered to be due to swamp and topography. It is to be noted that line 98 + 20%, outside the loop, produces no value of any consequence.

From the results over blooks 2 and 7 described above, it is obvious that faith may be placed in the electromagnetic results to give positive evidence of mineralization in this area. By means of comparison with these results the evaluation of anomalies in the remaining blocks can be more easily followed. The remaining blocks are treated in chronological order below.

In Block I only two sets of anomalies are considered to be of any significance. They are of small magnitude, however, and probably due to very minor sized conductors. As mentioned previously small concentrations of sulphides are susceptible to detection by this method.

The northermost trend is found to follow what has been interpreted as a diabase dike from the magnetic results. The remaining anomalies can be attributed to a variety of causes, such as topography and conducting swamp material.

Blocks 5, 4, and 5 overlap and were surveyed by means of 3 loops. In this group of results four lines occur sutside the loops, manely 12 + 60 %, 50 + 20 %, 41 + 88 %, and 9 + 62 %.

A large number of anomalies occur in these three blocks.

They may be broken into three groups of neighbouring anomalies. These anomalies are significant because they occur in the areas of more complex magnetic activity, and may bear some relation to the complicated geological picture which may be expected at these points. These interesting anomalies have been blocked out on the accompanying maps. Some large peaks were obtained outside the loop, and appear, in this case, to be oaused by swampy ground.

Block 6 has uncovered only two small anomalies. The remaining peaks on outside lines are not economically important. The anomalies considered to be due to possible mineralisation are quite small and suggest that any mineralisation is limited in extent.

Block 8 contains no large anomalies which can be considered interesting. The area is covered for the most part, by swamp and it is probably the source of the anomalies which do scour.

In Block 9 a few anomalies are found in generally flat profiles. These anomalies are interesting, but not seemmically significant. The power line causes an anomaly over a short distance on line 126 * 06 W. A large anomaly occurs on line 99 * 20 W. This anomaly is probably caused by conducting material in the fault at this point. The northermost anomaly on line 126 * 06 W corresponds to an interpreted fault. Small anomalies are found on lines 114 * 85 W and 105 * 60 W. They coincide with magnetic highs. The magnitude of the peaks is low. It is possible that the origin of the anomaly is a small shear zone.

Block 10 contains the most interesting anomalies of all the electrical work in this property. Large peaks are encountered over an area suggested by the magnetics to be of a complex nature, with possible drag-folding. The anomalies are of the order of 50 units; i.e. about two to three times the magnitude of anomalies obtained over the Bataris Showing.

a very definite pattern. They point consistently towards the area of magnetic activity (see figure 11). There is good evidence, therefore, to support the presence of a good conductor. This can be confirmed by a self potential survey which could be run in a week, and fellowing this, diamond drilling should be contemplated. (The anomalies outside the loop are of doubtful origin).

CONCLUSIONS

An electrical survey has been conducted over ground which has been outlined as of possible interest from the interpretation of previous geomagnetic and geological surveys carried out by Mining Geophysics Corporation. The electrical survey thus served the dual purpose

of substantiating the magnetic results in some cases, and ruling out possibilities in others. It has been successful in decreasing the amount of ground to be explored in detail.

oan be detected in this area by the method used. This isobvious from a study of the results over known mineralisation. The location of the mineralisation is easily discernible from the results. Since this is the case then other areas which have been suggested by this method are worth further investigation. The anomalies which have been described above as being "significant" fall into this class.

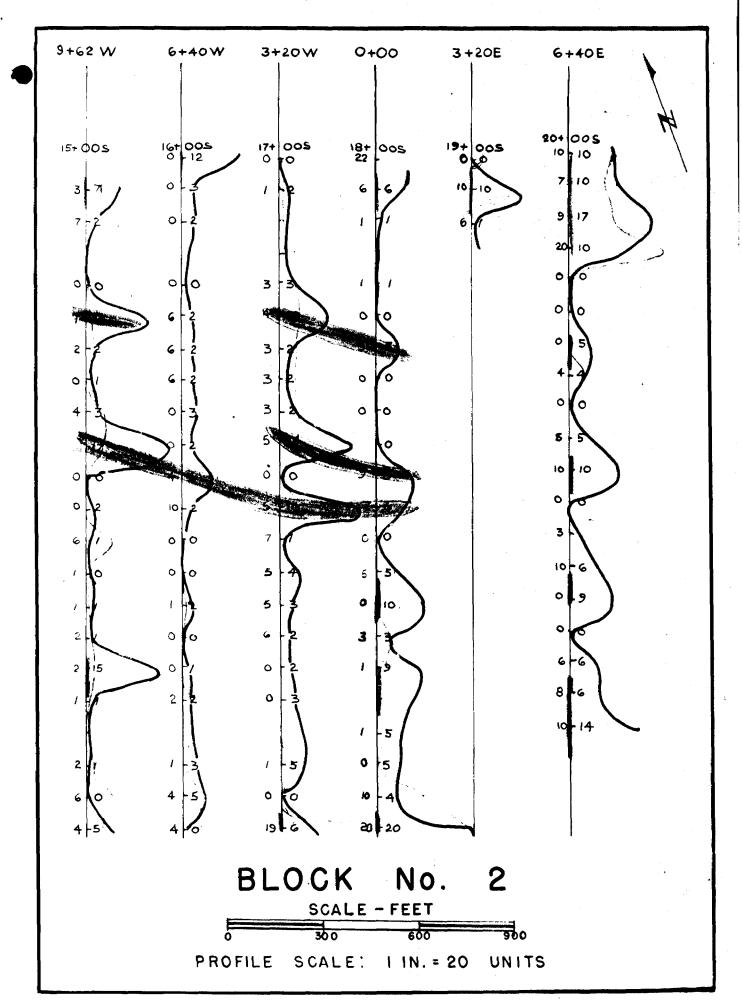
being of no importance for sulphide mineralisation. An advantage of the present method is that it will detect small bedies. This may, in some ways, be considered a disadvantage since the results may be confused by small conductors of no economic importance. It is, therefore, desirable to further check the results by means of a self-potential survey along the critical zones.

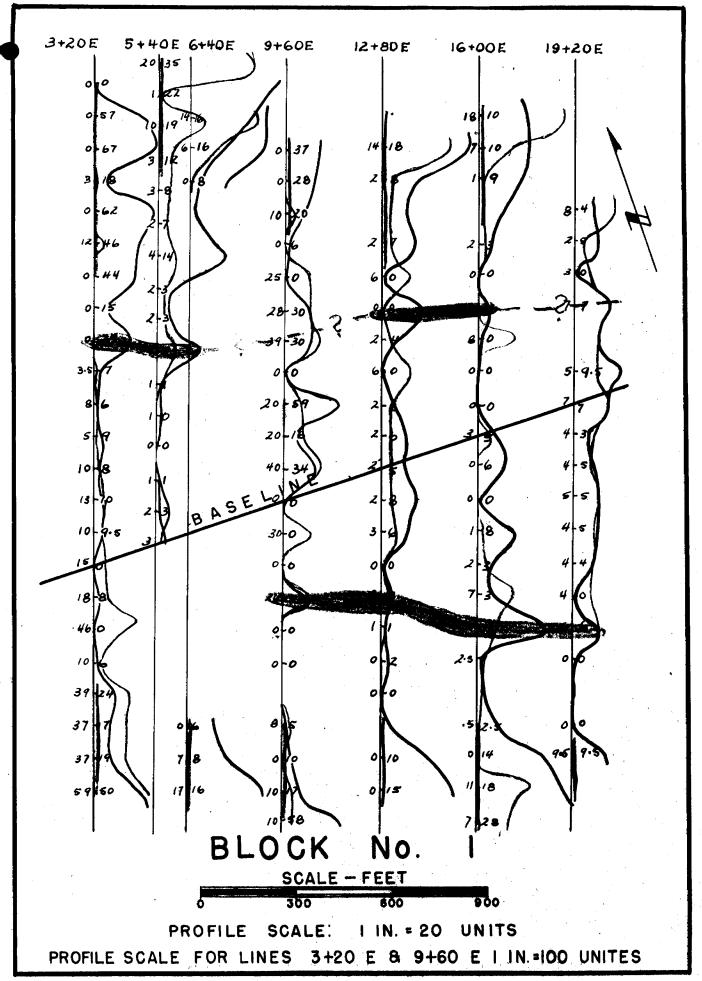
and in which the sulphide mineralisation can be reached by ground waters can be detected by this type of survey. The ground waters react with the sulphides producing, in effect, a natural battery. The survey consists of detecting the current flowing in the ground around the mineralisation _ from this battery.

