



63.157

DOMINION GULF COMPANY

203 BAY STREET
TORONTO 1, ONTARIO, CANADA

E. W. WEBTRICK
GENERAL AGENT

IN REPLY REFER TO:

November 19, 1948.

Mr. H. C. Rickaby,
Deputy Minister of Mines,
Department of Mines,
Queens Park,
Toronto, Ontario.



4116NW0057 0019 AFTON

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Dear Mr. Rickaby:

A block of 81 claims from S-50312 to S-50392, inclusive, was staked in Afton Township late in December, and recorded at Sudbury on December 23, 1947. The adjoining block of seven claims from S-50627 to S-50633, inclusive, was staked and recorded at Sudbury on February 19, 1948. A third block adjoining the others and consisting of six claims from S-51018 to S-51023, inclusive, was staked and recorded at Sudbury on May 10, 1948.

Our attention was drawn to this area by our reconnaissance airborne magnetometer survey. The original staking was done on the strength of the results of this preliminary survey.

After the first block was staked, a ground magnetic survey was run at profile intervals of 1320 feet. At the same time, additional airborne magnetometer profiles were flown over chosen locations to aid the more detailed interpretation of the area.

During the past summer, a rather extensive geological survey was made over the entire block of claims and their immediate environs. The general geological problem involved here is one of a rather regional nature. The main magnetic feature was very broad and it was believed that close profiles were not necessary to define it. This was borne out in the few places where close spacing has been done.

The above geophysical and geological work is covered in three reports with associated maps which are attached.

1. Aero-magnetic interpretation prepared by Mining Geophysics Corporation, Limited, covers the airborne magnetic survey over this area. Anomaly "A" mentioned in their report refers to an aeromagnetic anomaly obtained over the iron formation known to the east of this area. The accompanying map at 400' per inch shows the approximate location of the original claim block with respect to the

airborne magnetic anomaly.

2. Ground magnetic interpretation as prepared by Mining Geophysics Corporation, Limited, covers the interpretation of ground magnetic survey. A geophysical map at 400' per inch accompanying this report combines the original ground survey data and the subsequent ground magnetic data.

3. Geological report covering the geological survey was prepared by Mr. G. E. Parsons who was in charge of the survey. His geological map at 400' per inch covering claim block in the immediate environs is attached.

During the spring of 1948 several diamond drill holes were bored. One of these holes is being reported at this time for assessment credit. The details of this hole are shown on a separate sketch and the log of the hole is supplied as evidence. The core was logged by Ivan Christopher, geologist for Mining Geophysics Corporation, Limited.

Supporting reports for the airborne survey, the ground geophysical survey and the geological survey follow in this order. A copy of the diamond drill log follows the above reports. Maps supporting the above reports are attached as follows:-

1. Airborne Survey.

1 map at 400' per inch covering the claim block.

2. Ground Magnetics.

1 map at 400' per inch covering the claim block.
1 detailed map of claim S-50388.

3. Geological Survey.

1 map at 400' per inch covering the claim block.
1 detailed map of claim S-50388.

4. Diamond Drilling.

1 location map of claim S-50388, showing details of diamond drill hole #5.

WORK DISTRIBUTED ACCORDING TO GROUPS OF CLAIMS FOLLOWS:

DISTRIBUTION OF WORK PER CLAIM GROUPS:

<u>WORK.</u>	<u>TOTAL ASSESS- MENT DAYS.</u>	<u>DISTRIBUTION OF WORK PER CLAIM GROUPS:</u>		
		<u>GEOPHYSICAL ASSESSMENT GROUP 1.</u>	<u>GEOLOGICAL ASSESSMENT GROUP 1. GROUP 2.</u>	<u>DIAMOND DRILLING ASSESSMENT GROUP 3.</u>
Line Cutting, Picketting	1,496	770	726	---
Ground Magnetic Measurements	240	240	---	---
Ground Geophysical Interpretation	348	348	---	---
Field Geology) Geological Interpretation)	908) 221)	---	1057	72
Airborne Magnetic Survey and Interpretation	444	444	---	---
Diamond Drilling	<u>378</u>	---	---	<u>378</u>
Total Days Per Group		1802	1783	72
Average Per Claim in Groups		204	202	12

Group 1 includes: Claims S-50312 through S-50392 inclusive.
Claims S-50627 through S-50633 inclusive.
Total 88 Claims.

Group 2 includes: Claims S-51018 through S-51023 inclusive.
Total 6 Claims.

Group 3 includes: Claims S-50389, S-50388, S-50387, S-51020, S-51021, S-51018,
S-51022, S-51023, S-51019.
Total 9 Claims.

Mr. H. C. Rickaby

-4-

November 19, 1948.

Work Distributed According to Claims Follows:-

<u>CLAIMS.</u>	<u>GEOPHYS.</u>	<u>GEOLOG.</u>	<u>DIAMOND DRILLING.</u>	<u>TOTAL.</u>
S-50627 through S-50633) S-50312 through S-50386) S-50390 through S-50392)	20.4	20.2	---	40.6
S-50387 through S-50389	20.4	20.2	42.0	82.6
S-51018 through S-51023	---	12.0	42.0	54.0

According to the above list, two years assessment credit is being asked for the three claims S-50387, S-50388 and S-50389. One years credit is being asked for on all the others.

Respectfully submitted,

E. W. Westrick

E. W. Westrick,
General Agent,
Dominion Gulf Company.

EWV/fr



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INTERPRETATION OF AEROMAGNETIC SURVEY OF
CENTRAL AFTON CLAIMS
for
Dominion Gulf Company

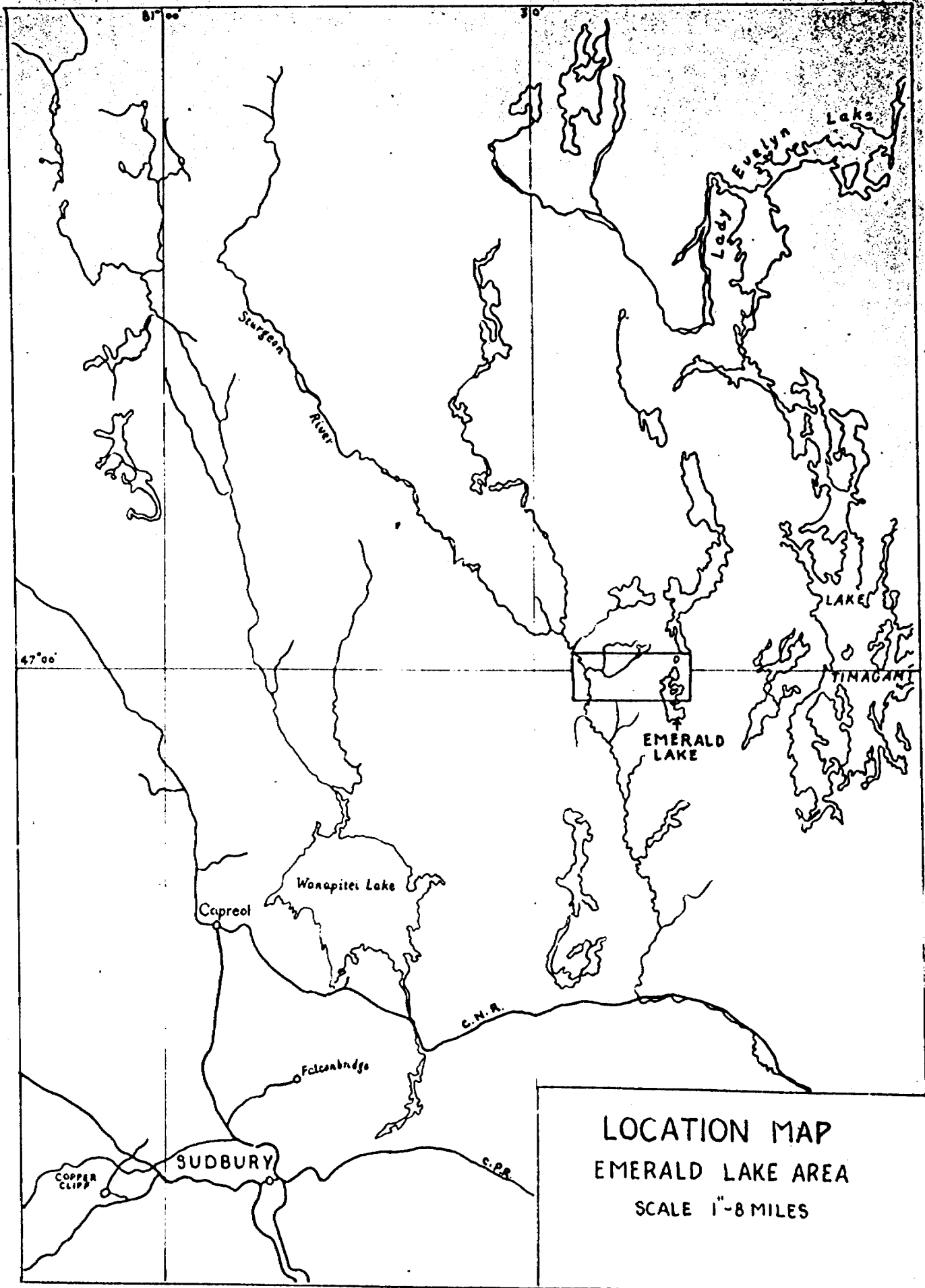


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LOCATION MAP
EMERALD LAKE AREA
SCALE 1"-8 MILES

INTERPRETATION OF AEROMAGNETIC SURVEY OF

Central Afton Claims

for

Dominion Gulf Company

SUMMARY

A survey of the Gulf claims in Afton Township, made with an airborne magnetometer indicated a large magnetic anomaly trending in a general east-west direction across the property. This anomaly has been interpreted as being caused by folded Keewatin iron formation bands underneath the flat-lying Cobalt and Keweenawan rocks which overlie these older Keewatin formations.

Folded iron formation southeast of the Gulf claims is the host rock for gold-bearing quartz veins at the New Golden Rose mine.

Estimates of the depth to the interpreted iron formation at B indicate that the iron formation is 300 feet below surface.

It is recommended that a magnetometer survey be carried out in an attempt to outline more precisely the structure suggested by the aerial results. It is further recommended that an exploratory hole be drilled to check the interpretation, and aid in evaluating the economic possibilities.

INTRODUCTION

The Central Afton property of Dominion Gulf Company is composed of 88 claims in Afton Township, Sudbury District, Province of Ontario. This property was surveyed with an airborne magnetometer in the summer of 1947.

CHARACTER OF THE REGION

Afton Township is in a rather remote section of the Timagami Forest Reserve. Great stands of red and white pine cover much of the region, although timbering operations are already showing their effect.

Topographic relief in Afton Township is a maximum of 750 feet with many hills two or three hundred feet high.

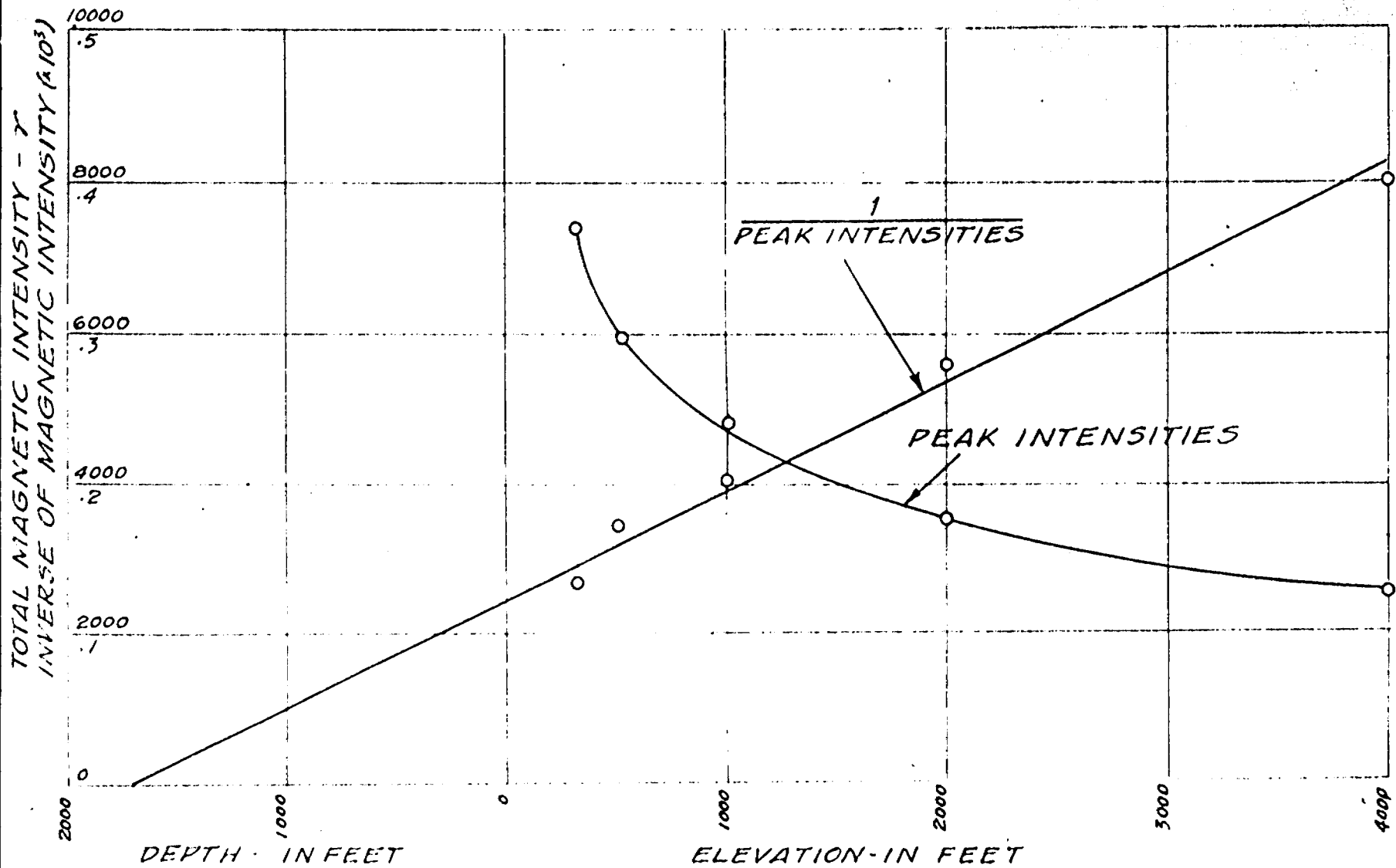
A motor road leads from North Bay to the New Golden Rose Mine and lumber camps on the east side of Emerald Lake in Afton Township.

PREVIOUS WORK IN THE AREA

The area attracted interest toward the end of the last century, after it was recognized that the Sudbury copper and nickel are associated with a diabasic type of rock. The discovery of silver with diabase at Cobalt in 1904 resulted in further interest in the rock. During this period general geological mapping was carried out by the Federal Government; most of the area has not been studied since.

Gold was found at Emerald Lake before 1900. A company was formed in 1909 and along with various successors made several attempts at production. It was not until 1934, however, that much progress was made. The Consolidated Mining and Smelting Company undertook development, and between 1937 and 1941 produced \$ 1,664,464 in gold from 144,237 tons of ore. Thus the grade was about \$ 11½ in gold per ton.

FIGURE 1 - DEPTH OF ANOMALY "B"
 ASSUMING LINE POLE:



ADDITION OF TWO "A" ANOMALIES
TO DOUBLE THE ANOMALY WIDTH.

