



31L13NW9777 63.1824 BRIGGS

COBALT, ONT.

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REPORT ON THE MAGNETIC SURVEY
ON THE PROPERTY OF
NICKEL RIM MINES LIMITED
BRIGGS TOWNSHIP, TIMAGAMI AREA, ONTARIO

DIGEST

The magnetic survey on your group of claims in Briggs Township has located and traced a pronounced and lengthy magnetic anomaly, and several isolated weak ones.

The main magnetic zone has a length of 3400 feet on your property, although the magnetic intensity is interrupted for several hundred feet by what may be interpreted as a fault.

The gold values on this property are found in a zone of magnetite. It therefore seems worthwhile to explore the magnetic zone by diamond drilling. Formation and structure may modify the association of the gold and the magnetite. This may be found out best by drilling.



DOUGLAS BURTON
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COBALT, ONT.

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BRIGGS TOWNSHIP, TIMAGAMI AREA, ONTARIO

INTRODUCTION

Through the dates October 5th to October 27th, 1965, during sixteen field days a magnetic survey was carried out on 25.3 miles of profile on an eighteen-claim group in Briggs Township.

Mr. Ralph Benner, your consulting geologist arranged for this examination, and also for the prior land survey of the grid of lines to position the geophysical measurements. During the course of the survey the results were shown to and discussed with Mr. Benner. He assisted in the interpretation of the geophysical results in to geological terms and possibilities.

The weather during the course of the survey was normal for this time of year. Some rain interfered with the field work.



Location, Accessibility, Area and Topography

The eighteen-claim property, with an area of about 720 acres, is located between the south boundary of Briggs Township and Lake Timagami. See Key Map on Map No. 65-37-1 accompanying this report.

The Timagami Copper mine road passes east and west through the claims, and connects with No. 11 Highway $6\frac{1}{2}$ miles to the east, about three miles south of Temagami Station on the Ontario Northland Railroad.

The property is rather more rugged than usual for the region, with pronounced rock ridges, striking northeast-southwest, separated by swampy valleys. The timber was cut a few years ago leaving considerable slash, and there are an unusual number of large fallen trees.

The Land Survey

The land survey was arranged for by Mr. Benner.

A base line is laid out at N 50° E more or less along the geological strike passing through No. 1 Post of mining claim No. T-55069. From the base line a grid of lines is turned off 200 feet apart and extended to the approximate boundary of the property. All lines were marked at 50 foot intervals with the coordinate designation from a zero origin off the property to the west along the base line.

Altogether 25.3 miles of line were out and tapped in more difficult than usual topography and forest.



THE GEOLOGY

General

"The Northerneastern Portion of the Timagami Lake Area" by W. W. Moorhouse, is the title of Part VI of Volume II, the 1942 Annual Report of the Ontario Department of Mines. The map accompanying this report, No. 51e, drawn on a scale of one inch equals one mile, shows the lakes and the geology of this large area of about 300 square miles.

The Regional Geology

The basement rocks of Keewatin age are the important formations in this area because of the mineral deposits found therein. Iron formations, sulphides, arsenides and gold are found. Base metals located are iron, copper, nickel and molybdenum.

The Keewatin rocks are a complex series of acid to basic lavas with interbedded tuffs and breccias. They are folded and contorted so that now the beds are generally vertical. The general strike of the region is northeast-southwest but with large variations from north-south to east-west. Faults complicate the solution of geological problems, and the pronounced map lineaments indicate extensive movements.

Large masses of granite of Algonian age intrude and deform the Keewatin formations. Younger dikes cut through all of the formations. They may extend for miles in a remarkably straight line.



Flat-lying Huronian Cobalt series conglomerates and greywackes cover the uneven weathered surface of the older rocks. Glaciation and erosion then removed most of the Cobalt sediments, until now we have large areas of the basement rocks exposed, or with a shallow layer of the sediments hiding the older rocks.

Although there are many rock outcrops they are generally covered by a thin layer of overburden and thick bush. This makes an examination of the higher ground slow and tedious. The rocks under the valleys cannot be seen, so that surface prospecting only examines a small percentage of the rock surface.

Local Geology

Parallel folds of the Keewatin complex with a vertical attitude strike in a general northeast-southwest direction. The formations vary from acid to intermediate lavas interfolded with breccias and some sediments. Considerable alteration of the exposed rock is obvious.

A large mass of diorite is mapped under the eastern third of the property.



THE MAGNETIC SURVEY

General

An accurate magnetic survey is helpful for the solution of many geological problems where magnetite disseminations are dissimilar enough to modify the magnetic intensity at the surface. In addition to locating and tracing deposits of magnetic minerals such as magnetite and pyrrhotite, dikes, veins, contacts, faults and fractures may be traced.

The magnetic intensity at any point will usually differ from the average value for the region. Anomalous values are caused by magnetic minerals below. The magnetic susceptibility of rocks is mainly accounted for the contained magnetite although other magnetic minerals may contribute to the observed intensity.