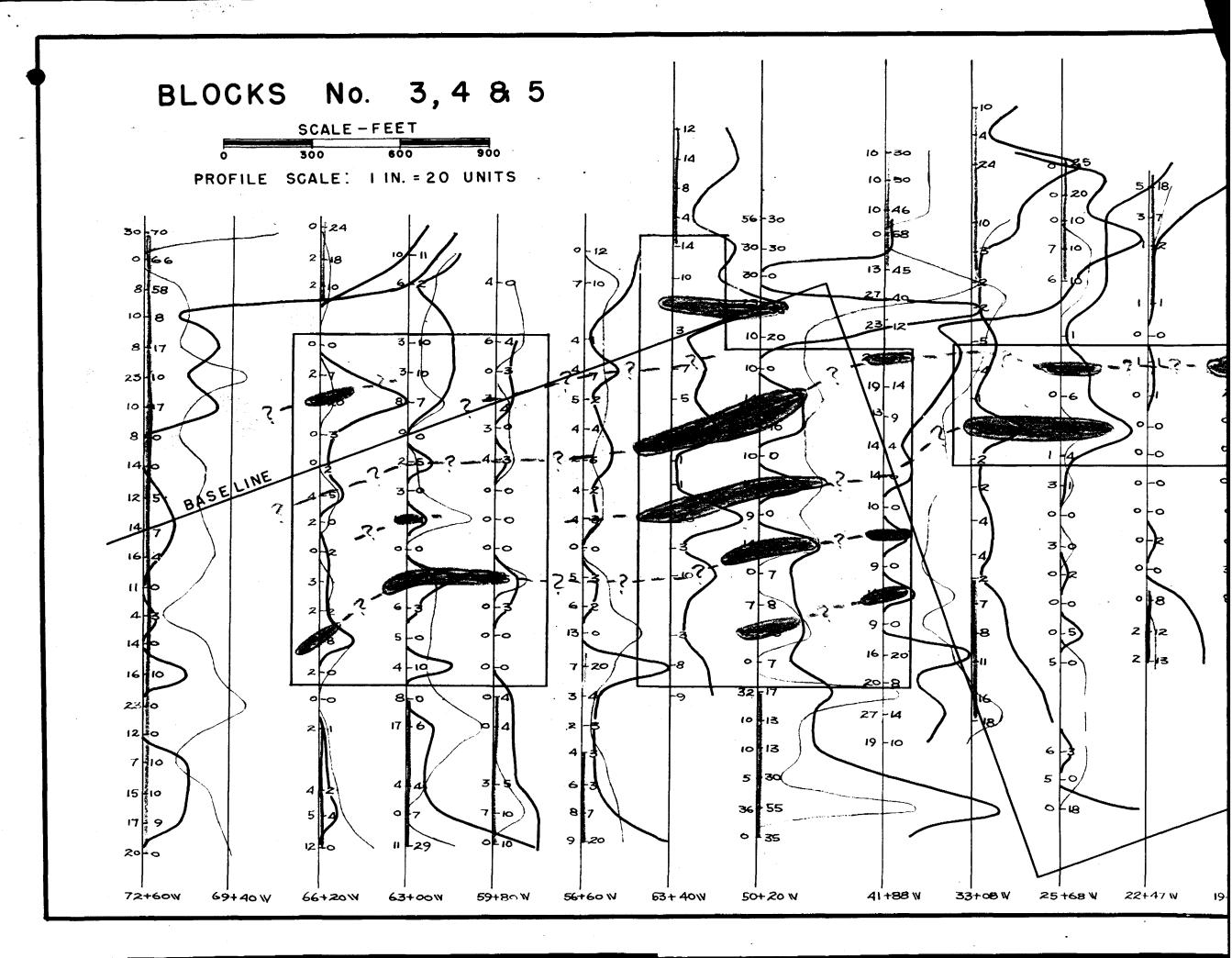
Since the overburden is quite thin (25° = 50°) and sulphides are being sought, this method should provide positive evidence of sulphide mineralization in advance of drilling. This can be done quite cheaply and rapidly. The results of such a survey can be used for spotting drill holes with the minimum footage of drilling.

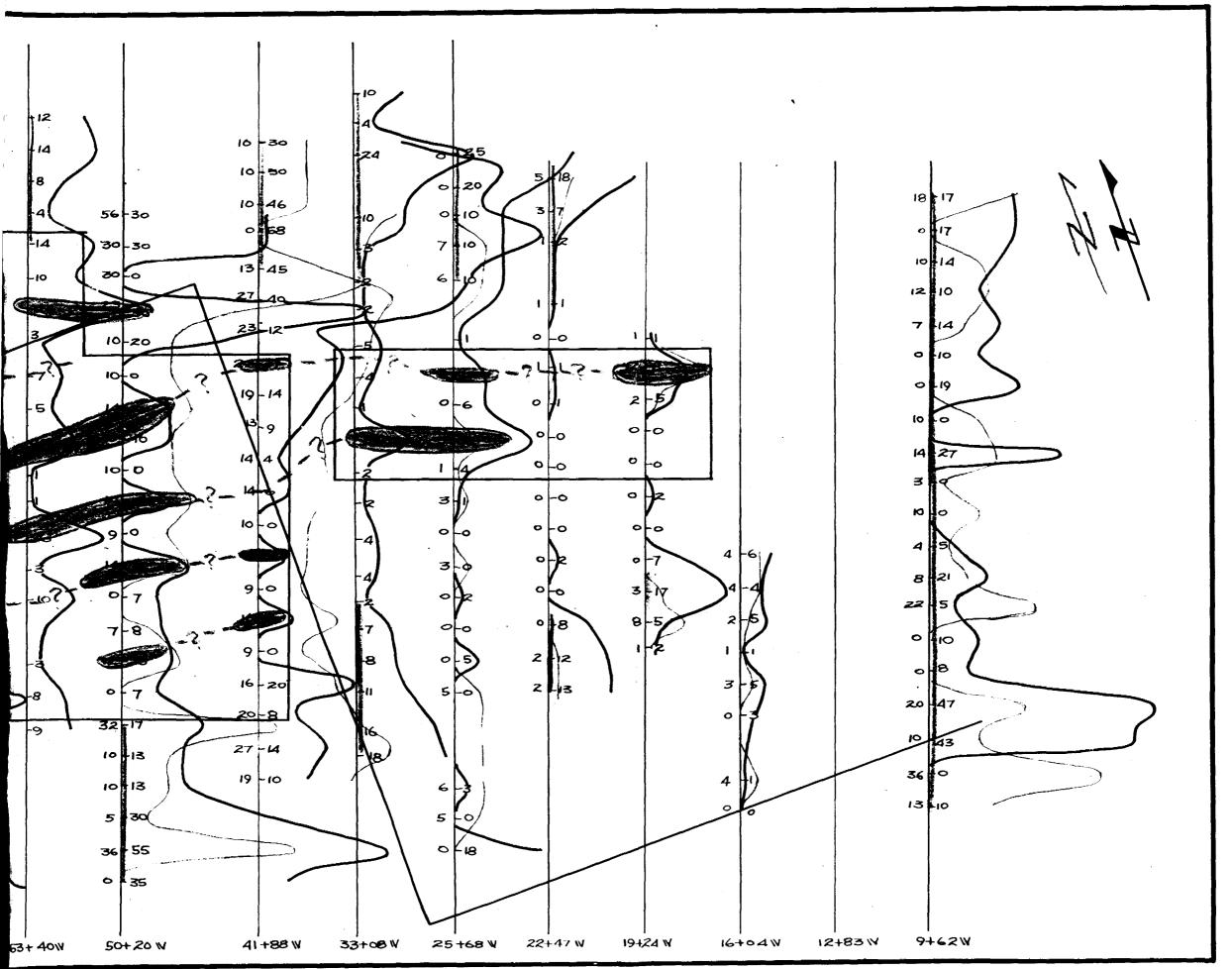
EXPLANATION OF SYMBOLS ON FOLLOWING FIGURES

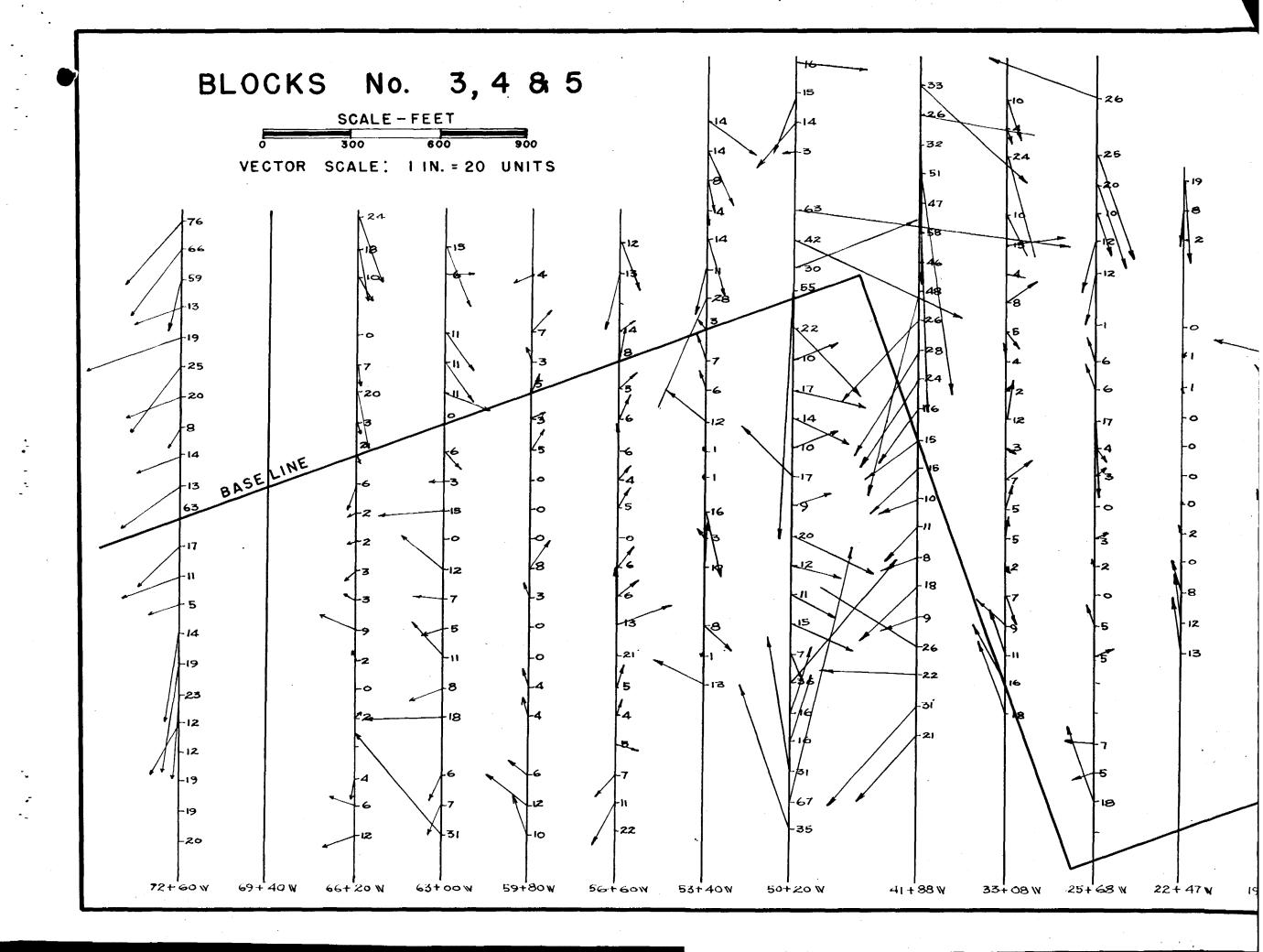
- Values on left side of picket line indicate an eastwest direction, horizontal emponent, corresponding to faint profile line.
- 2. Values on right side of picket line indicate horisontal component in North-South direction, corresponding to heavy profile line.
- 8. Solid blue indicates outline of well defined anomalies of economic significance with dashed line showing possible extension.
- 4. Red lines indicate readings which are due to extraneous causes such as swamp and topography.
- 5. Green lines indicate anomalies which can not be explained, but are probably of no economic importance.