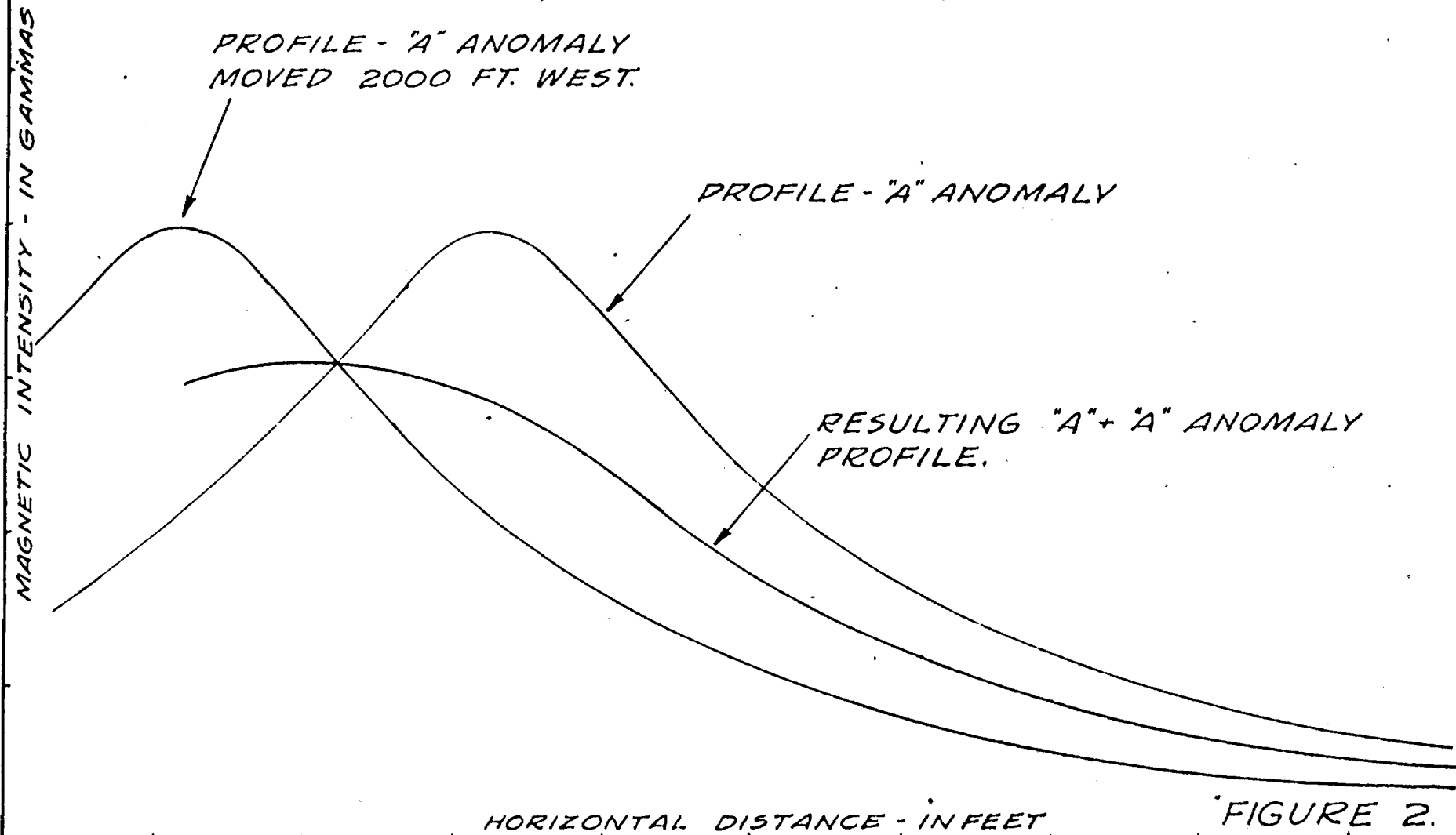


FIGURE 2.

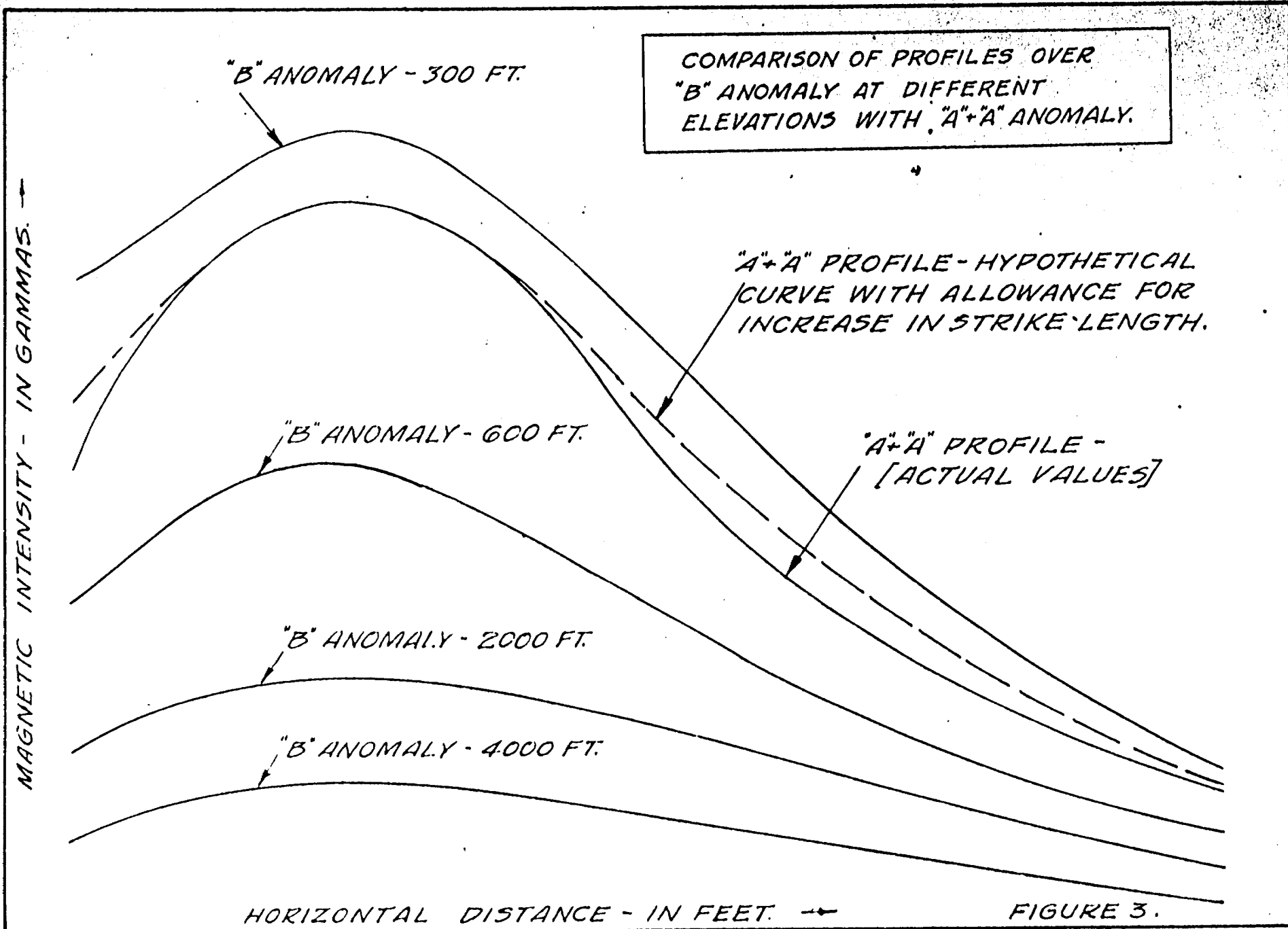


FIGURE 3.

Production ceased in 1941 (the mill stopped in May, the mine in September), and much of the mill machinery and other equipment was shipped to the Pindri Lake mercury deposits in British Columbia. The reason for closing is not known.

Numerous pits have been made in the iron formation between Emerald and Eagle Rock Lakes, all showing pyrite and some gold.

Within the past few years a zone of pyrrhotite and chalcopyrite has been stripped and surveyed by magnetometer, $1\frac{1}{2}$ miles southeast of the New Golden Rose. The owners are reported to be planning a diamond drill campaign.

In 1936 E. S. Moore examined parts of Afton and Scholes Townships. His report (Geology of the Afton-Scholes Area) appears in the Annual Report of the Ontario Bureau of Mines, Vol. 45, Part VI, pp. 38 - 48. No later work has been published.

GENERAL GEOLOGY

The Afton-Scholes area is underlain chiefly by the north half of a huge diabase sill remnant. This rock is believed to be of late Precambrian (Keweenawan) age. Its thickness is undetermined, but at least 250 feet is known to occur in places. It usually forms great plateau-like hills which are a prominent feature of the topography.

The next most abundant surface rock is the Cobalt sedimentary series consisting of conglomerate, greywacke, and quartzite. The diabase intrudes this formation, as if by preference, particularly at or near its base. Like the diabase sill, the Cobalt sediments lie within a few degrees of horizontal. Both the above types are younger than the gold deposits, so they must cover many places of economic value in Afton-Scholes and elsewhere.

On the Afton-Scholes boundary between Emerald and Eagle Rock Lakes, is a small "window" of early Precambrian rocks. It is in these that the main ore possibilities lie. In general, these early rocks are grouped as follows:

Keewatin:

Altered greenstones and schists outcrop in several places. The rock is steeply folded and is typical of the Keewatin in other areas.

Iron formation is very abundant, having been observed here in widths up to 250 feet. It is very magnetic due to a content of 15 to 50 percent magnetite. A piece of solid magnetite weighing 8 pounds was collected. Beautiful banding is due to interbedded red jasper and hematite. Some of the siliceous bands are quite porous, a feature Moore considers favourable to the passage of ore solutions. In connection with the iron formation, Moore states: "In places hematite and magnetite are almost sufficiently abundant to make a low-grade iron ore".

Timiskaming:

Conglomerate and greywacke of this age are closely associated with the banded iron. Moore believed these rocks form the basins of the larger lakes in the area due to their ease of weathering.

Algoman:

Feldspar porphyry occurs in several long narrow dikes at the New Golden Rose, and in larger intrusives to the east, between Emerald and Eagle Rock Lakes. There are gray and reddish varieties. It is generally believed that the ore-bearing solutions are related genetically to these intrusives, so their presence is significant.

All known outcrops on the Afton claims are part of the diabase sill indicated above.

GEOPHYSICAL SURVEY

The aeromagnetic data obtained by using an airborne magnetometer at an elevation of 500 feet was plotted from points identified on aerial photographs using strip photographs taken during the flight. These points were transferred to a base map prepared from a mosaic of aerial photographs, and the whole enlarged photostatically to a scale of 1" - 400' for purposes of interpretation.

GEOPHYSICAL INTERPRETATION

The steep dipping, older Precambrian rocks of the property are overlain by flat lying younger Cobalt sediments and Keweenaw diabase. Aeromagnetic readings would be governed to some extent by the thickness of diabase and by the magnetic character of the older rocks underneath the diabase.

Because of the rugged topography it was not feasible to fly at a constant elevation above ground. Moreover, the early Precambrian formations beneath the Cobalt and Keweenaw have an unknown topography. Therefore, the aeromagnetic data plotted on the final map do not bear any fixed relationship to surface topography or to Archean topography.

DISCUSSION OF GEOPHYSICAL RESULTS

The "B" anomaly appears to be the most interesting from the economic viewpoint. In pursuing a study of this anomaly, the most relevant material available is the contour map prepared from the magnetic results obtained at 500' elevation.

Due to peculiarities in the instrument, such as time lag, the accuracy of this map is somewhat questionable. It is definite, from the study of similar maps in other areas that time lag in the instrument is noticeable in large abrupt anomalies. In this case the anomaly is rather broad. The effect is to decrease the magnetic gradient on the approach,

displace the peak in the direction of flight, and increase the gradient on the far side of the anomaly. The peak value may also be decreased. These results indicate a combination of time lag and attenuation. No attempt has been made to determine the magnitude of these errors or separate the two factors, but they are believed to be small.

A study of the direction of flight in the vicinity of "B" anomaly, however, would indicate that these facts are partially responsible for the strike and spacing of magnetic contours. There is a definite narrowing of the contours between "B" and "C" anomalies, which may not be entirely real, but which does appear to be due chiefly to a thinning of the magnetic zone. A study of the profile across "B" anomaly indicates a greater breadth than "A". Since "B" is a continuation of "A" some form of folding or faulting is suspected in this area. There is little doubt that the contours give a pseudo-strike to "B" anomaly. This would tend to make calculated depths greater than the actual depth to the body or bodies causing the anomaly.

A depth is found in Figure 1 by using the peak value of "B" anomaly obtained at 4,000', 2000', 500' and 300' elevations. If "B" anomaly approaches the condition of a line source, a straight line relationship should exist between elevation and the reciprocal of the peak values. This relationship seems to exist, and a depth of 1700' is indicated. This depth is believed to be false and indicates, as has been noted from other examples, that the instrument would appear to be affected at higher altitudes by sources of great apparent depth. An empirical estimation of depth is made in the following paragraphs by a comparison of profiles.

A ground magnetic profile over "A" anomaly indicates the probable width of the zone causing the anomaly. A study of the aeromagnetic

profiles obtained by flying over "B" anomaly at 300' and 500' elevations indicates that "B" anomaly is about twice as wide as "A" anomaly.

To simulate the profile over "B" anomaly, two "A" anomaly profiles were placed side by side and added. This produced a profile "A + A" in Figure 3 which would be the result of a body having the width of "B" anomaly, but not the strike length. This is a simplified approach which accounts for the results. Figure 3 shows profiles at elevations of 4,000', 2,000', 600' and 300' over "B" anomaly, as well as the theoretical "A + A" profile. The profiles over "A" anomaly were obtained by flying at 450' elevation. If the 300' profile over "B" anomaly were to agree exactly with the theoretical profile "A + A", the depth would be of the order of 150'. From a comparison, "A + A" seems to have a steeper gradient. Thus, the 300' profile should appear below the "A + A" profile in Figure 3. This would add roughly 150' to the depth, giving a depth of 300' \pm 100.

There is the additional information that, at 500', "A" anomaly appears as one anomaly, but at 300' it is partially resolved. The 300' profile over "B" anomaly shows a suggestion of dividing. This would place the depth in the vicinity of 200'. "B" anomaly is, however, not the same as "A", and the depth previously given is believed to be the more accurate of the two.

GEOLOGICAL INTERPRETATION

The interpretation of the aeromagnetic results is based largely on the small "window" of early Precambrian rocks outcropping between Emerald and Eagle Rock Lakes, since in the remainder of the area, flat lying Cobalt sediments and Keweenawan diabase conceal the older Keewatin and Timiskaming rocks. The Keewatin banded iron formation at Emerald Lake (believed to be folded into a syncline with drag folds on the limbs) is

responsible for the high magnetic anomaly (anomaly "A") in this locality. Anomaly "B" to the northwest is interpreted by analogy to anomaly "A".

Sufficient information is not available at the present time to obtain a detailed picture of the structure at "B" and "C" anomalies. The greater width of "B" anomaly when compared to "A" may be due to one of several structures. Possible explanations that may be suggested would include repetition of iron formation bands by drag folds similar to the drag folds on the limbs of the syncline at "A" anomaly; repetition of iron formation bands by faulting; broadening of the major syncline due to the western plunge, possibly accentuated by vertical movement along the Emerald Lake fault.

There is a definite change in the trend of the magnetic contours, between "B" and "C" anomalies. This break in the contours has been interpreted as the result of a fault which has been located along a lineament trending north from Plum Lake. The narrowing of the anomaly between "B" and "C" and the decrease in magnetic intensity can, at present, be accounted for by a variety of interpretations as in the case of widening at "B" anomaly. The most probable interpretation on the basis of present information appears to be that the syncline rises at this point with the result that much of the iron formation has been removed by erosion.

The results of the ground magnetic survey now in progress, should make possible a more detailed interpretation of the structure in the vicinity of "B" and "C" anomalies.

When the trends of the iron formation bands have been more clearly defined, it may be advisable to stake 3 or 4 additional claims immediately west of Plum Creek.

RECOMMENDATIONS

It is recommended that plans be made to proceed with diamond drilling to explore "B" anomaly, following completion of the ground magnetometer survey. The first hole would be probably spotted on Claim No. 50335, the exact location depending on the results of the ground survey. It would be desirable to drill a nearly vertical hole, and wedge the hole after passing through the Keweenaw and Cobalt cover.

Respectfully submitted,

MINING GEOPHYSICS CORPORATION LIMITED

J. C. Frahtz
J. C. Frahtz

J. E. Noakes
J. E. Noakes *ped*

H. S. Scott
H. S. Scott *ped*

H. B. Keevil
H. B. Keevil

Toronto,
January 22, 1948.



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INTERPRETATION OF GEOMAGNETIC SURVEY

of the

CENTRAL AFTON CLAIMS

Report No. 10 - CENTRAL AFTON CLAIMS



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Figure 2 - Map showing location of "Central Afton Claims".
Figure 3 - Photograph of profile model.

MAP UNDER SEPARATE COVER

- Map 1 - Geomagnetic Contour Map, scale 1" = 400',
showing proposed Diamond Drill Holes, iron
formation bands, faults and claim boundaries.

INTERPRETATION OF THE GEOMAGNETIC SURVEY OF THE
CENTRAL AFTON CLAIMS

Report No. 10.

SUMMARY

Ground magnetic results over the Central Afton Claims have been interpreted in conjunction with aeromagnetic data obtained previously. The general interpretation based on aeromagnetism has not been changed, but the greater detail of the ground results has provided a more complete picture for the recommendation of further exploration by diamond drilling. However, due to the thickness of flat-lying diabase and Cobalt sediments over the vertically lapping Keewatin rocks of interest, the iron formation bands and structure are still not accurately delineated. Three holes have been recommended over the high anomaly, in what is considered a promising zone; these should be considered as exploratory in nature.