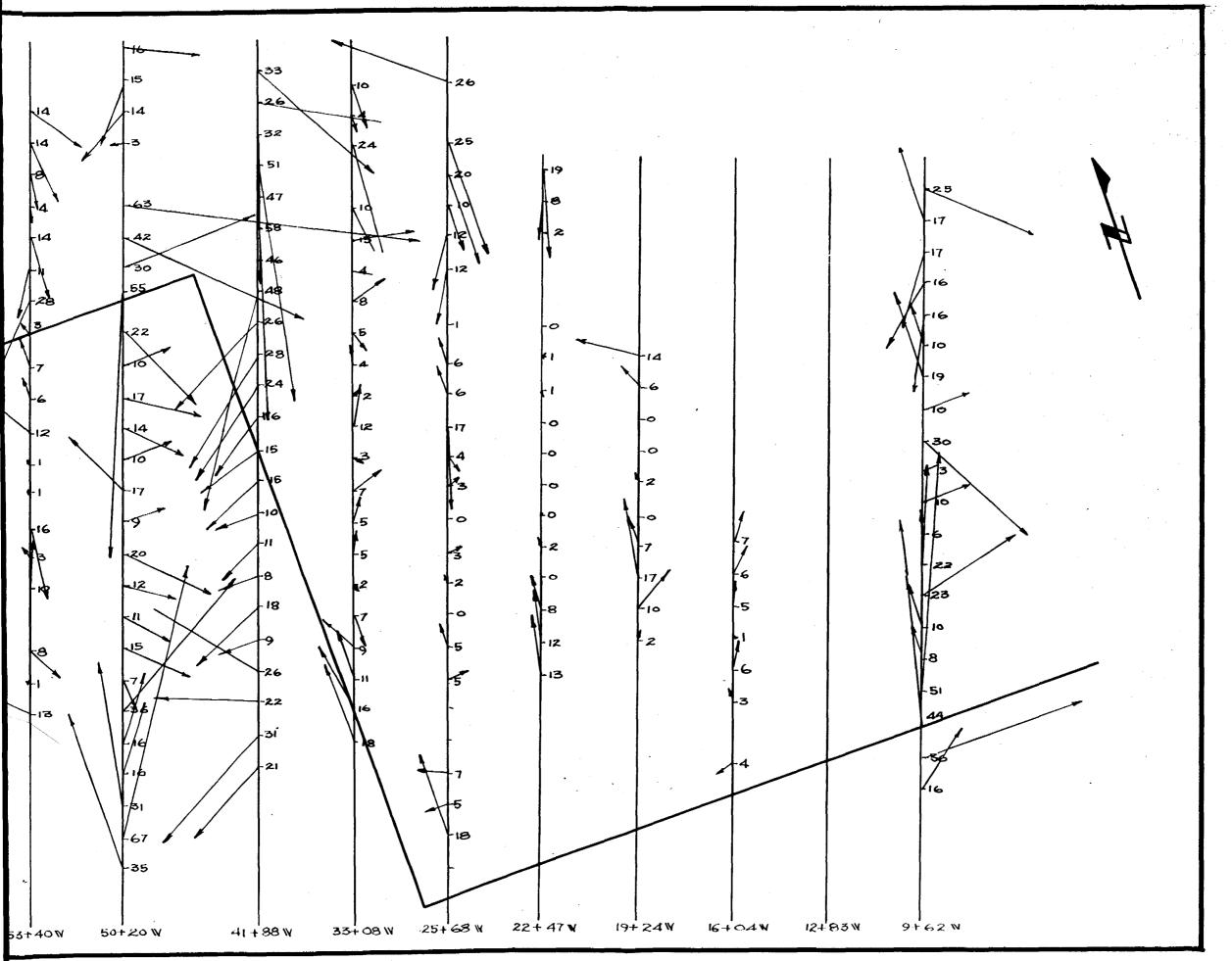












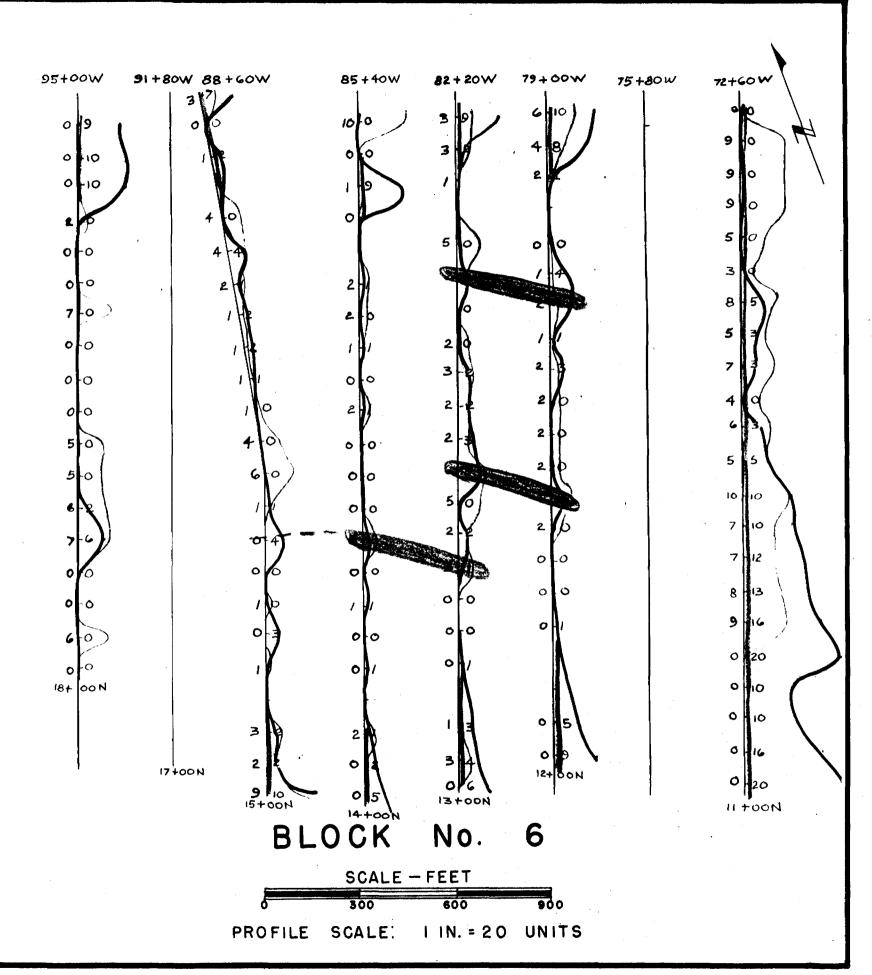
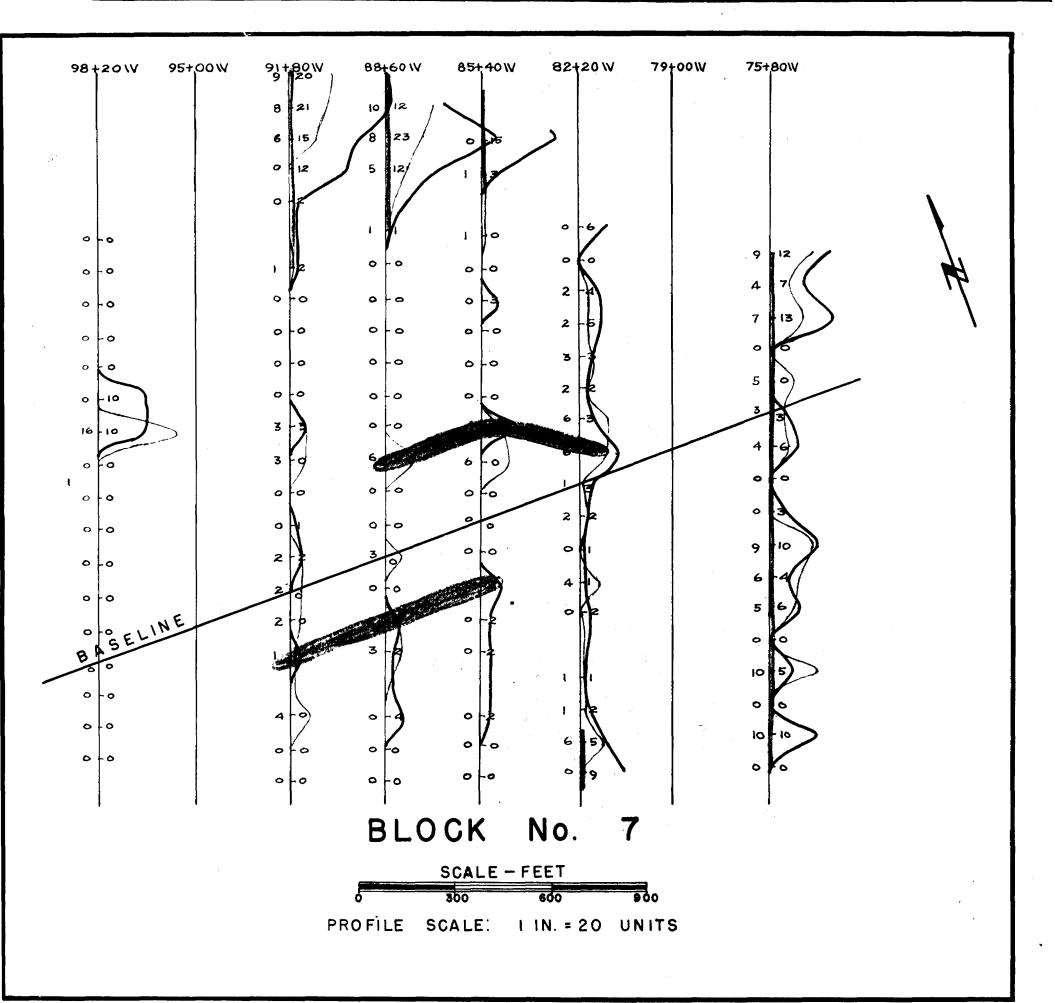