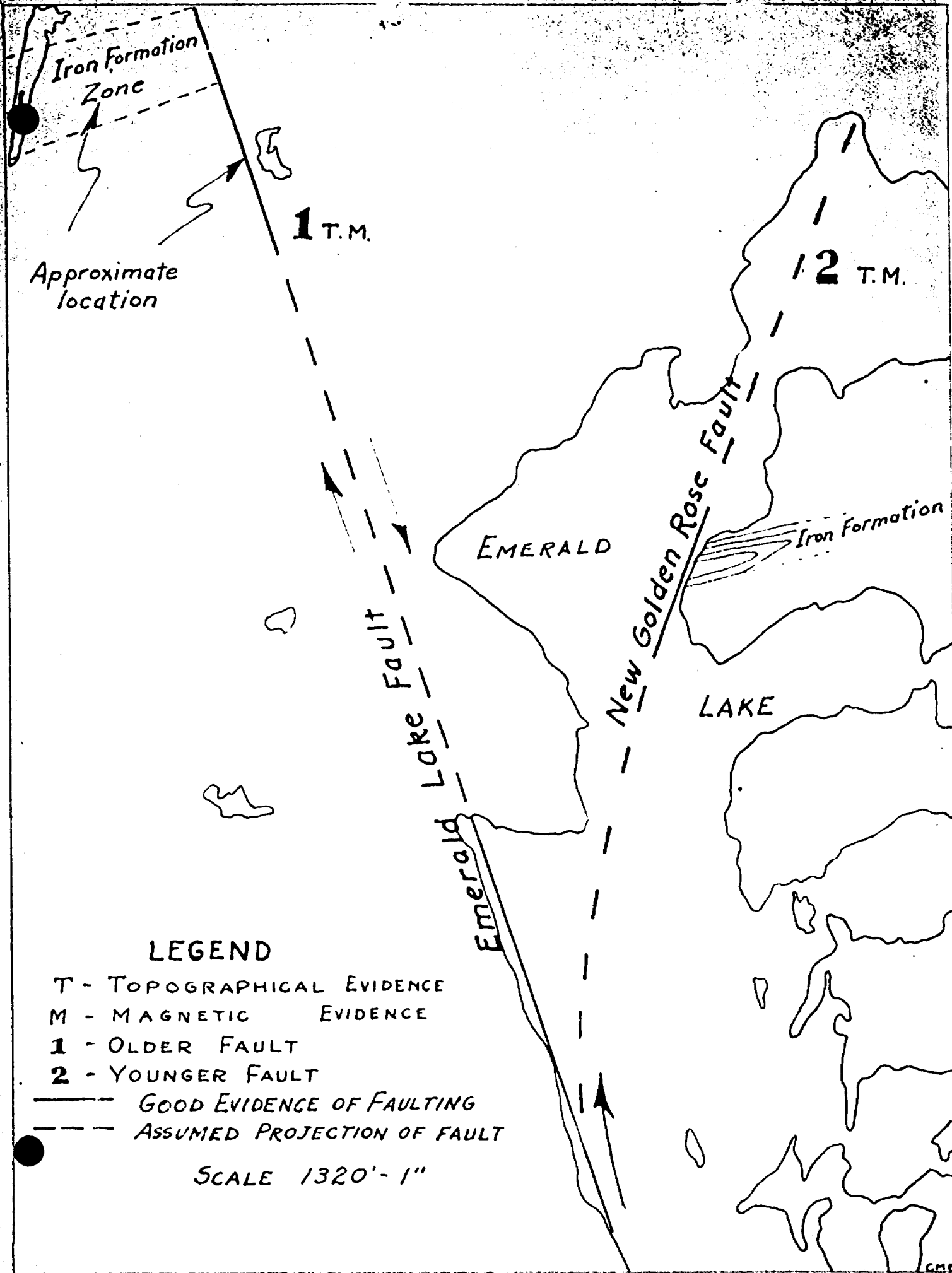
INTRODUCTION

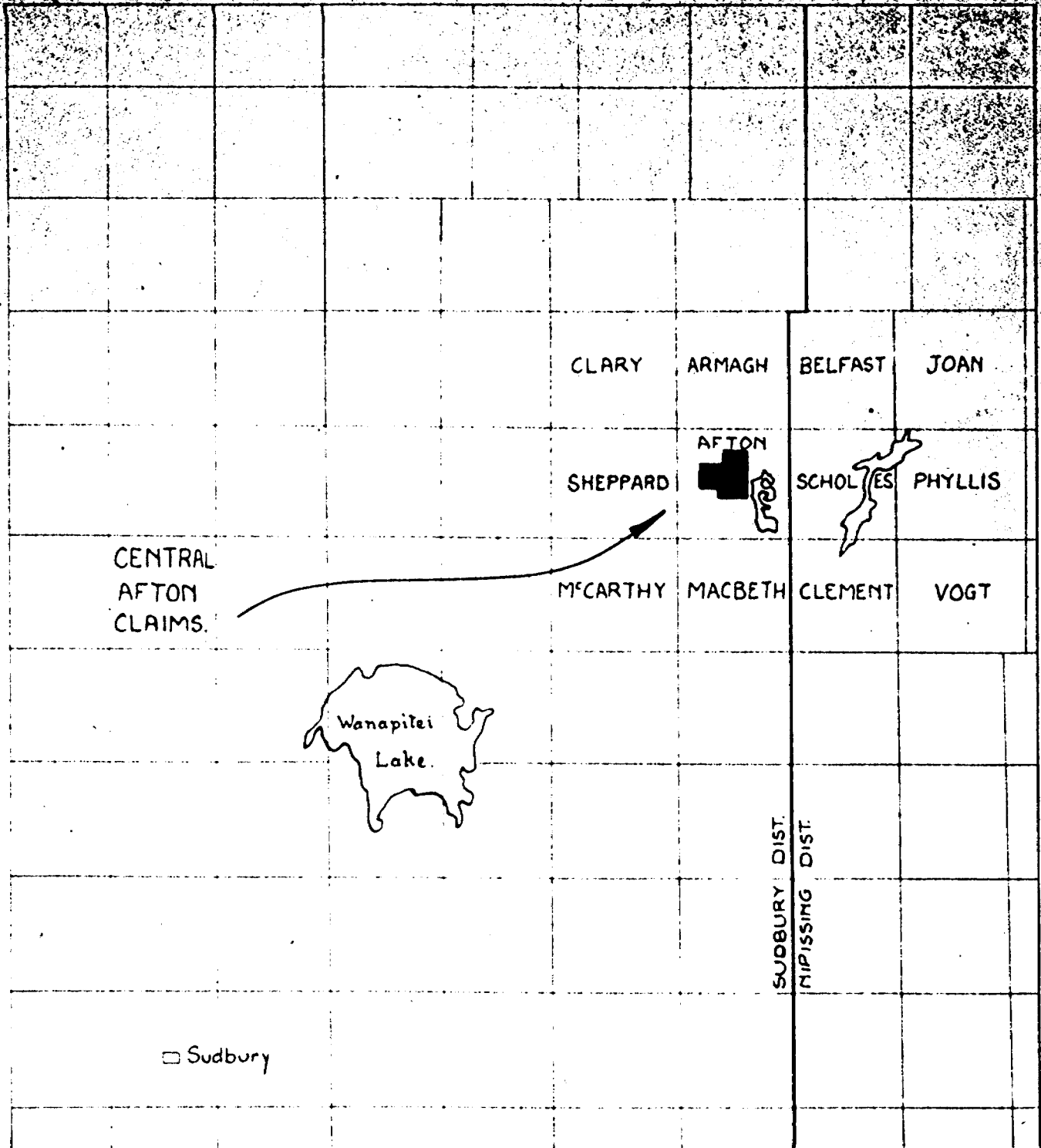
Two previous reports (Nos. 3 and 9) have been based upon aeromagnetic work in an area west of Lake Timagami. The first was of a rather preliminary nature, and the general geological interpretation made at that time outlined the probable existence of important structural features beneath a widespread diabase sill. Further study was called for, and the results of this work appeared in the second report. Recommendations were made to stake a certain area ("B" anomaly) and acquire additional data by ground magnetometer measurements, before proceeding with drilling.

The staking and ground survey of 88 claims has now been completed, and the present report deals particularly with the ground results.

Details of location, topography, and geology are covered in the previous reports and are, therefore, not repeated here. It is interesting to note that since the last Timagami report was written, an old report of the Ontario Bureau of Mines has been read, which mentions the occurrence of greenstone on the shore of a small lake a short distance west of Emerald Lake. This is not shown on later maps, but suggests the possibility of finding Keewatin rocks in deep valleys on the property.

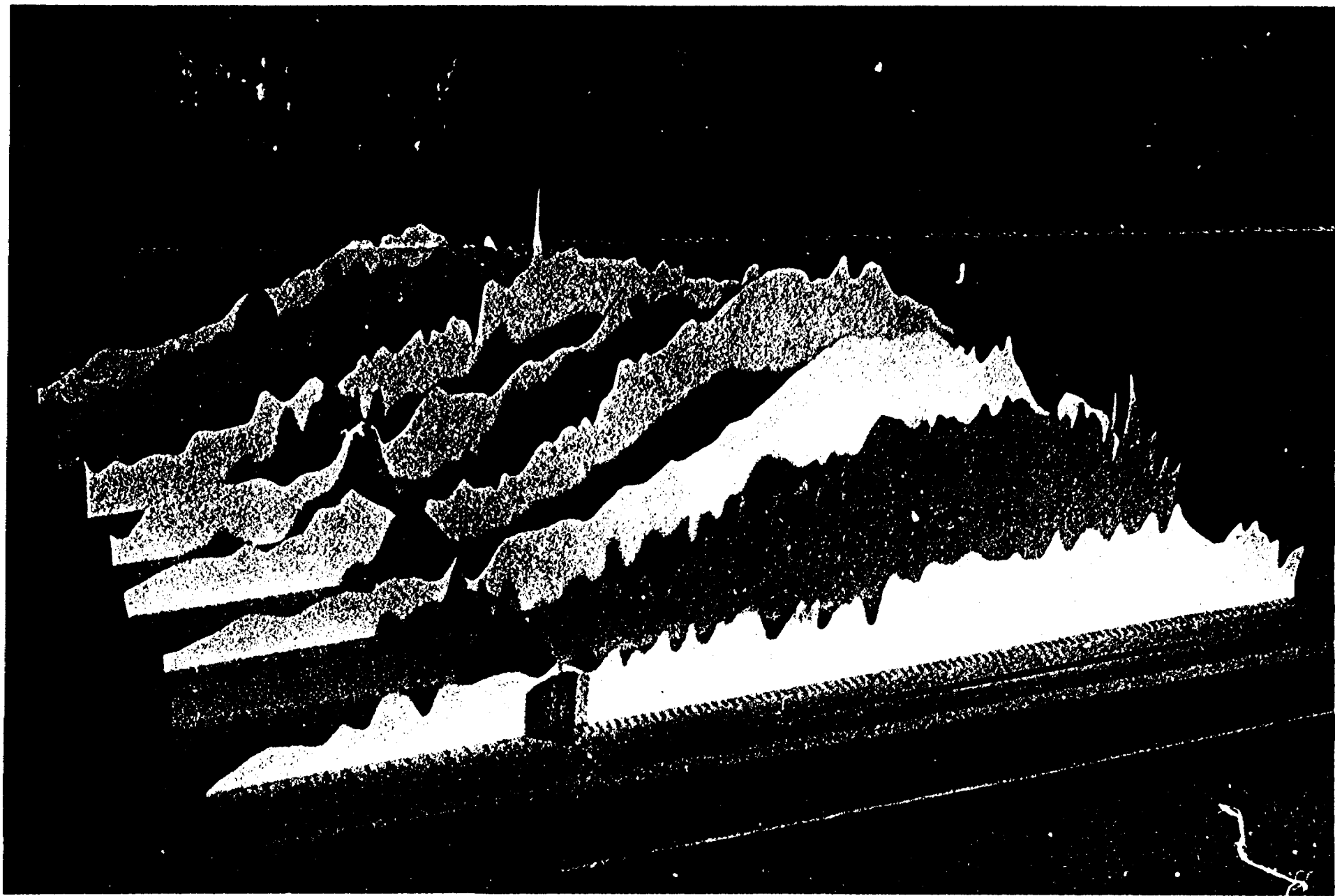
The present interpretation, while based primarily upon the ground survey results, takes into careful consideration all other available evidence, including aeromagnetic data, geology and topography. This report, therefore, should come nearer the truth regarding actual conditions beneath the diabase sill.





LOCATION MAP

1 INCH = 8 MILES



THE GROUND MAGNETIC SURVEYField Work:

The surface geophysical survey over the "B" anomaly area was carried out between January 6th and February 18th, 1948. Control was established by means of a base-line, cut along the east-west mid-township line of Afton Township for a total distance of 17,785 feet. This line starts at the west shore of Emerald Lake opposite the New Golden Rose Mine. From the base line picket lines were established north and south at intervals of 1320 feet to cover the area staked. Three lines for additional detail were laid out in a north-south direction across the strongest portion of "B" anomaly.

Vortical magnetic components were measured at intervals of 200 feet, 100 feet, or at shorter intervals along the lines as required by the rate of change of the magnetic profile. Magnetic tie-ins were consistently good during the survey, and in spite of cold weather, often 30 degrees below zero, the work was completed without delay.

Problems of Interpretation:

As a general rule, magnetic profiles correspond more closely to their geological causes (that is, the profiles show more detail) as the measurements are made nearer these rocks. Thus airborne data recorded at a great height show very broad integrated features. As the profiles are measured at lower levels, more detail appears, and readings on bare outcrops should ordinarily give the most sharply defined data possible, although the relative significance of anomalies may vary as mentioned below.

In this particular case, the early Precambrian formations in which we are interested underlie several hundred feet of later diabase and sediments. In a sense therefore, the ground data are "airborne" results taken at the lowest possible altitude. In this way they offer greater possibilities than the M. A. D. for detailed interpretation, but are subject to influences which tend to minimize this advantage. Variations in magnetic intensity may be due not only to early Precambrian features, but to changes in the diabase and sediments. Such changes are of three types, and these may occur separately or in combination: (1) the sill may vary in thickness, shown in part by the topography (this changes the altitude above the lower formation, and also puts an unknown amount of magnetic material between the observer and the Keewatin Temiskaming rocks); (2) the diabase itself may vary in magnetic effects from place to place; (3) rugged topography, especially in a somewhat magnetic formation as the diabase, introduces errors in the readings. In addition, local effects may be caused by magnetic boulders in overburden, and these must be discarded in interpretation.

The problems of interpretation are thus complex, but it is gratifying to note a rather close correspondence between airborne and ground results, the latter showing greater detail, but still in general agreement with the former. Unassessable errors due to the diabase and sediments appear to be small in most places.

A model has been made of the ground magnetometer profiles to aid in their interpretation.

It must be remembered that while the following interpretation is considered to be more reliable than any heretofore made, it is still

based upon limited information. The bedrock in which we are interested will likely remain unseen until it is cut by the diamond drill. Drilling results can then be studied in the light of geophysical evidence, and vice versa. Thus as more precise data are accumulated, the degree of accuracy of interpretation may be increased, and the whole interpretation brought up to date. Radical changes in previous conclusions might conceivably be required and additional magnetic measurements may be desirable. Geophysical work from within the drill hole may be helpful. Each successive drill hole can then be located with more knowledge of actual conditions and should, therefore, reveal more critical information.

GENERAL INTERPRETATION

Magnetic intensity as recorded on the ground varies greatly within the area, with a range of some 6500 gammas. At the property boundary the vertical intensity is already about 4000 gammas above normal for the region, and this increment has been added to the ground magnetic data to give values approximately comparable to the aeromagnetic data.*

The anomaly region corresponds remarkably well with that outlined by the airborne work. Moreover, the east end of the anomaly stops quite abruptly in the vicinity of line 00, confirming and establishing with greater accuracy the major north-south fault interpreted from the airborne survey.

The peak of "B" anomaly appears to be at a small lake lying between lines 2640 W and 3960 W (north), again checking and improving on the aeromagnetic observations. At this locality it may reasonably be supposed that the Keewatin iron formation comes nearest the surface, and

that the overlying rocks are thinner than at any nearby point along the strike of the iron formation. For this and other reasons diamond drilling should be started at this site.

DETAILED INTERPRETATION

The general geology as exposed east of Emerald Lake has been described. Isoclinal folds of Keewatin lavas, pyroclastics and iron formation, and Temiskaming sediments, intruded by Algomian-type porphyries and hydrothermal solutions, underlie several hundred feet of Cobalt sediments and Keweenawian diabase sill. The Keewatin iron formation is most distinctive geomagnetically, and a detailed analysis of the magnetic contours amounts largely to an interpretation of structure in this formation. Adjacent rocks and structure may be interpreted when magnetic differences are sufficient to persist through the various effects of the overlying rocks. Major structural features in the iron formation may be expected to extend into adjacent horizons.

Folding:

Previous reports suggested that the westerly plunge of folds (chiefly a large syncline) observed on the east side of Emerald Lake may continue only a short distance west of the Emerald Lake fault, after which the plunge is reversed. That is, west of "B" anomaly the plunge is to the east. Still further west, the plunge is again to the west.

Results of the ground survey support this idea. Going west from the peak of "B" anomaly, the folds rise in a north-south cross-anticlinal axis just west of line 13200W. West of this axis the plunge is steeply to the west.

At numerous places on the property the contours are strongly contorted. This appears to be evidence of folding and possible faulting in the iron formation, related in some cases to drag along the Emerald Lake fault, and in others to strong regional isoclinal folding. At any rate, structures favourable for porphyry intrusion and hydrothermal deposits are indicated by such conditions, as observed at the New Golden Rose Mine on Emerald Lake.

The high magnetic values in the vicinity of the "B" anomaly peak are of this nature, and their occurrence in a locality in which the diabase is considered to be thin is regarded favourably.

Other localities that merit attention, especially if that just mentioned confirms present hopes, are as follows (the coordinates identify the central part of each locality, not a specific point):

Line	1320W	7800N
	5280W	3100N to 5700N
	6600W	1800N to 3400N
	7920W	1900N to 3600N
	9240W	2500N to 3400N
	10560W	2600N to 3100N
	11820W	1500N to 2100N
	15840W	2100N to 3000N

At the New Golden Rose Mine fold was found in sulphides in iron formation. The possibility of silver or base metal occurrences should not be overlooked.

Faulting:

The Emerald Lake fault is confirmed by the fairly rapid drop in magnetic intensity not far east of line 2640W. An east-west profile across the area passing just south of the island in the "b" anomaly lake, shows this clearly. The fault extends south along the west shore of Emerald Lake, as previously supposed.

Faulting beneath Emerald Lake is not as simple as originally

interpreted. The Emerald Lake fault by itself fails to explain certain conditions just west of the New Golden Rose Mine. For example, magnetic values in the southeast corner of the property should be much higher if the New Golden Rose iron formation is projected to the Emerald Lake fault, for the magnetic influence of such a horizon is reflected in readings up to a thousand feet distant. Again, magnetic data over Emerald Lake do not show a western continuation of the iron formation beneath the lake. A very sudden decrease in magnetic intensity occurs west of the shore line near the New Golden Rose Mine which is even sharper than the "B" anomaly drop at the Emerald Lake fault.

Therefore, an additional fault has been interpreted just off the shore at the New Golden Rose. This fault strikes east of north, and merges with the Emerald Lake fault to the southwest. A wedge-shaped block lies between the two faults, and as yet the position of any iron formation in this block is not known. Vertical movement may have raised or lowered the iron formation such that it was completely removed by erosion, or was moved to a depth where its magnetic effect was greatly reduced. An alternative explanation is that the wedge moved relatively south, spreading the east and west blocks apart, accompanied by a relative north movement of "B" anomaly with respect to "A". This may have resulted from fault movements of 2 different ages (See Figure 1).

The new fault, which may be called the Golden Rose fault, is in line with topographic linears interpreted as faults in adjoining Keewatin areas by Dr. J. T. Wilson.

It is found that the anomaly due to low grade iron formation

on the island south of the New Golden Rose Mine is not picked up on a profile immediately west of the island. No reason for this can be given at present.

The aerial photographs indicate a possible east-west fault north of "B" anomaly. Linears are not seen within the property boundaries because of the younger diabase, but to the east and west fault-line features have been identified. These are in line with disturbances in the magnetic profiles north of "B" anomaly.

A marked irregularity at the north end of the 1320W profile may coincide with the intersection of this east-west fault and the Emerald Lake fault.

CONCLUSIONS

The ground geomagnetic survey of Dominion Gulf's property in Afton Township has added detail and character to the general picture already established by airborne work. The original interpretation has not been greatly changed, but it has been improved and the present analysis may be used with more confidence in outlining future programs.

Drilling is now recommended, and the results of such work will enable more detailed and precise interpretation of the geophysical data.

Future plans, therefore, depend upon the drill results either directly or indirectly.

RECOMMENDATIONS

It is recommended that a diamond drill be moved onto the property as soon as possible. It is much simpler to transport drilling equipment into this area during the winter than after the snow has gone,

and the long breakup period makes such activity extremely difficult.

A north-south diamond drill section is proposed through the small lake at the peak of "B" anomaly. Such a section is particularly well located, not only from the standpoint of structural interpretation, but because it lies in a topographic depression; the diabase and Cobalt sediments (if the sediments occur here) should be of less than average thickness in the valley.

Hole No. 1 should be located and cased on the west shore of "B" Lake and drilled in a southerly direction at -60° from horizontal to a core depth of 1000'. This hole can be continued far enough to give a preliminary cross-section of reasonable width. The dip chosen is a compromise between depth testing and section drilling.

Hole No. 2 should be located and drilled at -45° to continue the cross-section started by hole No. 1. The location and dip of this hole will depend to some extent on the thickness of diabase in the immediate area as determined by hole No. 1.

Hole No. 3 should be laid out in such a way as to continue the above drilling cross-section in a northerly direction from the first Keewatin intersection in hole No. 1. Depending on the thickness of diabase, hole No. 3 should be drilled at as flat an angle as possible, and continued as far as possible to gain information across the favorable zone without having to drill through a great thickness of diabase.

As the core is studied, the new information should be constantly applied toward further interpretation of the geophysical data. This point cannot be over-emphasized.

Drilling should be in charge of a competent man, who will see that the "coregrabbing" is properly done, that mixups do not occur and

that holes are correctly laid out; during the summer months he should prospect for possible outcrops of early Precambrian rock. The whole property should eventually be examined for such occurrences - for this area of supposedly barren diabase has not been examined carefully by prospectors. Several promising localities have been mentioned above which might well be investigated first.

The entire program should be carried out under close geological and geophysical guidance.

Respectfully submitted,

MINING GEOPHYSICS CORPORATION LIMITED

B. M. Bartley
B. M. Bartley *pk*

[Signature]

H. B. Feevil

H. S. Scott
H. S. Scott *pk*

Toronto, Ontario,
March 9, 1948.

APPENDIX

Property: Central Afton Claims, Dominion Gulf Company, situated in the central part of Afton Township, Timagami Area, Sudbury Mining Division, Timiskaming District, Province of Ontario. Comprising 88 claims, viz:

S-50312 to S-50392 (inclusive)
S-50627 to S-50633 (inclusive)

Dates of Survey:

Linecutting, chaining, picketting:

January 7, 1948	12 men	12 man days
" 8, "	10 men	10 " "
" 9 to 19, 1948	12 men	132 " "
" 20, 1948	10 men	10 " "
" 21 to 25, 1948	12 men	60 " "
" 26, 1948	10 men	10 " "
" 27 to Feb. 1, 1948	12 men	72 " "
February 2, 1948	8 men	8 " "
" 3, 1948	12 men	12 " "
" 4, 1948	8 men	8 " "
" 5, 1948	10 men	10 " "
" 6 to Feb. 8, 1948	10 men	30 " "

Magnetic Measurements:

December 21, 1947	2 men	2 man days
January 6, 1948	2 "	2 " "
January 20, 1948	2 "	2 " "
January 26, 1948	2 "	2 " "
February 2, 1948	4 "	4 " "
February 4, 1948	4 "	4 " "
February 5, 1948	2 "	2 " "
February 5 to Feb. 8, 1948	2 "	6 " "
February 18, 1948	2 "	2 " "

Calculating, plotting, interpretation, mapping:

February 10 to March 9	9 men (intermittently)	$\frac{57}{457}$ " "
------------------------	------------------------	----------------------

Baseline:

From Post No. 1 of Claim S-50628, baseline runs West along Central Township line for a distance of 16990 feet and East for a distance of 795 feet. Total length of baseline, 17,785 feet.

Picket Lines:

Turned off from baseline at right angles every quarter mile.

Miles of line:

27.6 miles

Magnetometer Operators:

T. G. Robinson
S. L. Spafford
F. J. Wank

Assistants:

H. Lee
C. Sonstones

Linecutters:

T. G. Robinson and 11 assistants

Draughtsman:

R. L. Hill

Geologists and Geophysicists:

C. M. Bartley, H. G. Scott, J. Frantz,
E. F. Keevil, J. A. Hoakes

Instruments Used:

Askania Type Magnetometer
Sensitivity: 39.7

Wolfson Type Magnetometer
Sensitivity: 43.2

Location of "Main Base":

O OC on baseline. In field - 1515 gamma
On map - 5515 gamma

No. of Magnetic Measurements:

1231

PART II

DISCUSSION OF MORE DETAILED GROUND SURVEYS

SUMMARY

The detail over the extension of B anomaly shows little except local magnetic effect. The magnetic values over the quartz veins are not large enough to successfully outline the veins. Some correlation between local anomalies and mineralization appears to exist in the North-west corner of the property. In view of the inadequate nature of geological maps, and the unsuccessful drilling to date, it is recommended that diamond drilling be discontinued, and geological mapping be undertaken.

DISCUSSION OF MORE DETAILED GROUND SURVEYS

DETAILED AREAS

In addition to the magnetic detail obtained at B anomaly (or "B" Lake) three other areas were investigated with closely spaced lines:

- (a) From B anomaly to the south west for a distance of three-quarters of a mile.
- (b) From B anomaly to the north east for three-quarters of a mile.
- (c) Claim S-50388.

(a) and (b) were done to trace any extensions of B anomaly, while Claim S-50388 was investigated because of the discovery of a large quartz vein striking toward "B" Lake.

DISCUSSION OF RESULTS

The magnetic values to the south west of "B" Lake substantiated the values obtained from the air. Only minor changes in the direction of the magnetic contours were made. These variations were due to areas of slightly higher permeability at or near the surface of the sill.

Investigations to the north east of "B" Lake disclosed a long, narrow anomaly whose strike was that of the main anomaly. The anomaly appears to be a series of peaks superimposed on a general gradient to the north and hence is most likely due to a localized concentration of magnetite near the surface of the diabase.

Investigations over Claim S-50388 were undertaken in an attempt to trace a wide quartz vein associated with ankerite, sericite, schist, altered sediments and some acidic intrusive material, and carrying

minor sulphide mineralization.

The magnetic values over the vein at the east side of the claim were only slightly lower than to either side, while the values near the west boundary were higher over the vein. The general trend of the anomalies was to the north and north east. No definite change in the contours occurred in the vicinity of the vein. If the position of the quartz was not known the slight magnetic variations as the vein was crossed, could very easily have been attributed, and may actually be due, to variations of the magnetite concentrations in the sill.

CONCLUSIONS

The detailed magnetic work has not changed the shape or appearance of the B anomaly. The anomalies to the north east are local effects superimposed on the flank of the B anomaly. The magnetic values over the quartz vein are not well enough marked to delimit the vein and hence further magnetic readings to trace the quartz zone in this section would have little value.

It should be noted, however, that geological mapping by C. M. Bartley in the North-west corner of the Central Afton property has outlined vein material and altered rocks of sedimentary origin, which seem to bear some relationship to the magnetic contours from the ground survey, in Claim S-50392.

RECOMMENDATIONS

It is recommended that diamond drilling be discontinued, at least temporarily. The property should be geologically mapped in detail, the surrounding country studied in reconnaissance, and the data

assessed in the light of all existing knowledge before considering further drilling.

APPENDIX "A"

EXAMINATION OF TWO THIN SECTIONS OF HAND SPECIMENS OF
CARBONATE ROCKS IN CLAIM S-50388.

The fine-grained specimen consists of an inter-growth of fine-grained quartz, sericite, and an iron-bearing carbonate, probably ankerite. There is a distinct schistosity. This appears to have been a siliceous sediment which has been carbonatized.

The coarse-grained specimen consists of the same minerals as above, but only a small amount of quartz and sericite were seen, interstitial to the abundant ankerite. This appears to be a carbonate vein.



41116NW0057 0019 AFTON

040

GEOLOGICAL REPORT FOR ONTARIO DEPARTMENT OF MINESDOMINION GULF - AFTON CLAIMSLocation:

The property is situated in the central part of Afton Township, Timagami Provincial Forest, District of Sudbury. It is accessible by road via River Valley on the Canadian National Railway; the distance from that locality being approximately 40 miles.

Property:

The property consists of 94 claims with the following claim

numbers:	S50312 - S50392 inclusive
	S50627 - S50633 "
	S51018 - S51023 "

The property is owned outright by:

Dominion Gulf Company
203 Bay Street
Toronto, Ontario

Topography:

The topography of the claim group is quite rugged with hills rising 200 to 300 feet above the general elevation. Sharp valleys and steep bluffs are quite common.

The west portion of the property is covered mostly with second growth poplar, maple, birch, spruce, pine and tag alders. In the east portion, a lumbering firm is cutting good stands of red and white pine. In the general area of "E" Lake, there are good stands of birch and maple.

Mapping Methods and Purpose:

The claim group was traversed using the picketed and taped north south claim lines. Traverses were run off these lines using the compass and pace method. The following persons in addition to the writer, were employed in this work.

I. C. Christopher, Graduate Geologist, University of Saskatchewan

B. K. Glassford, Geology Student, McGill University
H. R. Hogan, Geology Student, McGill University
E. Norppa, Student, Ontario Institute of Mining, Haileybury
D. A. Lewis, Draftsman

Two geological maps are included in this report:

Dominion Gulf Claim Map Scale 1" - 400 feet.
Detail Geological Map of Claim S50388.

These maps are all compiled entirely by Dominion Gulf personnel from traverses made in the field.

The purpose of the geological study was to attempt to find a reason for the high anomaly in the claim group. A great deal of time was spent recording strikes and dips of fracture patterns and stripping out-crops for signs of mineralization, in the hope that some cause of the anomaly might be revealed.

GEOLOGY

General:

The property is underlain by Nipissing diabase and gently folded sediments of Cobalt age. No outcrop evidence could be found of the Keewatin rocks that outcrop to the east on Emerald Lake, but there is no reason to doubt that they represent the basement rocks under the Cobalt sediments and Nipissing diabase on the claims.

Table of Formations:

Post-Diabase	- Quartz veins, basic dikes.
Nipissing	- Diabase.
Cobalt	- Glacial tillites and greywackes.

Cobalt Sediments:

These are not well exposed on the property, but due to the fact that they underlie the diabase sill on the property, they were observed and studied to the east and north. These are typical glacial sediments with tillites and greywackes predominating.

Tillites have a dark fine matrix and contain a high percentage of angular granite boulders. Where in contact with the iron formation on

the large island in Emerald Lake, the boulders are mostly of that formation. This tillite appears to be the basal member of the Cobalt series in the area.

The greywackes vary from a fine grained dark unbedded, to a well varved type. These are well exposed on the west shore of Emerald Lake in contact with the diabase sill. A few outcrops of contorted fine grained greywackes were found in the upper part of Claim 50329. The outcrops are on top of a hill and are surrounded by diabase. They probably represent a remnant of the Cobalt sediments that once capped the diabase sill.

To the north of the property on Obabika Lake, and the lake immediately to the west, arkosic sediments with isolated angular pebbles are common. These arkoses show only slight signs of bedding.

The attitude of the Cobalt sediment varies considerably. Where observed in the centre of the Emerald Lake "window" of Keewatin rock, they are quite flat. On the shore of Emerald Lake, at the New Golden Rose Mine, immediately to the east of Gulf claims, they dip steeply to the west. Underground evidence at that mine, also indicates a rapid thickening of the Cobalt sediments west from this Keewatin "window". On the west shore of Emerald Lake the greywackes are rather flat lying to gently folded. Immediately to the north of the property the greywackes are gently folded and have a general overall dip to the north or north-west.

Diabase:

This is the chief rock type exposed on surface in the claim group. It appears to be the normal Nipissing diabase described in the Ontario Department of Mines reports. It mostly shows a medium diabasic texture. Pegmatitic phases are locally common and ^{generally in the form of} dikes which have no definite contacts with the normal diabase. The pegmatitic phases, high in ferromagnesian content, generally contain sufficient magnetite to be

quite magnetic.

A thin section of the normal diabase encountered, from the south-east corner of Claim S50343 in the area of an anomaly, is described by Dr. Smith of the University of Toronto, as follows: "This is a massive gabbro with a distinct diabasic texture". It has more than the normal amount of plagioclases, which is the variety labradorite. There is a small amount of alteration of the augite at grain boundaries to a sodic hornblende. Magnetite is interstitial."

Little field evidence of alteration or mineralization of the diabase was noted. Special care was taken while mapping the diabase to note any change in texture in the hope that some evidence of the nature or attitude of the sill might be obtained, however, no conclusive trends were noted. At the observed contacts with the Cobalt sediments, the diabase definitely had a finer texture, but this rapidly graded into the normal type.

The attitude and thickness of the sill is one of prime importance. In the east portion of the property, the depth varies from nil to a few hundred feet and there rests on the Cobalt sediments. In the north part of the property and the area immediately to the north, the evidence points to the conclusion that this is the north limit of the sill, with some of the sediments lying on top and some below the sill. A diamond drill hole to the west of "B" Lake, in the centre of the property, indicated a depth of 1190 feet of diabase before passing into Cobalt sediments. This would indicate a decided increase in depth from the east and north contacts. This may indicate a basin or synclinal structure or may be due partly to faulting.

Basic Dikes:

Approximately 400 feet south of #4 post, claim #50321, there is exposed for a length of 50 feet on the face of a small cliff, a rather

flat lying dike of basic rock. It had sharp irregular contacts with the diabase and contains fragments of diabase and also another dark rock which was quite magnetic.

Faulting:

Fracture slips in the diabase and sediments were quite common, and a large number of strikes and dips were noted. It was hoped that some structural clues might be obtained from these. Local variation in the magnetic deviation have caused variations in the readings that possibly do not exist. There are two sets of values that stand out; namely, $60^{\circ} \pm$ and $140^{\circ} \pm$ (magnetic). A number of topographical features also show trends in these directions, and it is highly probable they represent faults. Lack of horizon markers makes any evidence of direction or amount of movement, highly conjectural.