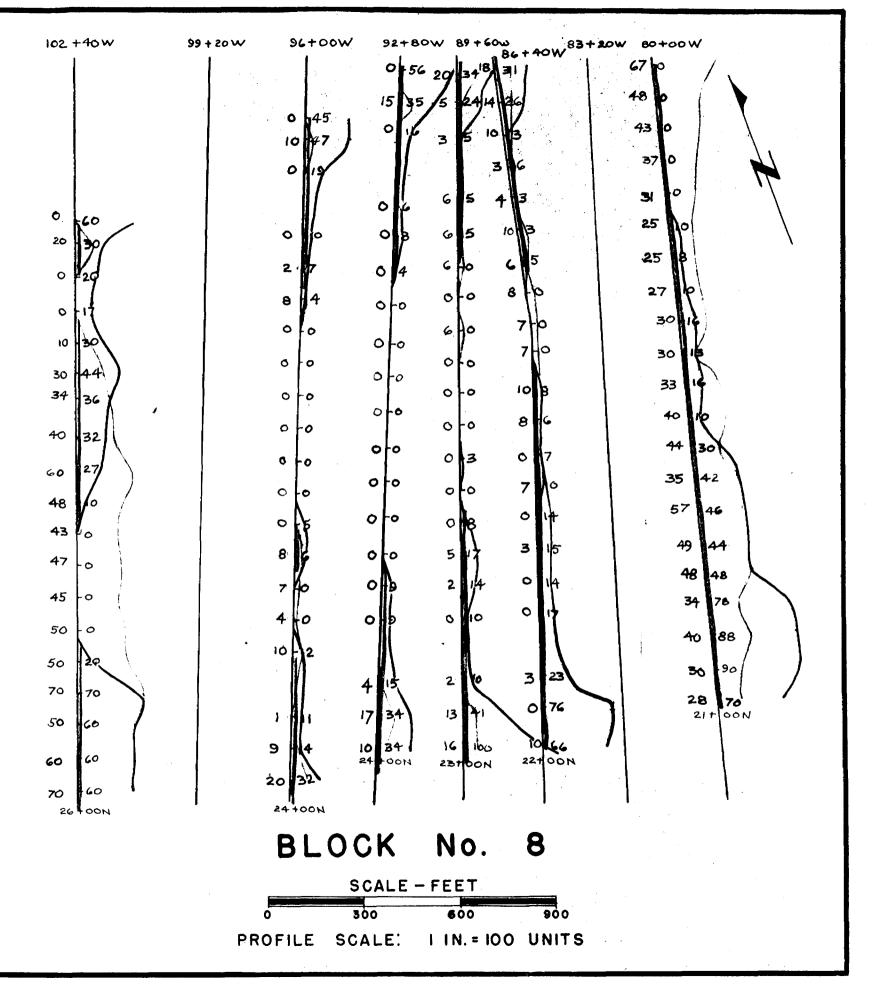
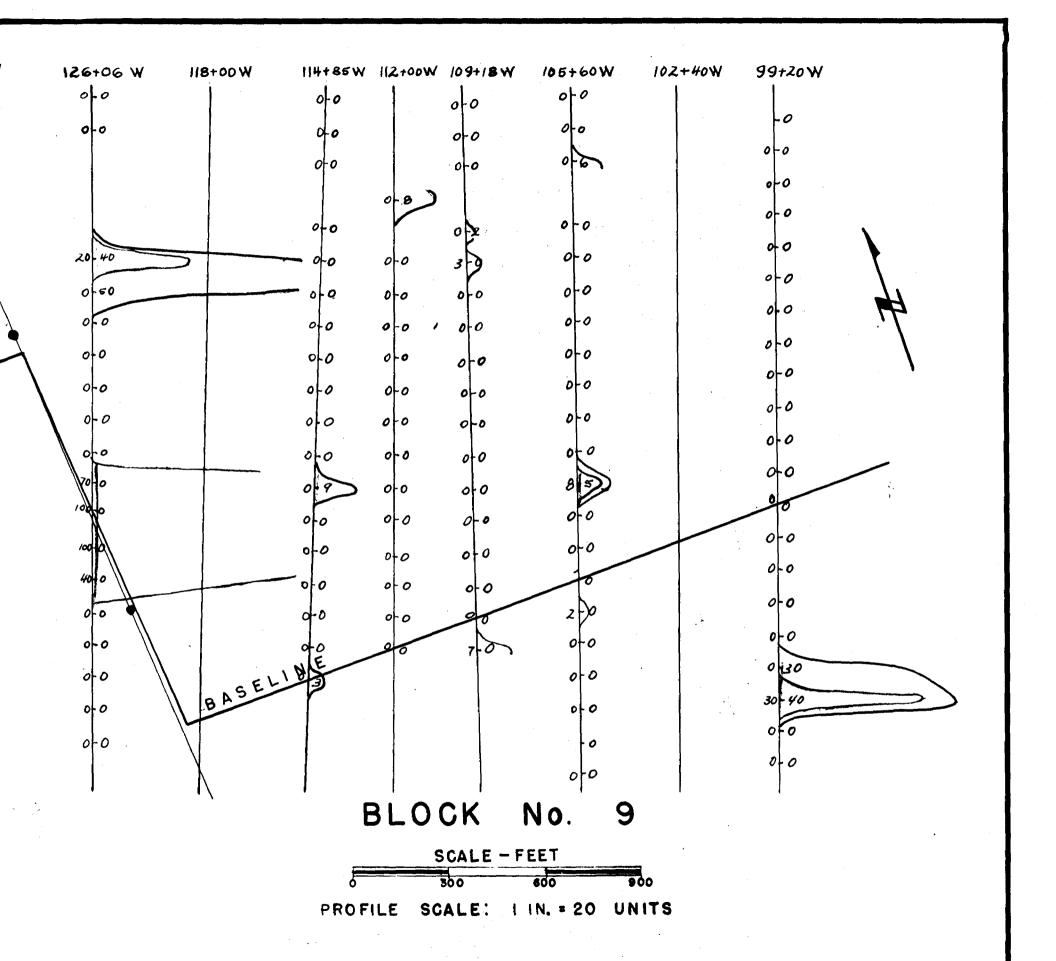
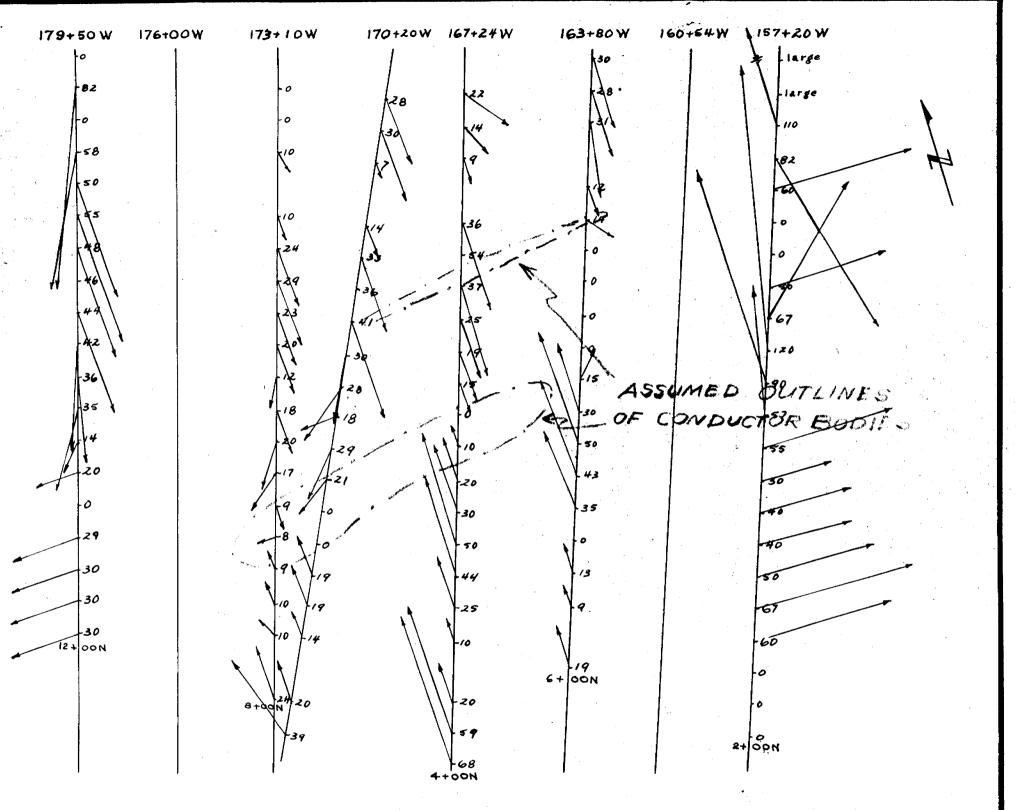