Mineralization:

Except for a few specks of sulphides, and some magnetite, which were most likely original constituents of the diabase, no signs of mineralization were noted on the property, except quartz veins and some chalcopryrite, locally associated with them.

There are a number of quartz outcrops in the claims, all having the same general appearance. Two large masses or veins of quartz were located, sampled and mapped, namely the "East Quartz Showing", claim S50388, and the "West Quartz Showing" in Claims S50379 and 92. The "East Quartz Showing" is exposed in two groups of outcrops, one having an exposed length of 450 feet, and the other 250 feet with widths up to 75 feet. There is no surface evidence for the dip of this vein in these outcrops. An outcrop to the east in claim S51021, which is possibly a continuation of the same vein, dips 60° to the north, and strikes S 60° E. It is the writer's belief that the vein occupies an irregular striking and dipping shear in the diabase. The quartz in this showing is mostly white, with

locally a slight blue tinge. Sulphide mineralization is almost nil. Inclusions of a green sheared chloritic rock, which is most probably sheared diabase, are found in the quartz. No values in gold were obtained from any of the channel or grab samples.

The "West Quartz Showing" outcrops in two claims, S50392 and S50379, giving an exposed length of 2000 feet, and widths up to 200 feet. The exposed width is accentuated due to the flat dip of the vein to the south. The quartz in this showing is very similar in appearance to the "East Quartz Showing" just described. However, with this showing, some masses of sulphides with malachite stains were found with a width of 6 to 8 inches which assayed 22½ copper, and nil in gold. Heavy overburden prevented any length being opened on this exposure by the mapping party. It is the writer's opinion that the veins are post-dabase, although possibly related to that intrusion, and that they are of little economic value. Veins similar to these in the area are known to carry very erratic high grade pockets of gold.

G. E. Parsons

(Sgd.) G. E. Parsons
Graduate Geologist
University of Toronto

GEP:lj

November 10th, 1948



41116NW0057 0019 AFTON

900



ONTARIO

DEPARTMENT OF MINES

SUDBURY MINING DIVISION

SUDBURY, ONTARIO

December 1, 1949.

Dr. M. E. Hurst,
Provincial Geologist,
Parliament Buildings,
Toronto, Ontario.

RECEIVED
DEC 2 1949
GEOLOGICAL BRANCH
DEPARTMENT OF MINES

Dear Sir:

I enclose herewith copies of diamond drill logs covering diamond drilling performed on mining claims S.50316 et al, Afton Township, by the Dominion Gulf Company.

Yours very truly,

Hurst
Mining Recorder.

LB.

AFTON



THE MINING ACT - DEPARTMENT OF MINES
DIAMOND DRILLING LOG

AFTON CLAIMS AREA

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. 1 PAGE NO. 1

DRILLING COMPANY		COLLAR ELEVATION 1175.88'	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED March 26, 1948	DATE COMPLETED April 11, 1948	DATE LOGGED	LOGGED BY			LAT 5279.3' NORTH. DEP. 734.16' EAST CENTER LINE OF TWP.	DATUM: EMERALD LK 1000'	
EXPLORATION CO., OWNER OR OPTIONEE ULTIMATE DEPTH 1263.0'		DATE SUBMITTED	SUBMITTER'S NAME DIRECTION AT START COLLAR 61° 250-61° 500-60° 750-63°				SECTION (T.P., Lot, Con. OR Lot. and Long.) BEARING: 170° TRUE (COMP)	
							PROPERTY NAME	

FOOTAGE FROM TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS	
						FROM	TO			
		Casing				0.0	15.0			
		Diabase, medium grained fairly massive, a few rusty fractures				15.0	41.0			
50		Diabase, medium grained, considerable fracturing, slight rust along seams				41.0	48.0			
		Diabase, medium to fine grained, fairly massive see 15.0 - 41.0				48.0	58.0			
100		Diabase, fine grained, grey-greenish alteration and pitted surface				58.0	63.0			
		Diabase, fine grained, grey color, pitted greenish alteration in places, numerous small quartz stringers. 1 1/2" quartz-carbonate stringer at 75.0'				63.0	91.0			
150		Diabase, medium to coarse grained, finer grained sections 121-125 and 152-155 ft., a few scattered quartz stringers less than 1"				91.0	202.5			
		Diabase, fine grained, gradual contact with above grey color, numerous quartz stringers.				202.5	214.0			
		Diabase, coarse grained				214.0	219.0			
200		Diabase, fine grained, quartz stringers				219.0	229.0			
		Diabase, lighter grey color, finer grained, some dark streaky minerals				229.0	234.0			
		Vitreous quartz, some carbonate				234.0	234.5			
		Diabase, fine grained, light grey color with stringers and patches of quartz and pink feldspar				234.5	236.0			
250		Diabase, fine grained, stringers of quartz and quartz-carbonate				236.0	256.0			
		Diabase, fine grained, quartz stringers, pinkish quartz-carbonate stringers 256.5-261.0				256.5	263.5			
300		Diabase, medium to coarse grained				263.5	284.0			
		Diabase, fine grained, numerous stringers quartz and quartz carbonate, 3" quartz 285', 2" quartz 286.5',				284.0	328.0			



THE MINING ACT - DEPARTMENT OF MINES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

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MOLE NO. 1 PAGE NO. 2

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.	
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY				LOCATION (T _{p.} , Lot, Con. OR Lot. and Long.)		
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)				PROPERTY NAME		

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE +	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +	
							FROM	TO			
			slight streak chalcopryrite 289.5' with scattered grains of pyrite, some pinkish carbonate and considerable quartz in stringers and veinlets				284.0	328.0	(continued)		
350			Diabase, coarse grained, massive, greenish. Small patches fine grained				328.0	426.0			
			Diabase, texture varies from medium to coarse, a few quartz stringers				426.0	459.0			
400			Diabase, coarse grained, gradually becoming dark grey rather than greenish gray, small translucent greenish talcose seams at 504' and 507' and at most fracture seams				459.0	538.0			
			Diabase, coarse grained, normal light grey color. 2" quartz veinlet at 547' shows slight chalcopryrite and pyrrhotite.				538.0	555.0			
450			Diabase, coarse grained, dark grey color, greenish talc along fracture seams				555.0	576.0			
			Diabase, coarse grained, light grey color, fine grained patches carry small stringers and veinlets of quartz				576.0	602.0			
500			Diabase, mostly fine grained dark grey, becoming darker from 600.0', a few small patches coarse grained, greenish talc along fracture seams				602.0	675.0			
			Diabase similar to above, a few small quartz stringers and patches of yellowish green alteration				675.0	735.0			
550			Diabase, light grey color, medium to coarse grained, dark mineral with quartz stringer at 739.0' possibly tourmaline				735.0	745.0			
			Diabase, fine grained, dark grey, coarser grained patches a little lighter in color				745.0	784.0			
600			Diabase, rather coarse grained, light grey color, some talc along seams				784.0	791.0			



THE MINING ACT - DEPARTMENT OF MINES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. 1 PAGE NO. 5

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.		
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft		LOCATION (T _p , L _{or} , C _{or} , OR Lat. and Long.)			
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft					
					ft					
					ft		PROPERTY NAME			

FOOTAGE FROM TO		ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM TO		SAMPLE LENGTH	ASSAYS	
			Quartzite, grey to pink Lost core 1168.5-1170.0 1172.5-1173.0				1164.5	1172.5	5		
1250			Greenstone (see 1160.6-1164.5) Quartzite, grey Greenstone, fairly sil. speckled in places, lower contact not definite				1172.5	1173.0	0		
			Quartzite, grey to pink. Two inches quartz-epidote at 1203.5. Four inches quartz with some carbonates and alteration at 1205.0. Shearing 1239.0-1244.5 at 30° to core Lost core 1181.3-1182.4 1184.2-1185.0 1186.5-1187.3 1228.0-1229.0 1240.5-1242.5 1245.0-1250.0				1173.0	1174.5	5		
			Quartzite, grey to pink in color Lost core 1251.5-1252.0 1258.0-1260.0				1174.5	1178.0	0		
			1263.0 END OF HOLE				1178.0	1250.0	0		
			Diabase, fine grained at contact								
			Greywacke ? dark, dirty green, fine grained to dense texture, rather uniform. Grey wacke locally impregnated with diabase solutions.				1250.0	1263.0	0		
			Greywacke locally arkosic, very fine grained, uniform texture; varies from dirty green to mottled pinks.				0.0	920.0	0		
							920.0	990.0	0		
							990.0	1263.0	0		

Check logged by
Parsons June 26,
1948



THE MINING ACT - DEPARTMENT OF MINES
DIAMOND DRILLING LOG

CL 50335

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. 2 PAGE NO. 1

DRILLING COMPANY		COLLAR ELEVATION 1262.88		DIP OF HOLE AT collar		LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM		MAP REFERENCE NO.		CLAIM NO.	
DATE MOLE STARTED April 17, 1948		DATE COMPLETED May 21, 1948		DATE LOGGED		LOGGED BY		LAT & 5178.8' NORTH 375.0' EAST		LOCATION (Twp., Lot, Con. OR Lat. and Long.)	
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED		SUBMITTED BY (Signature)		DIRECTION AT START					
ULTIMATE DEPTH 1298.0'				DIRECTION AT START		BEARING: VERTICAL		CENTER LINE OF TWP		PROPERTY NAME	
				DEP: VERTICAL							

FOOTAGE		ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS	
FROM	TO						FROM	TO			
			Casing				0.0	9.0			
			Diabase, fine to medium grained, dark grey color				9.0	35.0			
			Diabase, medium to coarse grained, patchy variations in texture. At 123.0 greenish streaks in core suggest banding				35.0	127.5			
50			Diabase, fine to coarse grained, variable				127.5	133.0			
			Diabase, medium grained				133.0	150.0			
			Diabase, medium to coarse grained; at 168.0 light colored coarse grained patch								
100			Diabase, coarse grained, light grey to green in color. Small amount of pyrite along narrow slip at 215.8				189.0	237.5			
			Diabase, fine grained and slightly sheared; cut by numerous stringers of quartz. Minor amount of carbonates				237.5	240.0			
150			Diabase, fine grained with small stringers of quartz-carbonates				240.0	245.5			
			Diabase, coarse grained, greenish-grey color. 1/4" quartz stringer from 246.5 to 247.5 along core. Medium grained patch at 265.0				245.5	275.5			
200			Diabase, fine grained, somewhat sheared. Quartz-carbonate stringers; fine black streaky mineral at 278.5				275.5	279.3			
			Diabase, coarse grained, light grey-green color. A few finer grained patches				279.3	295.0			
250			Diabase(?) Fine grained, light green color, somewhat sheared and fractured				295.0	296.0			
			Rusty seam. Diabase, fractured and altered, heavily coated with rust and hematite. Appears to be brecciated				296.0	296.5			
300			Diabase, fractured and altered, small seams and spots of rust and hematite; greenish color				296.5	298.0			



THE MINING ACT - DEPARTMENT OF MINES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. **2** PAGE NO. **3**

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft		LOCATION (Tp., Lot, Con. OR Lat. and Long.)	
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft			
					ft			PROPERTY NAME

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION <small>Colour, grain size, texture, minerals, alteration, etc.</small>	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +	
							FROM	TO			
			Lost core 475.6-476.5 476.9-477.6 479.6-480.0				475.0	482.5		(continued)	
650			Diabase, medium to coarse grained; altered and fractured in spots. Lost core 486.5-487.0 Diabase, fine grained, sheared and altered. Core badly broken				482.5	501.5			
700			Lost core 503.2-504.0 Diabase, medium to coarse grained; grey-green color, a few fine grained patches				504.0	567.5			
750			Diabase, finet to very coarse grained. Coarse grained patches at 567.5, 569.0-571.5, 574.5-576.0. These patches are almost pegmatitic in texture. Coarse grained patches show numerous secondary minerals including epidote				567.5	577.5			
			Diabase, medium grained with small patches of fine grained, and others coarse grained. Finer grained towards 643.3.				577.5	643.3			
800			Diabase, medium to coarse grained with some very coarse grained patches. Alteration and secondary minerals, such as epidote are usually found in the coarse grained patches. A few small quartz-carbonate stringers. Fine grained patch from 731.5 to 734.0. Core considerably fractured and broken.				643.3	793.0			
850			Lost core 762.2-763.0 783.6-784.								
			Diabase, medium grained, slightly sheared and altered				793.0	816.0			
900			Diabase, medium grained at start, becoming progressively coarser grained. Very coarse grained and heavily altered from 834.5 to 841.0				816.0	841.0			



THE MINING ACT - DEPARTMENT OF MINES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. 2 PAGE NO. 4

DRILLING COMPANY		COLLAR ELEVATION		BEARING OF HOLE FROM TRUE NORTH		TOTAL FOOTAGE		DIP OF HOLE AT collar		LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM		EXP. REFERENCE NO.		CLAIM NO.	
DATE HOLE STARTED		DATE COMPLETED		DATE LOGGED		LOGGED BY						LOCATION (Twp., Loc., Con. OR Loc. and Long.)			
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED		SUBMITTED BY (Signature)								PROPERTY NAME			

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE	YTD SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS	
							FROM	TO			
			Alteration consists of carbonates, epidote Lost core 819.7-820.0 830.8-831.0 835.6-836.0				816.0	841.0	(continued)		
950			Diabase, medium grained, dark grey in color Lost core 844.4-845.0 854.6-855.0				841.0	855.6			
1000			Diabase, fine to medium grained; dark grey color. A few talcose seams Lost core 862.1-863.0 865.5-866.0				855.6	875.0			
			Diabase, fine grained; massive				875.0	880.0			
1050			Diabase, medium to coarse grained; very coarse in spots A few quartz stringers. Considerably altered from 898.0 to 908.0				880.0	912.4			
			Diabase, coarse to fine grained. Progressively more sheared. Heavily sheared sections appear to be made up of streaky fine grained green material with streaky stringers of quartz and quartz-carbonates. 0.6' quartz and quartz carbonates 920.0-920.6 Lost core 923.0 to 931.5				912.4	923.0			
1100			Diabase, sheared and altered. Spots of quartz and quartz carbonates				931.5	932.7			
			Quartz, white to grey. Spots of sheared material and carbonates				932.7	933.3			
1150			Diabase, sheared. Carbonates and some quartz				933.3	933.8			
			Quartz, white to grey; some sheared material and carbonates				933.8	935.0			
1200			60% white to grey quartz 40% sheared diabase and carbonates				935.0	936.0			



THE MINING ACT - DEPARTMENT OF MINES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. **2** PAGE NO. **5**

DRILLING COMPANY		COLLAR ELEVATION		DIP OF HOLE AT		LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM		MAP REFERENCE NO.		CLAIM NO.	
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY	DIP OF HOLE AT				LOCATION (T _p , Lot, Con. OR Lat. and Long.)			
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)	DIP OF HOLE AT							
				DIP OF HOLE AT							
				DIP OF HOLE AT							
PROPERTY NAME											

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION <small>Colour, grain size, texture, minerals, alteration, etc.</small>	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS	
							FROM	TO			
1250			95% white to grey quartz. Some white carbonates. Small amounts of sheared material				936.0	939.5			
			Diabase, sheared, 30% quartz-carbonates				939.5	940.8			
			Diabase, sheared; stringers and small patches of carbonates and alteration				940.8	944.2			
			Diabase, medium to coarse grained				944.2	952.8			
			Diabase, medium to coarse grained; light alteration				952.8	964.0			
			Diabase, medium to fine grained; lightly sheared.				964.0	966.5			
1300			Quartz-carbonate stringers. 1" grey quartz at 966.0								
			Slight pyrite along slip at 965.9								
			Lost core 964.2-965.966.5-967.5								
			Diabase, medium to coarse grained. 1 1/2" quartz-carbonate at 971.7				967.5	1027.5			
			Lost core 993.5-995.0								
			Diabase, medium grained; patches fine grained and altered. Fine grained patches usually show light shearing				1027.5	1035.0			
			Quartz-carbonate stringer at 1025.8 shows light pyrrhotite								
			Diabase, medium grained; greenish color, lightly altered. Patch of quartz and alteration 1049.7-1050.7 shows light pyrrhotite and chalcopryite and coarse laths of hornblende				1035.0	1057.5			
			Diabase, medium grained, lightly sheared. Numerous stringers quartz and quartz-carbonates				1057.5	1063.4			
			Quartz, white to grey. Light fine pyrrhotite and chalcopryite around carbonate stringer at 1064.0				1063.4	1064.6			
			Diabase, medium grained; lightly sheared and altered. Numerous small quartz-carbonate stringers.				1064.6	1069.2			



THE MINING ACT - DEPARTMENT OF MINES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. 2 PAGE NO. 6

DRILLING COMPANY		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY		ft		LOCATION (Twp., Lot, Con. OR Lat. and Long.)	
EXPLORATION CO., OWNER OR OPTIONEE		DATE SUBMITTED	SUBMITTED BY (Signature)		ft			
					ft			PROPERTY NAME

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS		
							FROM	TO				
			Diabase, medium grained; narrow quartz stringers (1/2") at 1073.0 (with epidote stringers) and at 1083.0. Fairly massive				1069.2	1164.0				
			Diabase, medium grained				1164.0	1188.5				
			Diabase, dark grey-black color, finer grained. Sil. bleached section 1192.0-1193.0				1188.5	1195.0				
			Greywacke, possibly quartzite, light grey, fine grained				1195.0	1196.0				
			Lost core 1196.0-1204.0									
			Greenstone, fine grained, dark color				1204.0	1210.7				
			Sil. bleached				1210.7	1211.4				
			Greenstone, fine grained, dark color				1211.4	1212.0				
			Diabase, fine grained, grey, contacts gradational				1212.0	1215.5				
			Diabase, fine to medium grained. 3" of medium coarse at 1222.0. Contacts gradational				1215.5	1227.0				
			Greenstone, dark green. Contacts not definite				1227.0	1243.5				
			Quartzite, pink to grey				1243.5	1286.4				
			Lost core 1254.0-1257.0									
			1271.0-1273.0									
			1275.0-1276.0									
			Greenstone, fine grained, dark green. Gradational contact, some carbonate ribbons				1286.4	1298.0				
			1298.0 END OF HOLE									
			Check logged by Parson, June 26, 1948									
			Diabase, fine grained at base				0.0	1190.0				
			Greywacke ? as in Hole #1				1190.0	1243.0				
			Greywacke as in Hole #1				1243.0	1298.0				



THE MINING ACT - DEPARTMENT OF MINES
DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

DATUM: EMERALD LAKE 1000'
CLAIM: 50388

FILL IN ON EVERY PAGE

HOLE NO. 3 PAGE NO. 1

DRILLING COMPANY		COLLAR ELEVATION 1134.2	BEARING OF HOLE FROM BULL NOSE South 10° E	TOTAL FOOTAGE	DIP OF HOLE AT COLLAR	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED May 24, 1948	DATE COMPLETED May 28, 1948	DATE LOGGED	LOGGED BY			LAT: 85' EAST ALONG PICK LINE FROM LINE "R"		
EXPLORATION CO., OWNER OR OPTIONEE ULTIMATE DEPTH 344		DATE SUBMITTED	SUBMITTED BY (Signature)			DEP. 150' N10°W FROM THIS POINT.	BEARING: SOUTH 10° EAST	
			DIRECTION AT START: COLLAR 50° 344'46°				PROPERTY NAME	

FOOTAGE FROM	TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS	
							FROM	TO			
			Casing				0.0	8.0			
			Diabase				8.0	65.0			
			8.0-12.0 medium to coarse grained								
			12.0-37.0 darker, finer grained, less diabasic								
50			37.0-41.5 medium to coarse grained								
			41.5-43.0 dark, fine grained								
			43.0-44.0 slightly sheared, 1" patch of carbonate at 42.8								
			44.0-46.0 slightly sheared								
100			46.0-57.6 medium to coarse grained								
			57.6-64.0 dark grey, fine grained, slightly sheared with irregular ribbons and patches of carbonate								
			64.0-65.0 dark, fine grained, sheared								
150			Lost core 65.0-66.5								
			Diabase; dark grey altered diabase				66.5	67.0			
			White, rusty, vuggy quartz				67.0	68.0		None	
			Lost core 68.0-72.0								
200			White rusty quartz with considerable carbonate, quite vuggy				72.5	76.0		Trace	
			Lost core 76.0-77.1								
			White, rusty quartz, vuggy				77.1	78.2		None	
			Lost core 78.2-80.0								
250			Quartz				80.0	80.7			
			Lost core 80.7-82.1								
			Grey fine grained sheared and altered diabase. Shearing at 20° to core				82.1	87.8			
			As above with 50% rusty quartz and carbonate				87.8	88.5			
			Lost core 88.5-89.0								
300			Diabase, grey-green; slight elongation at 20°				89.0	91.0			



THE MINING ACT - DEPARTMENT OF MINES
DIAMOND DRILLING LOG

AFTON CLAIMS AREA

CLAIM : 50388

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. 4 PAGE NO. 1

DRILLING COMPANY		COLLAR ELEVATION 1117.7	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT collar	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM LOCATION LAT. 300' S 10° E AND 64.5' E 10° N OF HOLE NO. 3.	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED MAY 29 1948	DATE COMPLETED MAY 31, 1948	DATE LOGGED	LOGGED BY		ft		LOCATION (Twp., Lot, Con. OR Lat. and Long.)	
EXPLORATION CO., OWNER OR OPTIONEE ULTIMATE DEPTH 242.		DATE SUBMITTED	SUBMITTED BY (Signature)	DIRECTION AT START	ft			PROPERTY NAME
				BEARING : NORTH 10° W	ft			
				DIP : 8 45°	ft			

FOOTAGE F M TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE	CORE SPECIMEN FOOTAGE	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE		SAMPLE LENGTH	ASSAYS +
						FROM	TO		
		Casing							
		Diabase							
		9.0-33.5 medium to coarse grained				0.0	9.0		
50		33.5-37.0 dark, fine grained, speckled appearance				9.0	242.0		
		37.0-38.0 bleached, silicified, a few specks of pyrite							
		38.0-76.0 medium coarse grained							
100		76.0-78.0 grey-green, slightly sheared, with some carbonate stringers							
		78.0-120.0 medium coarse grained							
		120.0-127.0 grey, fine grained; slightly silicified							
		127.0-170.5 medium coarse grained							
		170.5-172.0 dark, fine grained							
150		172.0-238.0 medium coarse grained							
		238.0-240.0 dark, fine grained							
		240.0-242.0 medium coarse grained							
200		242.0 END OF HOLE							

**DIAMOND DRILLING ON
AETON CLAIMS**

DRILL HOLES NO. 3, 4, AND 5
ON CLAIMS S 50389 & S 50388

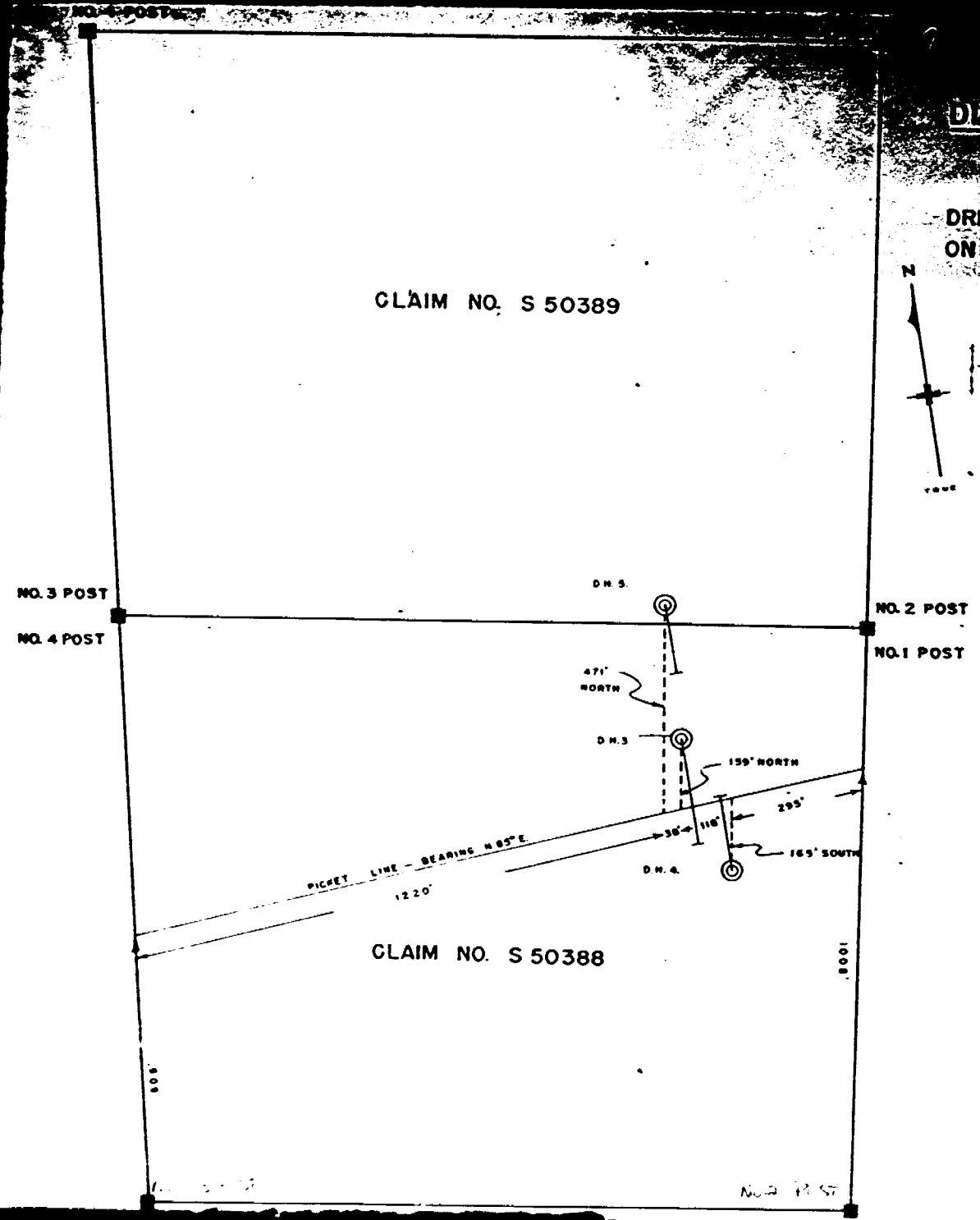
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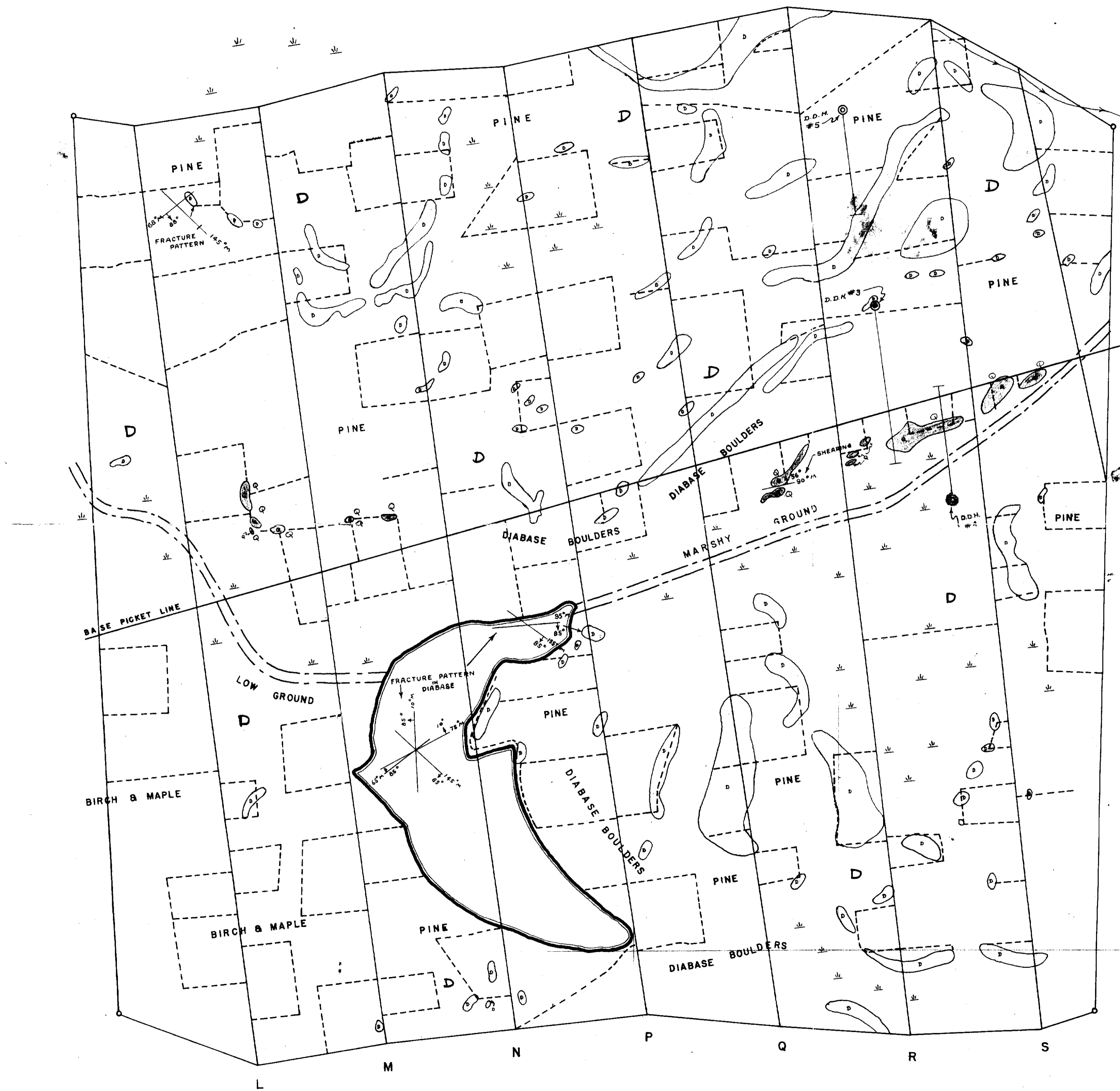


LEGEND



DRILL HOLE
DIRECTION AND HORIZONTAL
PROJECTION.





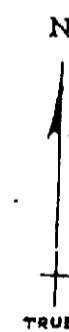
AFTON TWP.

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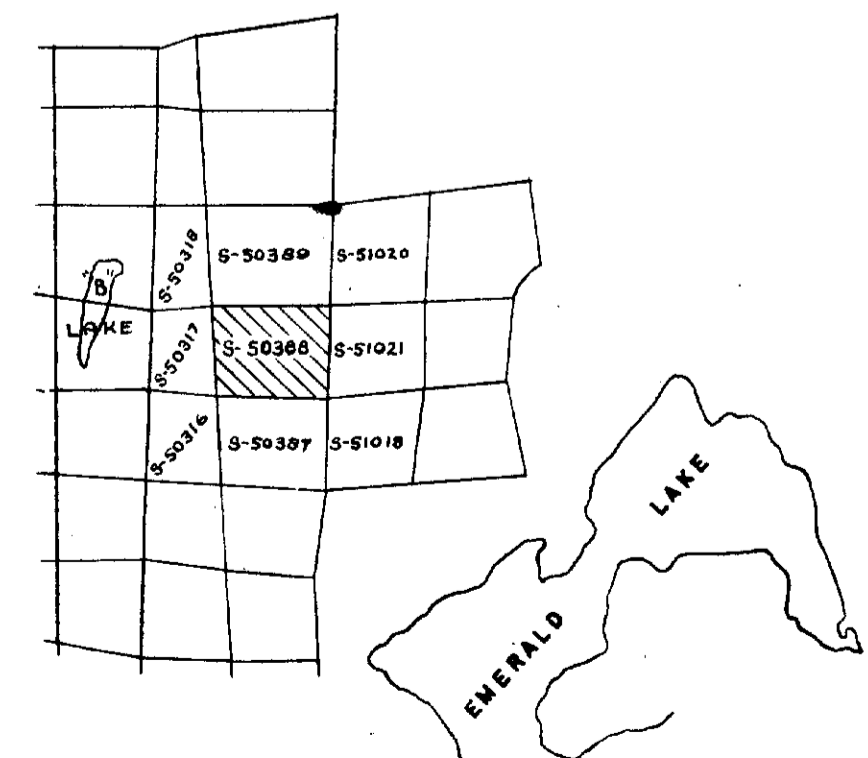
DETAIL OF CL. 50388

LEGEND

- DIABASE
- QUARTZ
- TRAVERSE
- WINTER ROAD
- DIAMOND DRILL HOLE
- DIRECTION & HORIZONTAL PROJECTION
- LINES L-S ARE PICKET LINES