FIG. 6

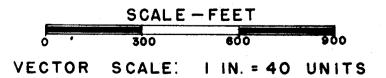


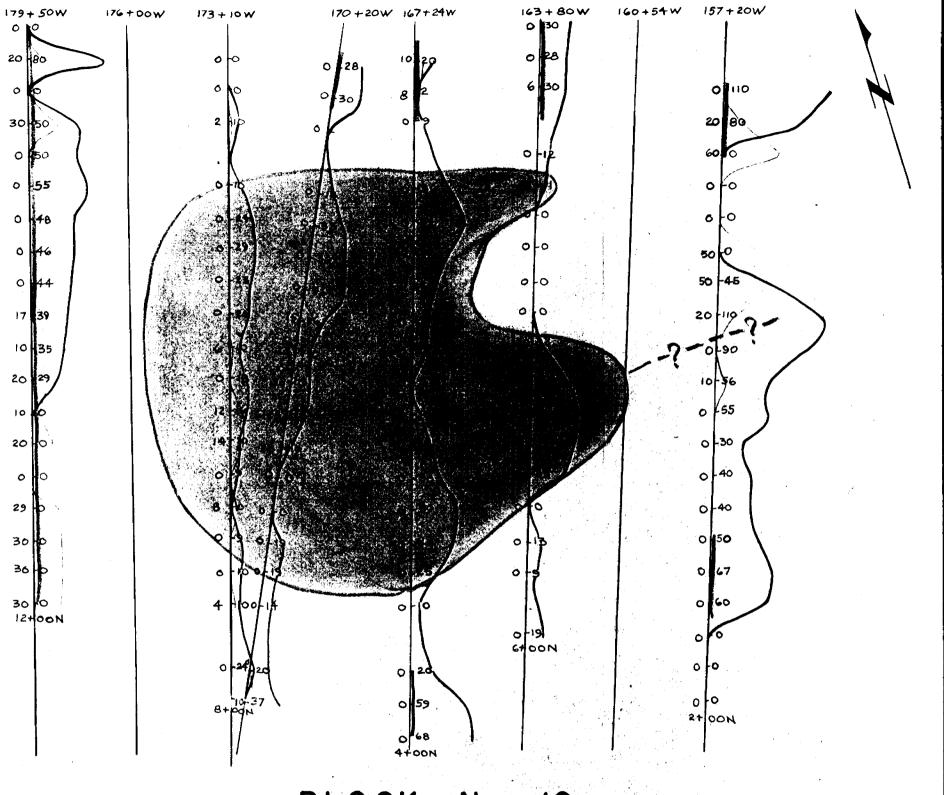




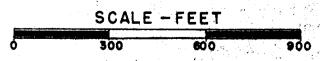


BLOCK No. 10





BLOCK No. 10



PROFILE SCALE: I IN. = 100 UNITS

Block 10:

The larger part of Block 10 should be surveyed by the self potential method. Stations should be spaced every 50 feet, and in the neighborhood of peaks every ten feet. The peaks should be located along strike for accuracy in drilling. In any event this anomaly should be drilled as recommended previously.

Respectfully submitted,
MINING GEOPHYSICS CORPORATION LIMITED

J. I. Noakes

J. C. Frantz

Toronto, June 30,1949.

N. B. Keevil

RECOMMENDATIONS

Block 1:

Blook 2:

Two trends appear to be significant in Block 1. These trends should be investigated with short self potential prefiles. If nothing is detected by this method them the block should be given me further consideration as far as sulphides are concerned.

Anomalies have been found in addition to these over the Mataris Showing. These should be investigated by self potential profiles. From the results, it should be decided whether to fill in with closer spaced lines. This could be done without further line-subting. The purpose of these lines would be to determine if the mineralisation has dimensions of any magnitude.

Blooks S, 4, and 5:

These blooks contain three areas of possible interest.

These areas should be traversed by self potential profiles. The stations should be 50 feet apart and at closer intervals over anomalies. The results should govern any plans for drilling.

Blooks 6, 7, and 9:

These blocks contain small anomalies which may be due to either very local deposits or shearing. These anomalies should be traversed by short self potential profiles with a minimum amount of time being spent. If anything of interest is revealed, then it should be decided whether to continue with the drilling program previously resumended.

Block 8:

There is nothing of interest detected by the electrical method here.

APPENDIX

Property

Bagamae Mines Limited, situated in the Toumship of Connaught, District of Sudbury, Province of Onterio, comprising 45 claims, vis:

\$919 \$605 - \$607 (inclusive); 4500; 8596 - \$599 (inclusive); \$602 - \$603; 8606 - \$611 (inclusive); 8615; 8680 - \$682 (inclusive); 8654 - 8656 (inclusive); 8694 - 8695; 8697; \$698; 8699; 8670 - 8871; 8875 - 8660 (inclusive); 8884 -\$885; 8897; 8900 - 8905 (inclusive).

Dates of Survey:

Chaining, picketting, electrical measurements Way 5 to June 5, 1949 (5 min) - 84 man dys.

Calculating, plotting, interpreting, mapping -May 25 to June 80, 1949 (6 men intermittently)

Total - 125 *

Baseline and Picket Lines:

The original lines out in June 1947 were used with some recutting, rechaining and re-picketting (100 ft. observations were made at 500 foot line spacing) In some sections new lines were out.

Miles of Line:

20.3 miles

Operator: D. Brennan

Assistants: H. Wank and G. Wilcox

Braftsmen: M. Green, M. Conley

Geophysidats and Geologists: J.E. Hoakes, J.C. Frants, M.B. Keevil

Instrument Used: Electromagnetic Ratiometer

Number of Electrical Measurements:

North-South - 1186 East - West - 1186

Total 2512

030

REPORT NO. 242 A

Report on the Geophysical and Geological Survey of the Property of

BAGAHAO MINES LIMITED

Township of Commaught

Province of Ontarios



104 CONNAUGHT

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SUBBIARY

The claims of Bagamac Mines Limited, Connaught Township, have been surveyed geomagnetically and geologically. The geology, as previously outlined, has been modified and enlarged in many respects.

The area is underlain by greenstone and Ridout sediments, extending in more or less east-west bands across the property. Quarts porphyry stocks, lamprophyre and diabase dikes intrude the rocks noted above. Cobalt conglomerate outcrops in the south central portion of the property. Folding and faulting after deposition of the Ridout sediments have complicated the geology of the area.

tiany high magnetic anomalies have been outlined, most of which are due to disbase and others which may be of economic interest. More detailed geophysical work in certain sections and a total of 5020 feet of preliminary diamond drilling are recommended to explore certain structures before making further recommendations.

The north-western portion of the property appears to be the most promising, and most of the work suggested is in this locality. It is undorstood that adjoining ground in Cabot Township has been staked, according to our recommendations, by Bagamac since the above survey was made. It is recommended that these claims be investigated geophysically together with geological mapping of exposed rock.

Report on the Geophysical and Geological Survey of the Property of BAGALAC MINES LIMITED

Township of Connaught

Province of Ontario.

INTRODUCTION

The property of Engame Mines Limited in the Township of Connaught, Province of Octario, consists of 184 claims, vist

8587 to 8618 (inol); 8649 to 8657 (inol); 8692 to 8700 (inol); 8757 to 8765 (inol); 8869 to 8919 (inol); 58741 to 86749 (inol); 59264 to 89268 (inol); 40516 to 40320 (inol);

In April, 1947, a geomagnetic survey of 40 claims was commenced. Measurements of the earth's vertical magnetic component were made at 100 foot intervals along picket lines spaced 500 feet spart. Smaller intervals were used his required. A preliminary report and map were prepared for this part of the property.

In July and August, 1947, a similar geomagnetic survey was conducted on the balance of the 124 claims with measurements taken along picket lines spaced approximately 600 feet aparts. This was followed by a geological survey of the whole property.

GEOLOGY

General Geology:

The consolidated rocks of the area are Precembrian in age, and consist of a variety of sediments, volcanics and intrusives. The topes graphy is rugged over much of the property, and in such areas outcrops are fairly abundant. The western and north-castern parts of the property are covered by sand plains and gravel hills, and consequently little geological information could be obtained by direct observation.

Briefly, the goology is as follows. The western portion of the property is crossed by a central east-west trending belt of

Keewatin volcanies and two bands of sediments. The eastern portion of the property, which may be separated from the western part by the Elephant Head Creek fault is underlain by a band of sediments trending east-west across the centre of the property, and in contact with fresh-looking volcanies to the north and south. Sediments also outcrep south of Chris and Tina. Lakes and occur interbedded with volcanies north of Mattaris lake. Stocks of quarts perphyry have intruded into these rosks and are centered around Elephant Head Creek. West of Burns lake outcreps of fresh conglosserate are believed to represent an outlier of the Cobalt series. Plabase dikes striking in a north-ment direction are very abundant in all parts of the property.

Keewatin Volcanios:

The Keewatin rocks consist predominantly of andesite with some volcanic breccia, tuff and dacite. The andesites are typically fine grained and highly metamorphised rocks to which the term "greenstone" is especially applicable. Some coarse grain andesite is, however, present and approaches a dicrite in appearance. Flow structures, particularly pillows are locally well developed.

Late or Post-Keewatin, Volcanies:

Believed to be younger than the metamorphosed Keewatin rooks is a series of definitely fresher volcanies consisting predominantly of acid flows and brecoises with agglomerate locally prominent, and smaller amounts of interbedded andesite and tuff. Quantitatively, the most important member of this series is a pinkish to greyish trachyte which is often porphyritic with well developed feldspar phenogrysts. Precoise of the same composition as the trachyte underlie such of the area to the north-west of Chris lake.

phenocrysts of quarts and feldspar in a fine grained ground mass, and is massive in appearance. Outcrops of a dark porphyritic rock containing feldspar and hornblends phenocrysts were noted on the east shore of hurns take and are believed to represent small lemprophyre dikes.

Matacheman Diabases:

Diabase dikes, most of which are believed to be Natachewan in age are very abundant on the property. The majority of these dikes strike about N 50° W, but several large dikes have a strike only slightly north of west. One of these latter dikes appears to follow the volcanic sediment contact on the east half of the property. The form of certain of these diabase dikes is very complex with numerous branches and offencots, not common in most other areas, being a prominent feature.

Cobalt Sediments:

Outcrops of fresh boulder conglomerate were noted west of Burns Lake. The unmetamorphosed and unsheared condition of these sediments indicates that they probably belong to the Cobalt series. No contact with the older rooks was observed, but H. C. Laird has observed similar sediments having a very flat dip resting on steeply dipping Koswatin flows near Commanght lake and concluded that they belonged to the Cobalt series.

Structural Geology:

There is no evidence of folding until after the deposition of the Rideout sediments. Subsequent to this sedimentation the volcanics and sediments underwent intense folding and were later eroded so that the strate now occupy a vertical or nearly vertical position. The folding, as

Laird, H. C.: Ont. Dept. Mines Report Vol. XLIII, Part III, 1984

Late or Post-Keewatin(Hideout) Sediments:

impure arkoso, and oblorite-serioite schist have, in general, been highly sheared; the stresses causing the shearing probably being regional in nature. This shearing is about east-west in most places and usually parallels the strike of the formation. The dip of the strate is steep, not varying more than ten degrees from the vertical wherever observed. The schists noted above are often highly contorted with minor drag folds and cleavage fractures in evidence. Interbedded with the trachyte and andesite north of Mattaris lake are more or less lens-shaped bands of greywacke and conglemerate. Outcrops of chert-iron formation striking south of east were noted in the band of sediments, south-west of Picket lake. Another narrow band of sediments rich in magnetite (though not a typical iron formation) was found immediately to the north of the small lake north of Mire lake.

It should be noted that there is no evidence of an unconformity between the metamorphosed Kessatin volcanic rocks and the sediments and fresher volcanic rocks, though these fresh volcanics (typically acid) are not present on the west side of Elephant head Greeks.

Halloyburian (1) Intrusives:

A small stock of diorite intrudes the sediments between Chris and Mattaris lakes. This digrite is quite fresh in appearance, usually coarse grained and dark green in color. The age is not definite, but is probably one of the Maileyburian intrusives of the region.

Algoman Intrusives:

Rooks classified as Algoman on this property include quarts; perphyry, and hernblende lamprophyre believed to be genetically related to the Algoman granites of the region. The perphyry contains

evidenced by minor structures in the sediments was very complex with apparently many minor synclines and anticlines superimposed on the main structure. Because of this complexity it is not possible to tell whether the main structure is anticlinal or synclinal.

Both strike faulting and cross faulting are in evidence in this area. A broad valley, up to a quarter of a mile wide and through which flows Elephant Head Creek is a distinct break, both topographical and geological. This marked valley, together with the offsetting of formations as the valley is crossed indicates a major fault having a roughly north-south strike. A small valley, west of the north end of Elephant Head Creek with discordant strata on either side indicates a roughly parallel fault. The exact location of the Elephant Head Creek fult can not be defined as the valley is very broad and outgrops in the valley almost lacking. Strike faulting is indicated at the east end of Wire Creek, along or close to the sediment-greenstone contact where the sediments are highly sheared, but the volcanics have undergons relatively little shearing. Several other faults have been indicated by magnetic and geological work. Breaks in the magnetic contours and offsetting of formations indicates a fault along the east branch of Wire Creek, and along the low ground between Chris Lake and Mattaris Lake.

as follows. Following deposition of the Rideout sediments a great period of disturbance is indicated by folding and shearing. This was followed by the Algoman intrusives consisting of quarts perphyry in this area, with diorite and granite in addition being intruded in other parts of the district. Post-Algoman faulting on a regional scale divided the district into geological sections as the areas east and west of Elephant Head Creek Fault. Diabase dikes followed along existing directions of

weakness resulting in a complex system of dikes in general trending north-west. Post diabase faulting is indicated in several places, but its relation to the regional faults noted above is not clear.

Becommic Geology:

Prospecting has revealed some mineralization which includes pyrite, pyrrhotite, chalcopyrite and secondary copper minerals, clong narrow shears and in quarts veins. Assay results to date are, however, somewhat disappointing.

The Matteris showing on Claim TRS 3856 has been explored by several deep test pits. The mineralisation consists of pyrite, chalco-pyrite and small amounts of malachite and other secondary copper minerals. It occurs as small stringers and replacement lenses in agglomerate. The copper content of the stringers visible was not high, pyrite being the most abundant sulphide. These stringers strike N 70° W and occur in a some about 100 feet wide traceable for 200 feet.

North of the baseline on Claim 8650 is a banded from formation striking N 70° Which is locally sheared and mineralised over a width of $1\frac{1}{3}$ to $5\frac{1}{3}$ feet. The mineralisation is quite heavy, and consists of pyrite with some chalcopyrite.

A small quarts vein 2 to 5 feet wide with some pyrite minoralisation crosses the baseline about 1/2 mile west of Elephant Head Creek. This vein strikes north-east and can be traced for 300 feet.

Four hundred feet west of the Hydra-Electric Power

Commission line and 400 feet north of the township line a quarts wein over

6 feet wide and mineralised with fire pyrite was noted. A marrow shear

about 6 inches wide, well mineralised with pyrite and chalcopyrite and

striking north-east occurs about 100 feet east of the quarts wein noted above,

Samples from the showings discussed above are reported to have assayed no more than .Ol ounces of gold per tone

From a comparison of geological conditions existing on this property with those in Precambrian mining camps, as well as from theoretical considerations, the area in the vicinity of the quarts perphyry stock in the vicinity of Elephant Head Creek should be a likely spot to find gold-bearing quarts veins. The presence of a number of old pits, most of which have long since caved in indicates that prospectors have been active near this intrusive, but apparently nothing of significance was found.

GEOPHYSICAL BURVEY

anomalies were encountered. Geological evidence obtained since the original report was made on the east section of the property has confirmed the interpretation that many of these high anomalies are caused by a system of diabase dikes. The extension of the survey over the rest of the property indicated further high anomalies caused by diabase dikes, these being less abundant in the western portion of the property.

The Cobalt conglomorates, Reswatin volcanies and Ridout sediments did not show appreciable differences in magnetic properties in the area covered by the complete survey as in the original survey of the east section of the property.

Nigh anomalies having readings up to 1500 generas were noted over areas underlain by trachyte perphyry west of Chris lake.

Further anomalies ranging from 900 to 5200 gammas are not readily explained and may be due to somes containing magnetic minerals and sulphides. The high anomaly on Claims 8875, 8876 and 8871 appears to join the east-west trending anomaly to the north near the west boundary of

the property probably indicating a small fold. Distortion in the southern anomaly at the north-west corner of Claim 8877 indicates the probability of a further subsidiary fold which should be investigated as a possible site for one deposition. The strike of schist outcrops in this area, parallel to the trend of the anomaly, as does the strike of a magnetite-wrigh some in the schist. It is probably such a some that is responsible for this high anomaly.

At the north boundary of the property on Claims 8879, 3880 and 8881 is a broad wrong momaly. Highs in this anomaly appear to line up generally with known diabase dikes to the south. Since the area is drift covered, and the lines along which magnetometer readings were taken are over 600 feet apart, it is not possible to contour the area in detail. Seadings ranging from 900 to 1200 gammas (somewhat lower than those obtained over the suspected diabase areas) are not as readily interpreted. Outcrops near the anomaly are of chlorite sericite schist, believed to be altered sediments. Strong shearing was noted at line 10240 near the anomaly as well as some fairly heavy pyrite mineralisation. Other smaller anomalies of possible economic importance occur on Claims 8903, and 8900 and on Claims 8889 and 8890, both near the baseline. Further work should be done in this area.

on the cast side of the property is caused by a diabase dike. This anomaly follows a very constant strike until Claims 8810 and 8607 where it departs from this strike and appears to branch and widen to the north.

Farther west on Claims 8651 and 8652 there is a high anomaly which is caused by a diabase dike and is directly in line with the anomaly noted above. At the west and of Claim 8607 it departs from this strike and appears to branch off to the south into a broad irregular anomaly. More

detailed surface examinations, additional intermediate geophysical lines and perhaps some X-ray diamond drilling in this area is suggested to determine whether or not these anomalies are occupied by diabase dikes or by more interesting geological structures.

CONCLUSIONS

that part west from the perphyry boss. Folding and faulting were both active here and several structures of interest were revealed by the magnetometer survey. The area around the perphyry stock is particularly interesting in that geological conditions are favourable for formation of ore deposits. However, prospecting in the past appears to have been concentrated around this intrusive, with nothing of interest being found, and the geophysical survey revealed nothing of significance in this area.

RECOLATE NIATIONS

It is recommended that:

- (1) Detailed geophysical work be done on the anomaly on Claims 8874, 8878, 8879, 8880 and 8881 by running intermediate lines with the magnetometer, possibly followed by an electrical survey.
- (2) Intermediate magnetemeter lines be run on Claims 8889 and 8890 near the baseline to cutline in more detail the anomaly indicated here.
- (5) Trenching be done across the anomaly striking northeast from the baseline on Claim 8877. The best place to trench would probably be south of the small lake, as the overburden appears to be shallow.
- (4) Detailed surface examination, additional intermediate geophysical lines and perhaps some X-ray diamond drilling on Claims 8607

and 8610 and parts of the adjoining claims to determine if the broad irregular anomalies in that area are occupied by diabase dikes or geological structures of economic interest.

Proposed Diamond Drillings

D.D.H. No. 1

Collar:

Line 16724 , 1150 N (Baseline # 2)

Directions

N 20° E (along picket line)

Dips

450

Slope Length: Projected Length: 12601 8901

Purposes

To test the distortion in the anomaly

on Claims 8876 and 8877.

D.D.H. No. 2

Collars

150' E of station 500' N on line 11485 W

(Baseline # 2)

Direction:

Due south

Dips

450

Slope Lengths

1150'

Projected Lengths

8201

Purposes

To test the two anomalies north of the east arm of Wire Lake and the sheared greenstone sediment

contact.

D.D.H. No. 3

Collars

8540W on Baseline # 1

Directions

N 430 R

Dips

450

Slope Length:

6101

Projected Lengths

4351

Perposes

To check the extension of the mineralised

iron formation on Claim 8650.

It should be understood that not all the possible orebearing structures would be investigated by this program, but merely those which at the present time seem to be the most promising.

In addition, it is suggested that the quarts vein mentioned previously and which lies north of the present property boundary be investigated by surface work to ascertain if it contains any values outside the present exposed length which is very small. It is understood that

the Company is staking this ground and a block of ground east of this and north of the claims mentioned under (1) above. These claims should be investigated geophysically along with geological mapping.

Respectfully submitted,

MINING DEOPHYSICS COMPORATION LIMITED

man

J. C. Frants Geologist.

Coronto.

October 28, 1947.

N. B. Koevil Geophysicist and Geologist, Geologists:

O. D. Maurice, H. S. Scott, N. B. Keevil (office) J. C. Frants, T. Patrick (office and field)

Instrument Used:

Askania Type Magnetometer.

Location of Hain Base:

98+20 W on Baseline No. 1. 0+00 on Hameline No. 2 (reading = 698 games)

Number of Magnetic Measurements: 5255

BAGAMAC MINES LIMITED

(NO PERSONAL LIABILITY)

OFFICE OF SECRETARY-TREASURER

63,104

Sulte #311 21 King Street E. THE PERSON TORONTO, ONTARIO

20th December 1947.