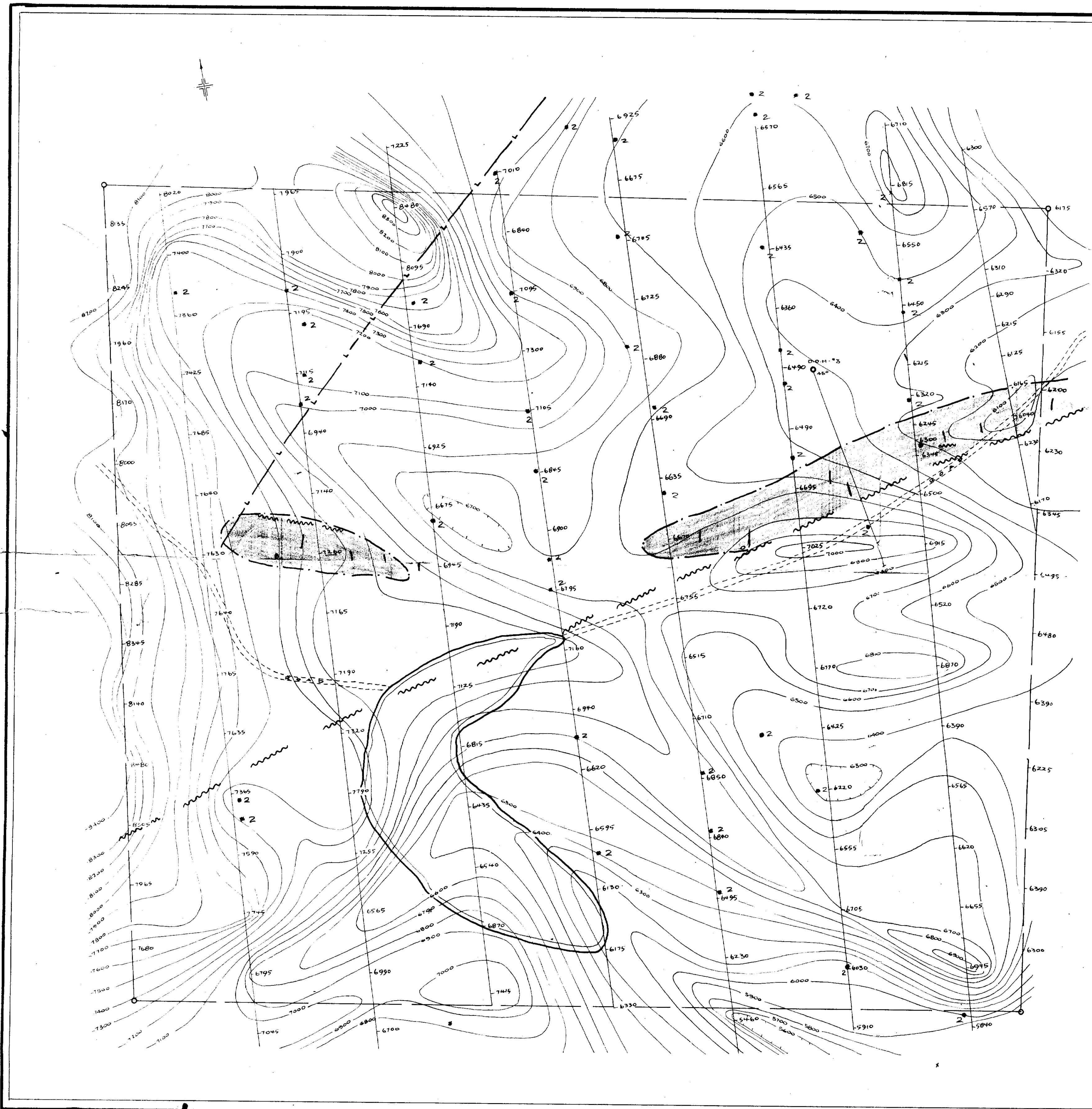


KEY MAP



AFTON-0019 #4





GEO-MAGNETIC CONTOUR MAP
GEOLOGIC INTERPRETATION

CLAIM S-50388

CENTRAL AFTON CLAIMS
 DOMINION GULF CO.
 TIMAGAMI AREA

SCALE - 1" = 100 FEET

LEGEND

2 [X] DIABASE, SHOWING OUTCROP OBSERVED

1 [Wavy Pattern] QTZ. ZONE, WITH SERICITE SCHIST,
 ANKERITE ALTERED SEDIMENTS AND
 SOME ACIDIC INTRUSIVE, SHOWING
 OUTCROPS OBSERVED

[Wavy Pattern] INTERPRETED FAULT

[L-] LINEAMENT, POSSIBLE FAULT

GEOLOGY BY C.M. BARTLEY

MINING GEOPHYSICS
 CORPORATION - LIMITED
 11 JORDAN ST.
 TORONTO, ONT.

DRAFTED BY: <i>C. Bartley</i>	DATE: 28-5-48
TO ACCOMPANY REPORT:	COPY No.

AFTON-0019 #5



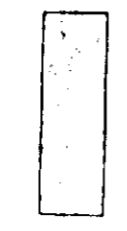


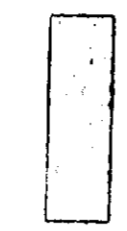

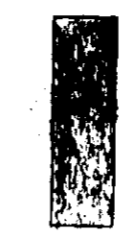

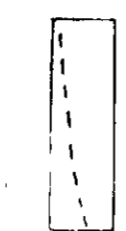
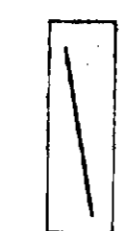
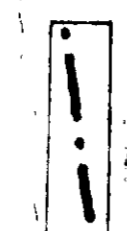
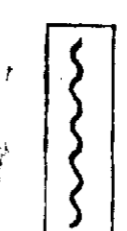
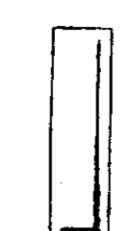
GEOLOGICAL INTERPRETATION
OF
AEROMAGNETIC SURVEY

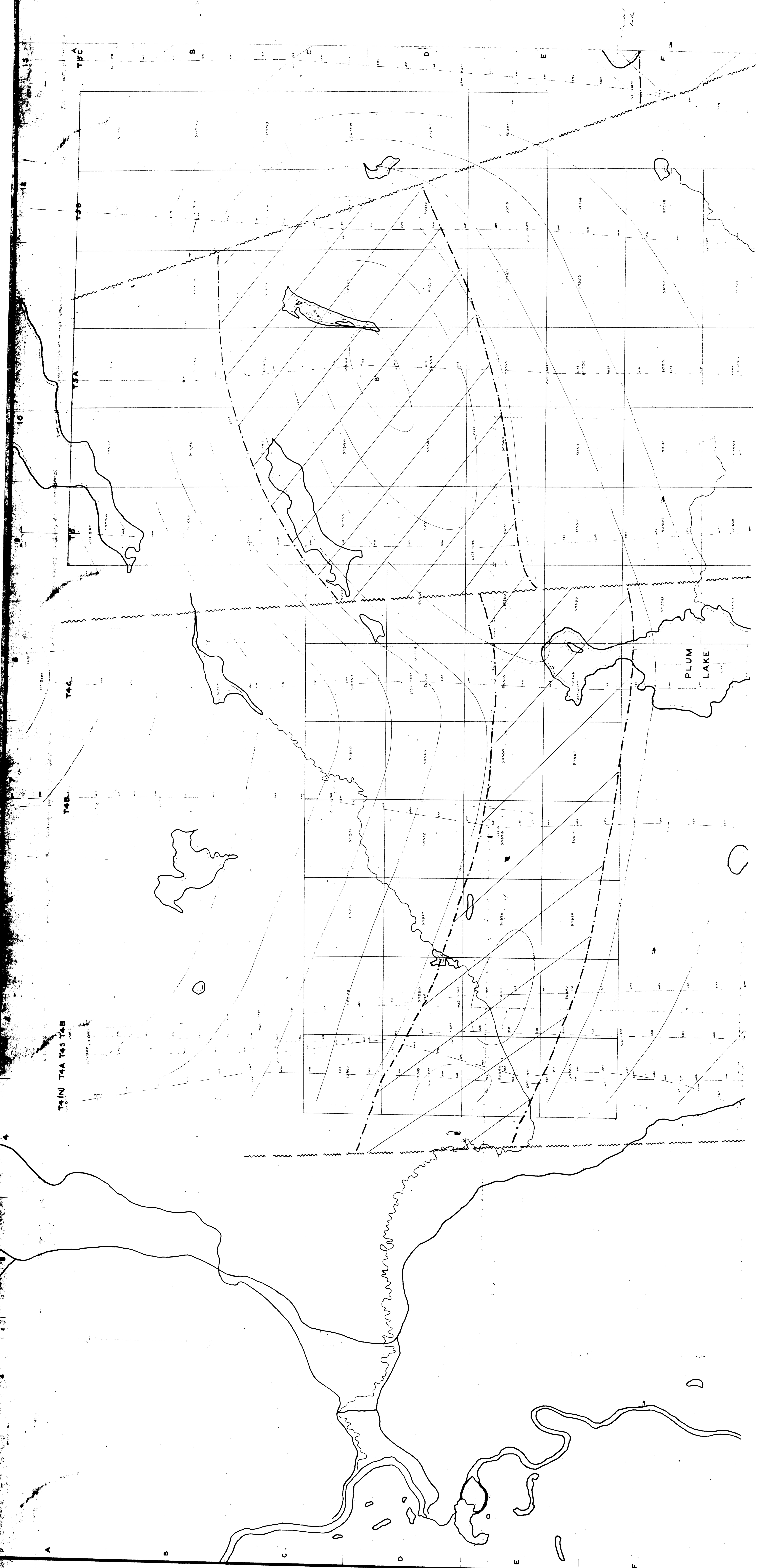
**EMERALD LAKE
AREA**

TIMAGAMI

SCALE · 1 INCH = 400 FEET

LEGEND

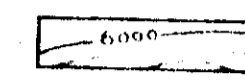
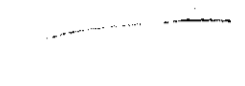

-  *Recent gravel*
-  *Coastal sediments*
-  *Algonian porphyry*
-  *Timiskaming sediments*
-  *Keewatin volcanic*
-  *Keewatin granite iron formation*
-  *Keewatin granite iron formation exposed*
-  *Outcrop boundary*
-  *Geological contact after E.S. House*
-  *Geological contact, interpreted*
-  *Fault interpreted*
-  *Claim boundary - approximate*

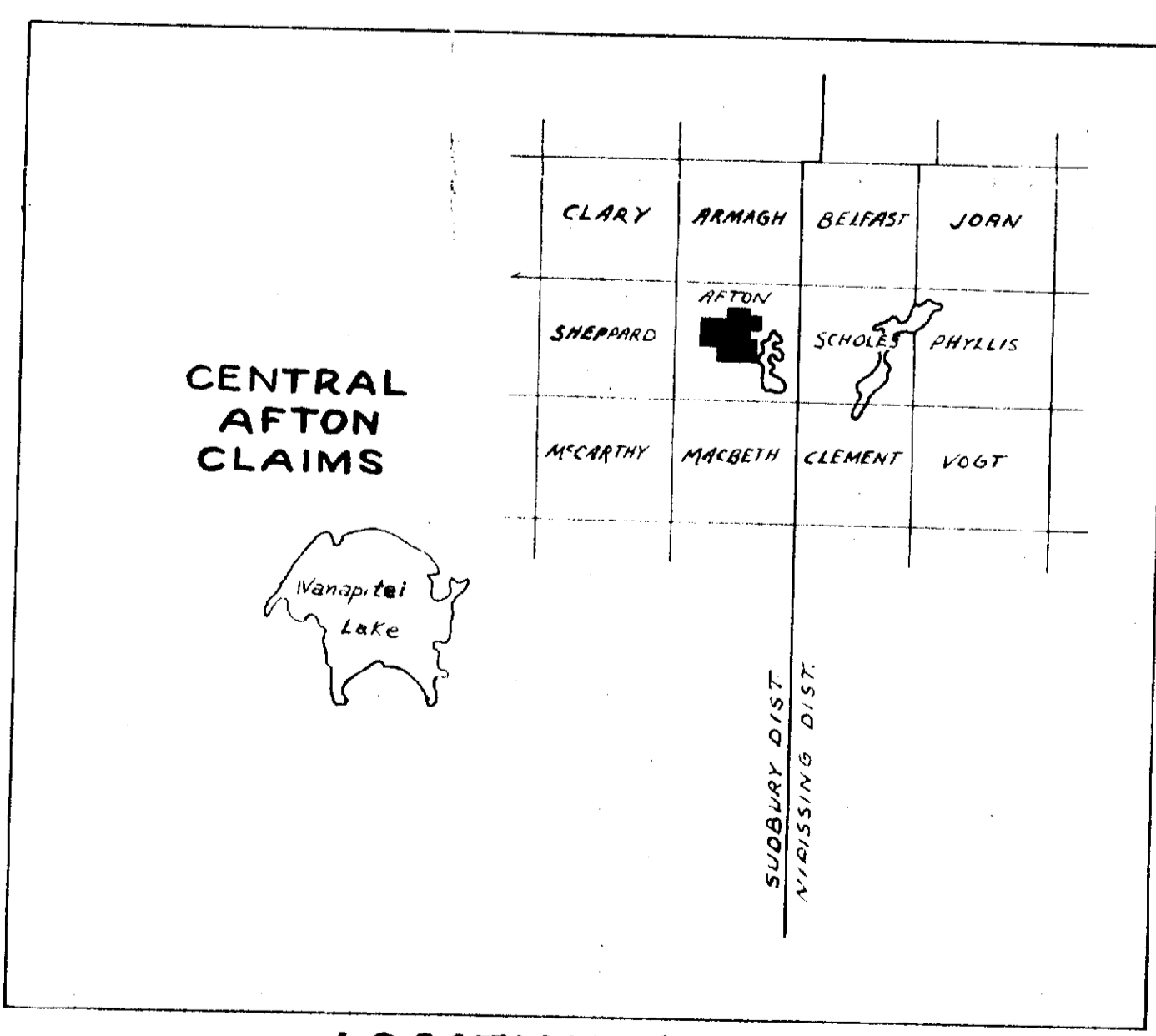
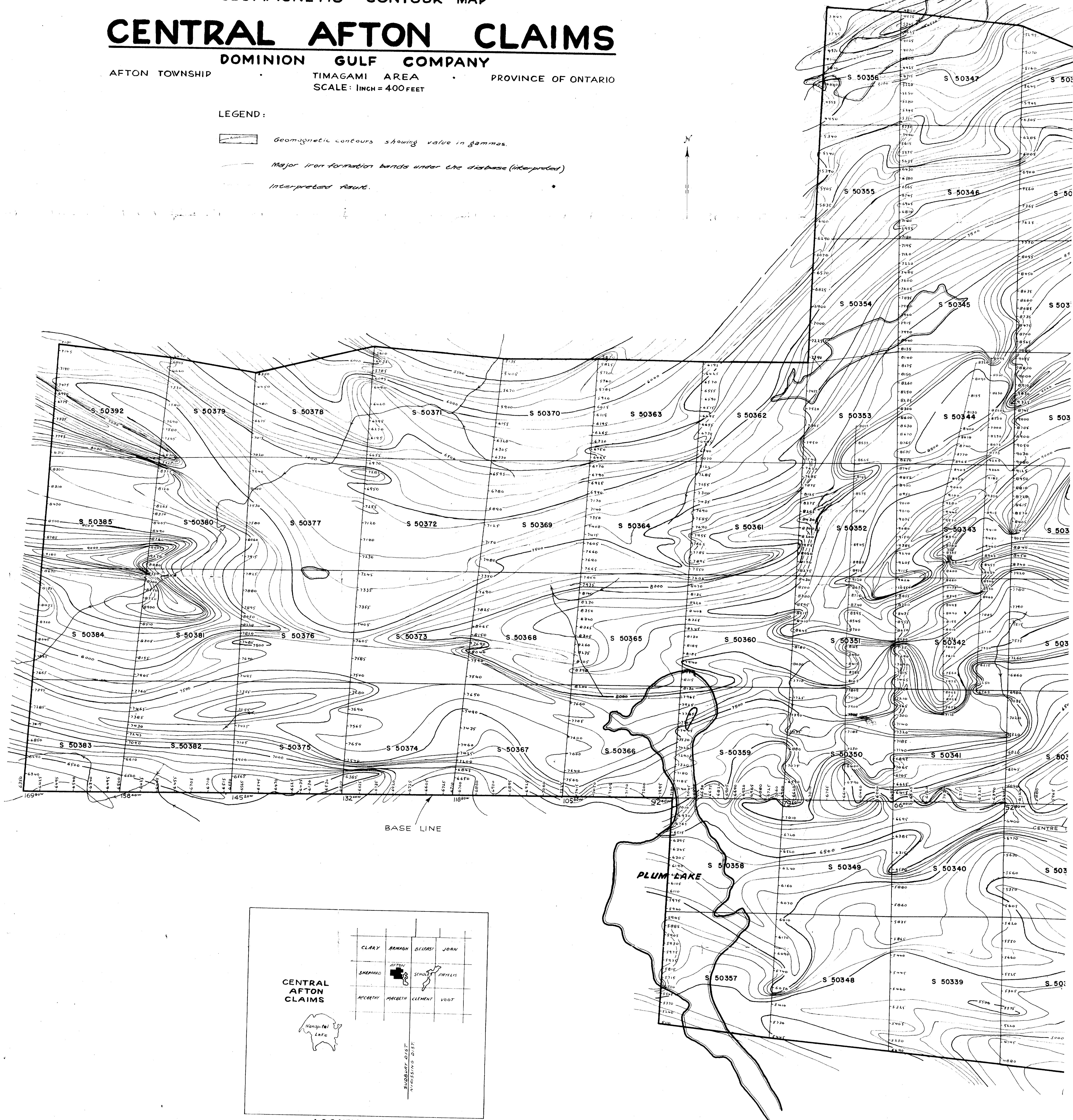


GEOMAGNETIC CONTOUR MAP
CENTRAL AFTON CLAIMS

DOMINION GULF COMPANY
 AFTON TOWNSHIP TIMAGAMI AREA PROVINCE OF ONTARIO
 SCALE: 1 INCH = 400 FEET

LEGEND:

-  Geomagnetic contours showing value in gammas.
-  Major iron formation bands under the diabase (interpreted).
-  Interpreted fault.