Mr. J.F. McFarland, Department of Mines. Parliament Buildings, Toronto 2, Ont.

Dear Sir:-

re: Connaught Township Properties

We enclose herewith amended Appendix to the final report of Mining Geophysics Corporation Limited on our preparties situate in Connaught Township.

On leaving your office yesterday, our Mr. McGill noted that the item "Geology - 64 days" had been circled in red. This includes only work in the field as shown in the amended appendix.

Trusting this information will meet your requirements; We are.

Yours very truly,

BAGAMAC MINES LIMITED (No Personal Liability

Secretary

Encs. 2

APPENDIX

PROPERTY:

Bagamac Mines Limited, situated in the Township of Connaught, District of Sudbury, Province of Ontario,

comprising 84 claims, viz:

8587 to 8595 (inclusive); 8604; 8649; 8653;8692 to 8696 (inclusive); 8700; 8757 to 8763 (inclusive);

8869 to 8913 (inclusive); 38741 to 38749 (inclusive); 39267 to 39268 (inclusive); 40316 to 40318 (inclusive).

Dates of Surveyl

Magnetic Measurements - July 8 to August 1, 1947 (2 men) - 58 man days
August 21 - August 26,1947 (2 men) - 15 " "

Line cutting, chaining, picketting -

June 22 - August 21 (4 men) - 240 "

Geology (field) August 25 - September 26 (2 men) - 64

Calculating, plotting, interpretation -

July 10 - December 19 (5 men) inter-

mittently

- 213 "

Total

590 man days

Baseline:

No. 1 Baseline runs true East from 0+00 for 72+66 fts. True West from 0+00 for 26+48.5 feet. From 26+48.5 runs true North to 47+86.5 then runs West to 98+20.

No. 2 Baseline continues west from 98 ± 20 (where it is also labelled 0+00) to 118 ± 90 ; runs true North to 131 ± 54

and true West to 184+86.

Picket Lines:

On Baseline No. 1 picket lines turned off at N 20° E at 300

foot intervals.

On Baseline No. 2 picket lines turned off at N 200 E at 600

foot intervals.

Miles of Line:

73.3

Operator:

Hubert Wank

Assistant:

Hugh Lee

Linecutter:

E. Daoust and 6 assistants

Draughtsman:

R. L. Hill

Geologists:

O.D.Maurice, H.S.Scott, N.B.Keevil (office; J.G.Frantz

T. Patrick (office and field).

Instrument used:

Askania type magnetometer.

Location of Main Base:

98 + 20-W on Baseline No. 1. 0 + 00 on Baseline No. 2

Reading - 695 gammas.

Number of Magnetic Measurements - 5255

APPENDIX

PROPERTY:

Bagamac Mines Limited, situated in the Township of Connaught, District of Sudbury, Province of Ontario,

comprising 84 claims, viz:

8587 to 8595 (inclusive); 8604; 8649; 8653;8692 to 8696 (inclusive); 8700; 8757 to 8765 (inclusive); 8869 to 8913 (inclusive); 88741 to 38749 (inclusive); 39267 to 39268 (inclusive); 40316 to 40318 (inclusive).

Dates of Surveyl

Magnetic Measurements - July 8 to August 1, 1947 (2 men) - 58 man days August 21 - August 26,1947 (2 men) - 15

Line outting, chaining, picketting -

June 22 - August 21 (4 men) - 240 "

Geology (field)

August 25 - September 26 (2 men) - 64 "

Calculating, plotting, interpretation -

July 10 - December 19 (5 men) inter-

mittently

213

Total

590 man days

Baseline:

No. 1 Baseline runs true East from 0+00 for 72+66 ft. True West from 0+00 for 26 + 48.5 feet. From 26 + 48.5 runs true North to 47 + 86.5 then runs West to 98 + 20.

No. 2 Baseline continues west from 98 + 20 (where it is also labelled 0+00) to 118 + 90; runs true North to 131 + 54

and true West to 184 + 86.

Picket Lines:

On Baseline No. 1 ploket lines turned off at N 20° E at 300

foot intervals.

On Baseline No. 2 picket lines turned off at N 20° E at 600

foot intervals.

Miles of Line:

73.3

Operator:

Hubert Wank

Assistant:

Hugh Loo

Linecutter:

E. Daoust and 6 assistants

Draughtsman:

R. L. H111

Geologists:

O.D.Maurice, H.S.Boott, N.B.Keevil (office; J.G.Frants

T. Patrick (office and field).

Instrument used:

Askania type magnetometer.

Location of Main Base:

98 + 20 W on Baseline No. 1. 0+ 00 on Baseline No. 2

Reading - 695 gammas.

Number of Magnetic Measurements - 5255

TREPORT NO. 235

41P11NW0445 63.104 CONNAUGHT

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Report on a Coophysical Survey of the Property of

RAGAMAC MINES LIMITED

Commanghit Township

Province Ontarie.



41P11NW0445 63.104 CONNAUGHT

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SUMMARY

Dany magnetic anomalies have been outlined in forty claims in the eastern part of the Dagamac property in Connaught Township.

Those elongated in a generally north-south direction are due to diabase dikes, as is also one trending west and northwest from Chris Lake. Other anomalies were also found, some due to dicrite and porphyry and some sections appear to be of possible economic interest. However, further interpretation is being deferred, pending more detailed work and completion of the survey of the whole property.

Report on a Geophysical Survey of the Property of BAGAMAC MINES LIMITED

Connaught Township Province of Ontario.

INTRODUCTION

In April, 1947 a geophysical survey of the property of Bagamac Mines Limited was conducted. The property comprising 40 claims, vis,8596 - 8608 (incl); 8605 - 8618 (incl); 8680 - 8682 (incl); 8684 - 8667 (incl); 8697 - 8699 (incl); 8764 - 8765 (incl); 4100 - 4102 (incl); 3566 - 3667 (incl); 59264 - 89286 (incl); 40519 - 40520 (incl) and 3688; is situated in the Township of Community, Province of Outario.

The field survey was organised by Mr. No J. MacHeill, who was followed by Mr. Hubert Mank, who with Mr. H. Lee supervised the line-outting and made the geomagnetic survey. Some outcrops were noted and some specimens taken during the course of the field work. Further details of the field work are shown in the appendix.

GEE RAL GEOLOGY

All the consolidated rocks of the area are Presented in age, volcanic rocks of the Kesuatin are well represented, especially in the southern part of the area. A band of Timistening sediments (the Ridout series) extends from east to west in the middle portion of the area; conglowerate and greywacks, belonging to the Animikan (Cobalt series) have been found in the vicinity of hurns lake. The intrusives consist of quarts-feldspar, porphyry and dicrites of Algoran age. There are diabase dikes of Natashawan age and dicritic intrusives, probably belonging to the Haileyburian.

Keewatin Rooks

These rooks consist of hemblends, andesite and trashyte flows, tuffs and agglomerates. These are usually fresh in appearance; flow structures are very numerous amongst these rooks although a few pillow structures have

been observed. The hernblende andesite is characterised by a fine grained texture, it has a dull greyish-green color. In some cases the hernblende crystals are well developed, measuring up to coe-half inch in length.

The trachyte is pale-reddish in color, often perphyritio with phenocrysts of homblende and feldspars it may be confused with certain lamprophyros having about the seme color, or with some perphyritic varieties of symmite. The trachytes, however, do not occur in dikes as the lamprophyros and symmite perphyries do. The tuffs and applementance readily recognised by their fragmental character, which is better seen on weathered surfaces.

Timiskeming Sediments (Bidout Series)

These rocks coour in an east-west band approximately onehalf mile in width, in the middle portion of the area. They consist mostly
of arkose and greywacks; serioite schists and schistose conflowerates are
also well represented amongst these rocks. Iron formations have been
observed north of lurns lake but their importance seems to be very limited
within the limits of the area. The sediments are usually strongly sheared
in a general east-west direction, the dip of the sediments is never far from the
vertical. Extensive earbonatization, scriticization and chloritization have
altered these sediments greatly.

The conglomerate occurs along the margins of the sedimentary bolt; it contains a wide variety of pobbles and boulders which are usually stretched in the direction of the schistosity.

The occurrence of the conglomerate bands lying in the position of a basal conglomerate, the character of the publics in this conglomerate which are like the underlying volcanies and certain lithelegical features, point to the employment that these sediments are probably of limiskaming ago.

Pre-Algomen (Heileyburian?)

In the portage route between Chris lake and Matarie lake, there is a small mass of diorite which probably belongs to the Baileyburien age.

This rock is dark, course textured and fresh looking, it intrudes the Bidout sories.

Algoman

and mice lamprophyres occur in the area in the vicinity of hims lake and west of Elephant head Creek, immediately north of the band of sediments. These are believed to be of Algoran age. There are no known occurrences of granite and granodicrite resembling the rocks of the southern part of Commight Termship, but the dicrite of the area is very probably related genetically to this main southern intrusive since it has been observed that one type of rock grades into the other.

In the vicinity of Burns lake there are a few sectored dikes or sills of lamprophyre; this rock is reddish in color and contains large phenocrysts of chloritized mica in book form and large fragments of foreign material. Microscopic examination of these rocks show that they are close to hornblonds lamprophyre (camptonite) in composition. These lamprophyres are believed to be very early or very late differentiates of the grante magna.

The quarts-feldspar perphyry dikes are most certainly younger than the main intrusive since they intrude it at some places. The muserous quarts and cocasional feldspar phenocrysts stand out prominently in the dense fine-grained graindness.

lis techeman

The diabase dikes of the region are believed to be Matacheumi in age. Their width may vary from a few implies to more than 800 feets. Hagnetite is an important constituent of the clivine diabases, causing strong magnetic anomalies. The quartz diabase variety is less magnetic in many cases they are perphyritic with coarse phonocrysts of altered yellowish-green foldspars.

Animikean (Cobalt series)

A few outcrops of a conglemerate, believed to belong to the Cobalt series, were found on the west shore of Burns lake. These rocks probably cover an area about 2 miles in north-south extent and about one-half mile in the east-west direction, between Elephant head Creek and Burns lake. These rocks are readily distinguished from the older Ridout series. They are massive in character, the pebblos and boulders have a fresh appearance and also the matrix which could be called sandstone rather than ercose on account of its fresh appearance.