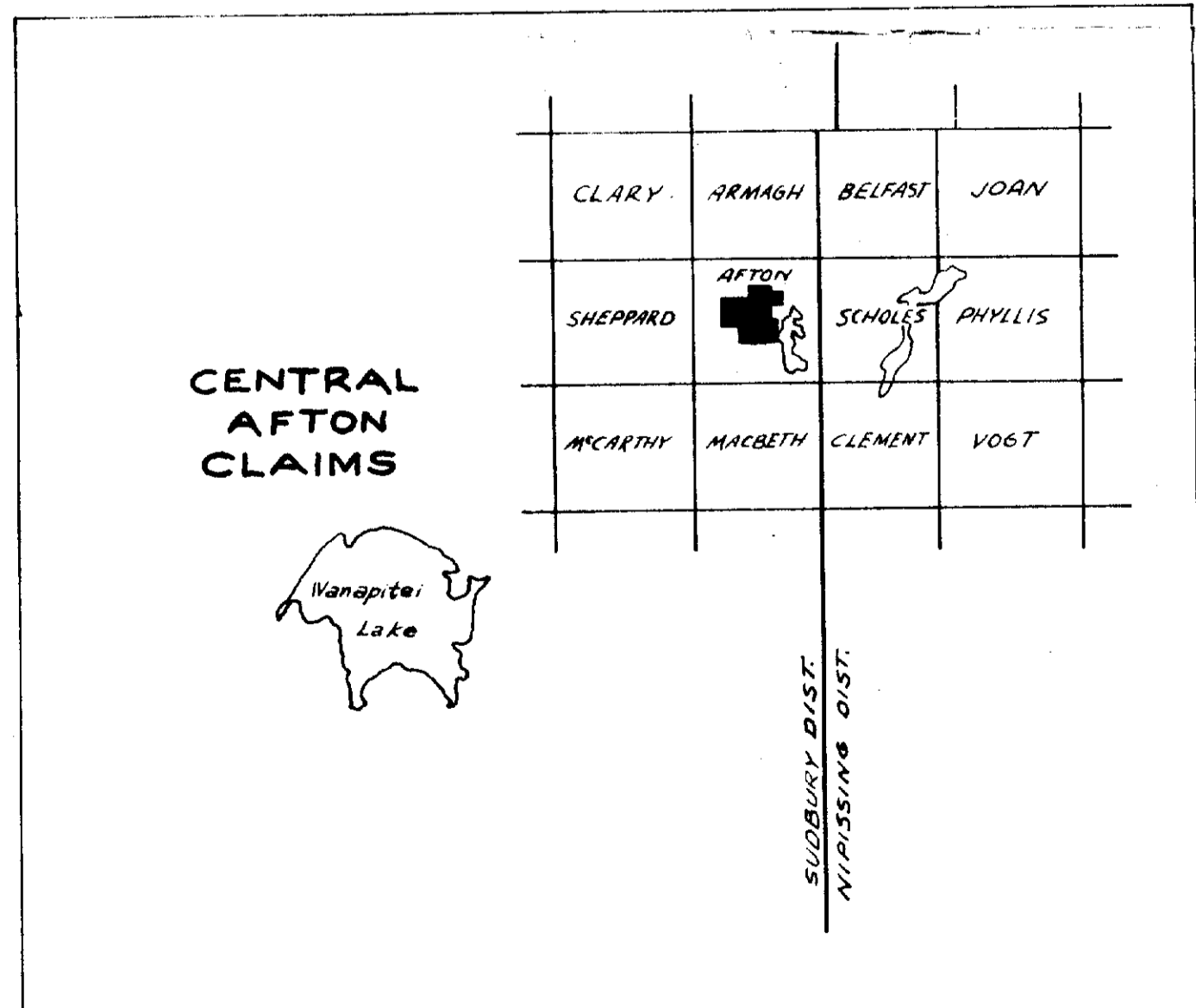
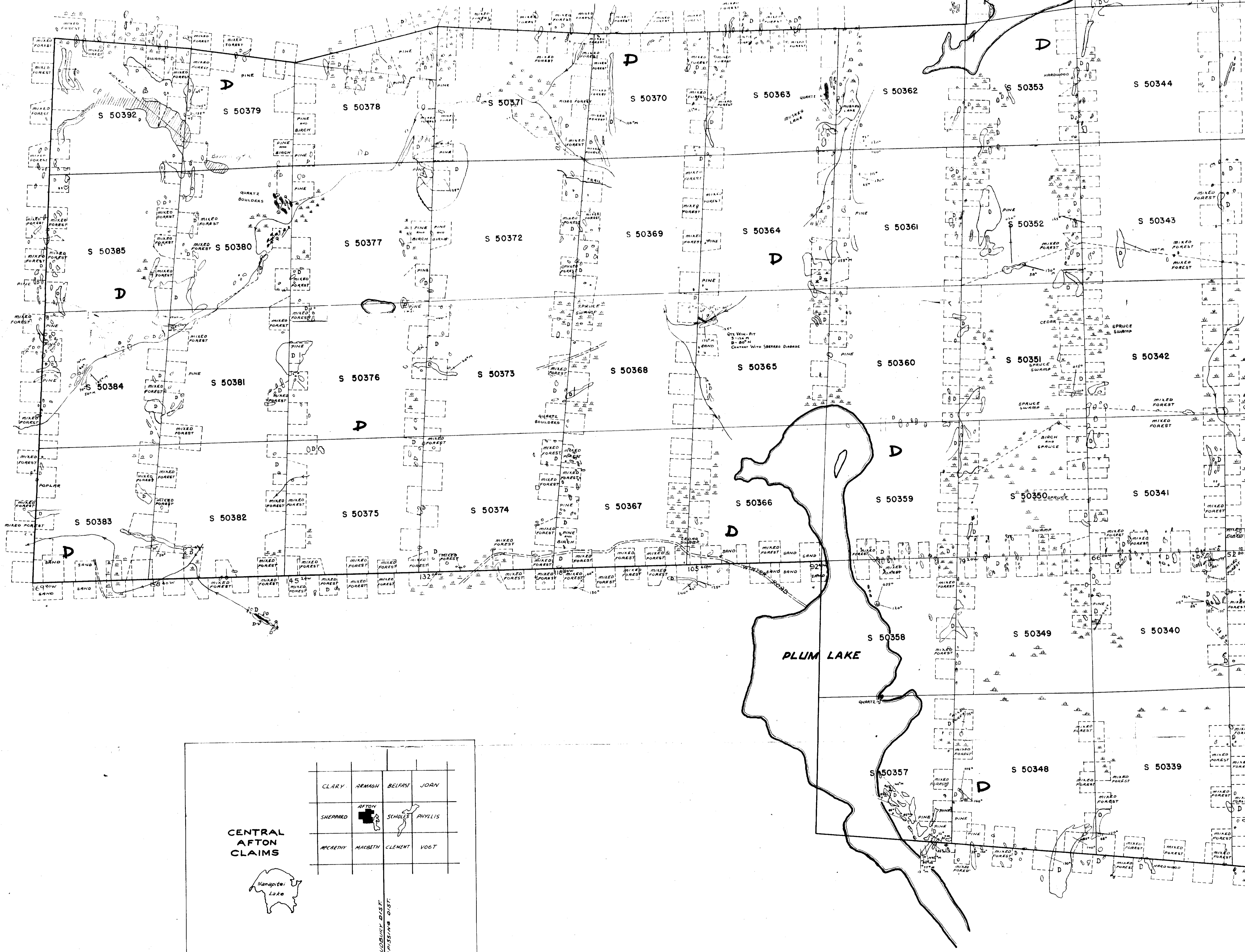
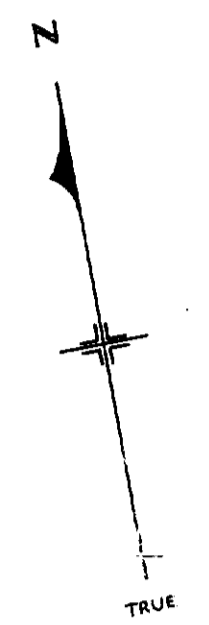
LOCATION MAP
 1 INCH = 8 MILES

GEOLOGY OF CENTRAL AFTON CLAIMS

DOMINION GULF COMPANY
AFTON TOWNSHIP TIMAGAMI AREA PROVINCE OF ONTARIO
SCALE: 1 INCH = 400 FEET MARCH 15TH - AUGUST 28TH, 1948

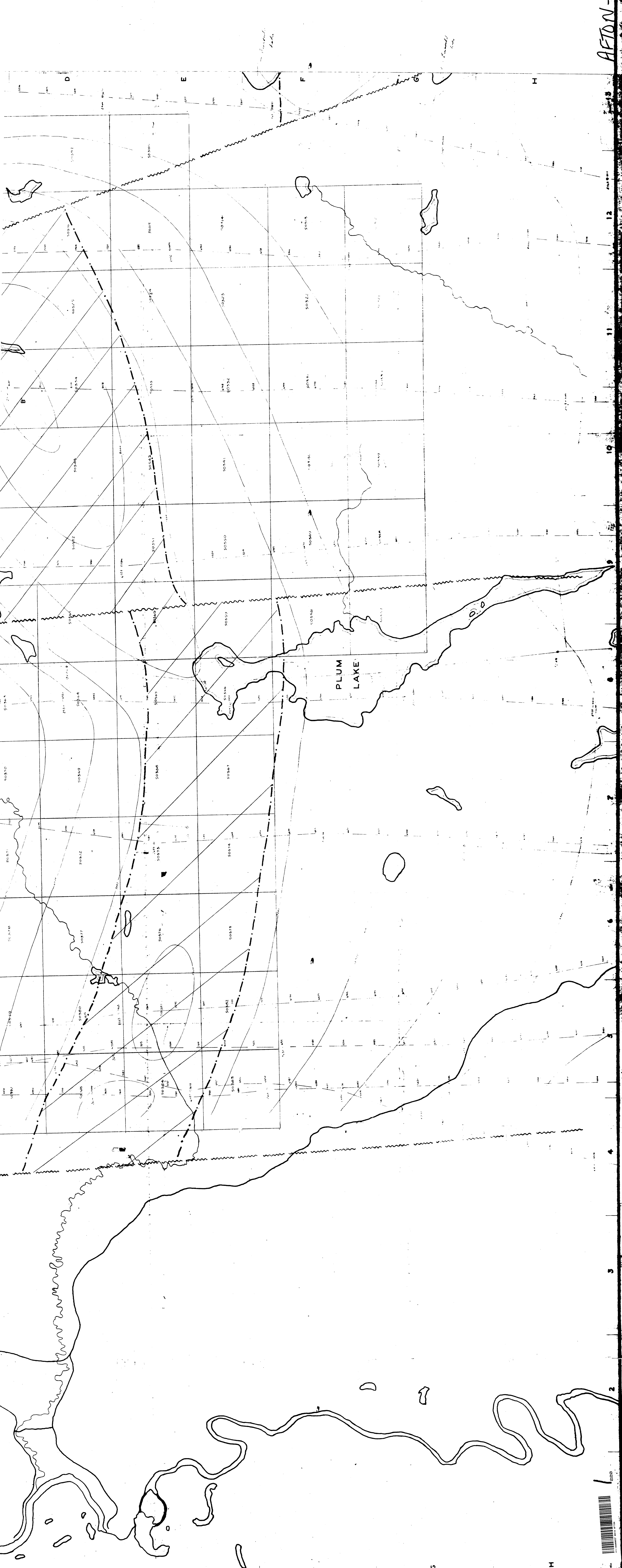
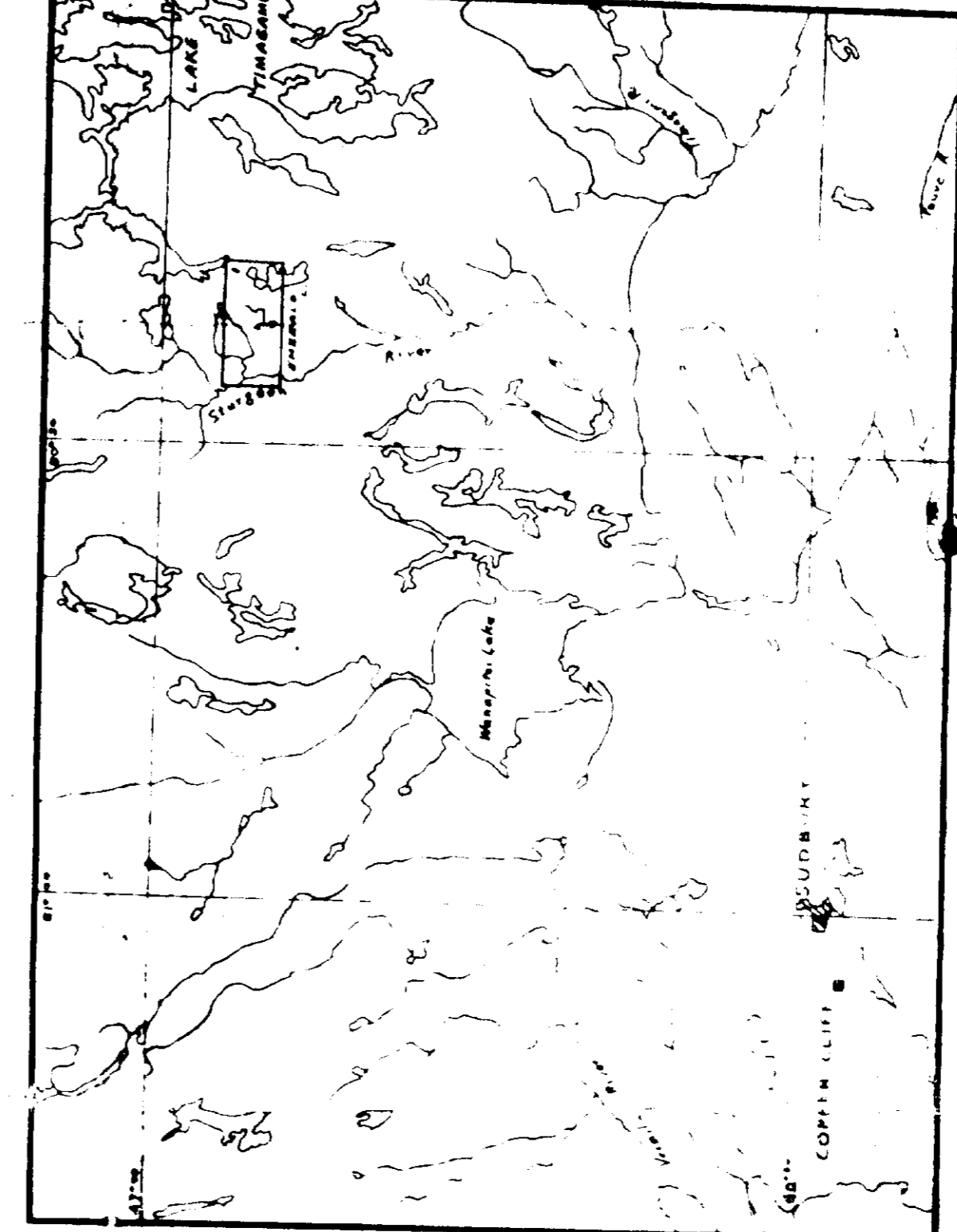
LEGEND:

- D Diabase
- Q Quartz
- C Cobalt
- Streams
- Winter roads
- Diamond drill hole direction and horizontal projection
- Swamp
- Muskeg
- Traverse line
- Fracture pattern or joint
- Strike and dip of bedding - values magnetic
- All north-south lines are picket lines except eastern boundaries of claims - S 50320, S 50321, S 50322, S 50323, S 50324.

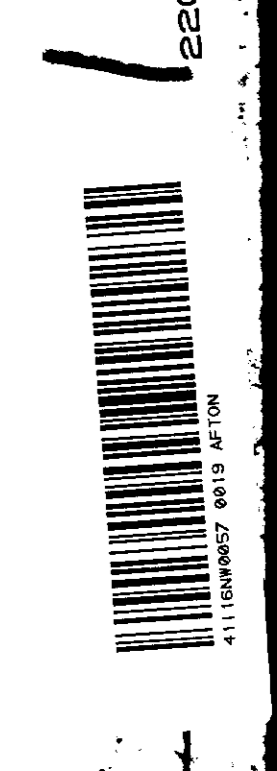


LOCATION MAP
1 INCH = 8 MILES

- Keweenaw Gabbro
- Cobalt sediments
- Algoman porphyry
- Timiskaming sediments
- Keweenaw volcanics
- Keweenaw banded iron formation
- Main zone of Keweenaw banded iron formation exposed
- Outerop boundary
- Geological contact after ES Moore
- Geological contact, interpreted
- Fault interpreted
- Claim boundary - approximate



AFTON-0019 T





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DRAFTED BY:	DATE:
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SEE DETAIL DRAWING
FOR GEOLOGY

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