ROONORIC OMOTOGA

about 50 years ago by John Materia. The deposit occurs within the volcanic rooks, a dark colored, aphanitic, brocciated or fragmental rock acting as host. Vesicular structures are mineralised with pyrite. The mineralised zone attains a width of 100 feet and has been traced for several hundred feet; rold is said to have been obtained from this deposit.

idabase dikes have a general north-westerly trend. The general structure of the region indicates that there has been a great period of disturbance following the deposition of the Timiskanding sediments. The sediments were closely folded and faulted before the Algorian intrusion; these faults resulted from strong cast-west shearing movements and must not be confused with north-westerly trending faults which are definitely past Algorian

since they can be traced within the granite bathalith to the southe

The disturbances preceding the Algoran are the most important economically. The faults which have resulted from these disturbances may have served as channels for one-bearing solutions. Later solutions coming from depth or ground water solutions may have concentrated ore in the vicinity of natural barriers, such as disbase dikes.

It is highly possible also that the are associated with the Algorian intrusive may have followed the same lines of weak@ples which the disbase dikes have followed in later times. In that case, there should be a spacial relation between the dikes and ore.

GEOMYSICAL SURVEY

During the course of the geophysical survey of the area, many high anomalies were encountered. Some of these anomalies were elongated in a north-westerly direction, which corresponds to the general structural trends of the region, as the direction of strike of a system of diabase direct. The magnitude of the anomalies ranges from 1000 to 2500 games.

The Cobalt conglomerates, Resultin greenstones and the limitary burian sediments did not show appreciable differences in magnetic properties; the readings ranged from 600 to 600 gamma for these rooks.

One high anomaly trending east-west in the north-eastern part of the area, curved to the north-east and north mear Pielet lake, indicating that the dike in this case may have been influenced by regional folding in its emplacement, or intruded along the contact between sediments and lavas.

Other high anomalies ranging in magnitude from 1000 to over 5000 gammas indicate the presence of district rocks or foldspar purphyries of Algoran age, where these rocks outbrop the anomalies are readily explained, but at other places the high anomalies may be due to the presence of mineralised

somes containing magnetic minerals and sulphides.

CONCLUST ONS

The geomegratic survey has revealed the presence of anomalies, exact from those due to a system of diabase dikes. Some of these are attributed to diorite and foldspar purphyry, and some may be of economic interests.

At the present stage of the survey of the property, a final interpretation is not warranted, and further discussion is being deferred until further data is at hand.

It should be pointed out, however, that the sections mer the irregular-shaped anomalies should be given further study, and this should be in the way of geological commination of such outcrops as secur, and by a detailed geological survey of the interesting sections.

Hespectfully exhaitted,
MINING OBSPHYSIOS CORPORATION LIMITED

O. W. Mourice

[Millen]

0. . Heurice Toring logist.

Jume Srd. 1947.

N. B. Keevil Consulting Geophysicists

APPENDIX

ropertys

Bagamao Hines Limited, Commanght Tunnship, District of Sudbury, Province of Ontario, comprising 40 claims; 8596-8605 (inol); 8606 - 8615 (inol); 8680-8683 (inol); 8664-8667 (inol); 8697-8699 (inol); 8784 - 8785 (inol); 4100 - 4102 (inol); 8666 - 8567 (inol); 87864 - 89868 (inol); 40815 - 40820 (inol) and 8665.

Dates of Surveys

liagnetic lieasurements, Linecutting and chaining - " " " " " (lias & 50-Apr +27)

146 men days

Calculating, Plotting and interpretation - May 25 to Jame 5,1947- --

25 man days

Dasoline :

iams true East from 0+00 for 22+40 feet iams true Vest from 0+00 for 26+48.6 feet from 26+48.6 runs true Horth for 2188 feet then turns West to 98+20 feets

Picket Lines:

N 200 E at 500 foot intervals.

Miles of lines

Approximately 57.5 miles (not including baseline).

Operator:

Lubert bank

Assistant:

Itugh Loe

Linecuttinge

B. Daoust (plus 3 assistants)

Drough tomans

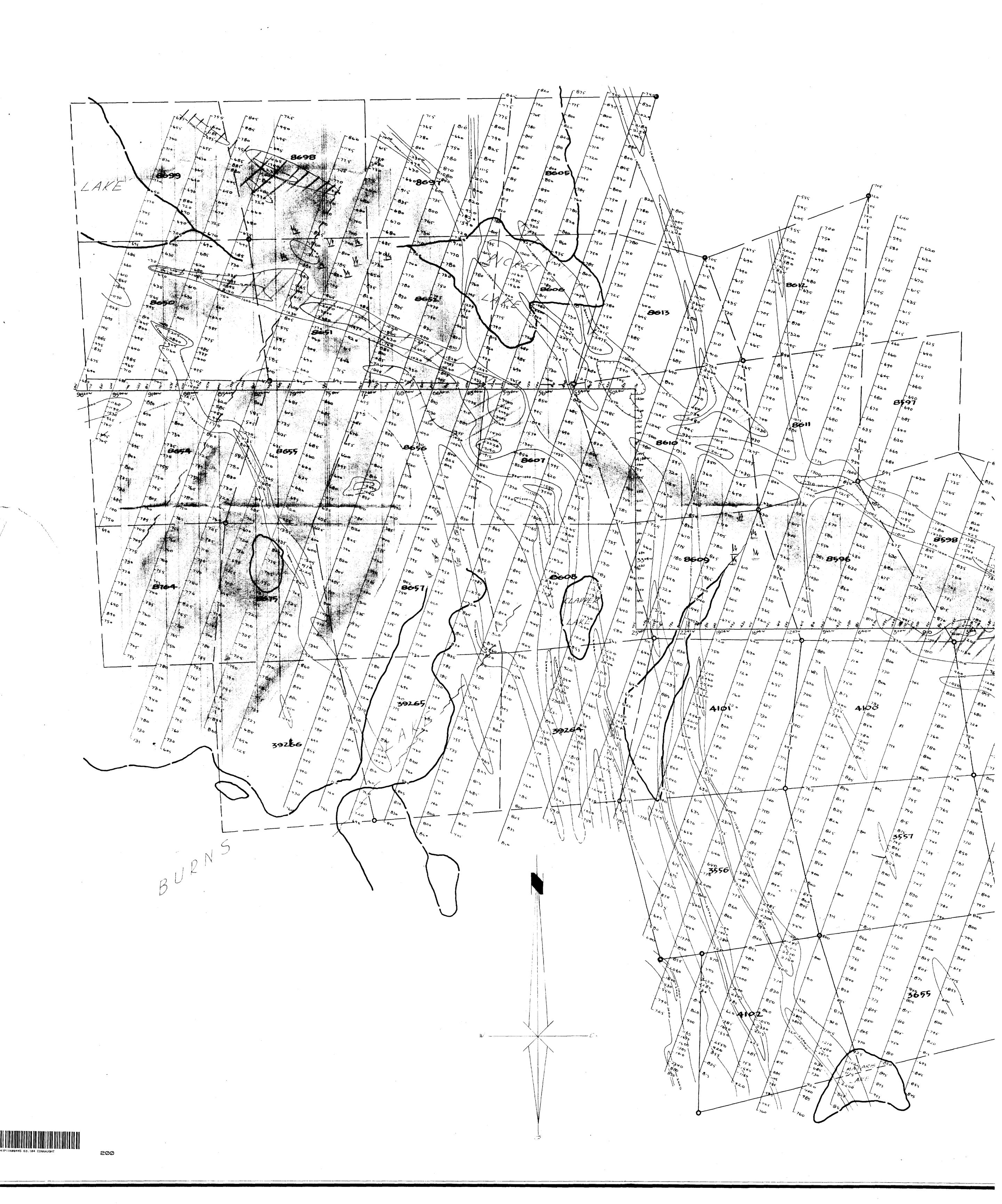
R. L. H111

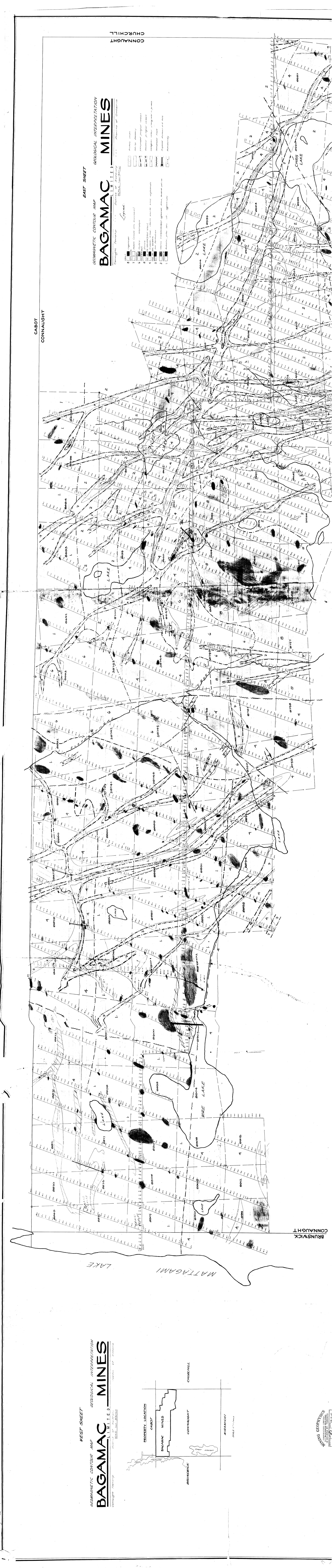
Instrument Used:

Askania type magnetemeter

No. of Hagnetic Heasurements:

2167





Geomagnetic Contour Map

MINES BAGAMAC District of Sudbury Province of Ontario Connaught Township SCALE: LINCH=300 FEET Cobalt conflomerate. Diabase dike. Quartz-feldspar porphyry & diorite. Sediments. Greenstone. Anomaly areas 8597 630 685 Bagamac 8598 ** 860 %

CORPORATION - LIMITED
311 McKINNON BUILDING
19 MELINDA ST. - TORONTO

DRAFTED BY:

TO ACCOMPANY
REPORT: 235

OLOMO

COPY No. 3