The Magnetic Survey Map

One map numbered 65-37-1, drawn on a scale of one inch equals 200 feet, accompanies this report.

The land survey picket lines are shown and marked with their coordinate designation. The mining corners are shown and the claim numbers are added. Roads are also shown.

The relative magnetic intensity from point to point is shown in gammas. Lines of equal intensity are drawn at suitable gamma intervals. Areas of magnetic intensity greater than 8000 gammas are tinted in blue; the areas of lower intensity, below



7700 gammas are tinted in red.

The sections recommended for exploration are shown with a pronounced red line.

A Key Map, drawn on a scale of one inch equals 2640 feet, has been traced on to the upper left corner from the claim map of Briggs Township. It shows the relationship of the eighteen claim group to the nearby lakes, the mine road and the south boundary of the township.

The Magnetic Survey Results

During sixteen field days (21 man-days), 25.3 miles of profile were magnetically examined with observations at 50-foot intervals or less on lines 200 feet apart.

A tripod-mounted magnetic zero balance was used for this examination. Its sensitivity is ten gammas per scale division. The readings are converted into gamma values and adjusted so that by adding 50,000 gammas the intensity of the total vertical component of the earth's magnetic field is obtained.

The magnetic vertical component varies from 7190 gammas to 10,960 gammas in the vicinity of the anomalous zones. The horizontal gradient of the vertical component is as much as 100 gammas per foot. The background magnetic intensity on this property is quite uniform between 7700 gammas and 7900 gammas.

A pronounced magnetic anomaly is traced for 3400 feet across the property in a northeast-southwest direction. The amplitude varies considerably from line to line. Good gold values



are reported in the rocks in one section of the magnetic zone. Three other small isolated anomalies separated from the main zone are also outlined.

Geophysical and Geological Considerations

A magnetic zone is located and traced by a magnetic survey through the location E 3200 and N 1175 where good gold values have been found by trenching and rock work. Because of the intimate association it seems likely that the formation carrying the magnetite may also be the formation which permitted the gold deposition. At any rate this relationship may be verified by drilling.

Geologically it seems more likely that the gold is related to some formational change or structural deformity. The magnetic intensity varies greatly from line to line showing that the magnetite dissemination is erratic as it would be if it were associated with a fracture or opening cutting across a complex geological association of formation and structure. Prominent topographic lineaments cross the magnetic zone in places suggesting that the mineral association may be complicated by cross-fracturing.

It may be advisable to make a detailed examination with another geophysical method. The combined results of geophysical examinations recording two or more physical forces or characteristics allow of a more definite interpretation of the geophysical results into geological terms and possibilities.



Gold is often associated with shear zones and fractures with quartz veins. The conductive zones may be readily traced using the ratio-resistivity method.

If the results of the exploration based upon the magnetic survey results show a lack of correlation with the gold zone, then it is suggested that a ratio-resistivity examination be made. The ratio-resistivity method will locate even slight conductivity changes in depth, even where near near-surface conductors may occur in the overburden or in deeply weathered surface rocks.



CONCLUSIONS AND RECOMMENDATIONS

Gold values occur on line E 3200 at N 1175 in the midst of a magnetic zone which is traced from line to line.

It seems that the magnetite may be a marker for the gold values. At any rate, exploratory drilling will quickly test this association.

Six sections have been selected for exploration and marked on the accompanying map.

The gold values may be found associated with shear zones and quartz veins, and not directly related to the magnetite disseminations. In that case it is recommended that a geophysical method such as the ratio resistivity technique be used to locate and trace the electrical conductivity changes caused by shearing which is likely to be the loci for the gold deposits.

In the meantime, this report is,

Respectfully submitted,

Douglas Burton
Geophysicist

Cobalt, Ontario,
November 22nd, 1965.

Assessment Work B1



31L13NW9777 63.1824 BRIGGS

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1. Technical

<u>Type of Work</u>	<u>Name & Address</u>	<u>Dates Worked</u>	<u>Hours</u>	<u>Days</u>
Magnetic	Douglas Burton - Cobalt	Oct. 5-7-12 ¹⁵		3
(ABEM Magnetic	Charles Rayworth - Noranda	Oct. 12-13-14 ¹⁵ -16-17- 19-20-22-23-24- 25-26-27		14
Zero Balance)	Elmore Evans - Cobalt	Oct. 24		1
	Dennis Anderson - Latchford	Oct. 25-36-27		3
Totals				21

Consultants

<u>Name & Address</u>	<u>Dates Worked (specify in field or office)</u>	<u>Hours</u>	<u>Days</u>
Douglas Burton	Report Writing Nov. 10-12-13-15-16-17-18-19-20-22		10
Totals			10

Draughtsman, Typing, others (specify)

<u>Name & Address</u>	<u>Type of Work</u>	<u>Dates Worked</u>	<u>Hours</u>	<u>Days</u>
Douglas Burton	Drafting	Oct. 28-30-Nov. 5-6-11		5
Alma Ferris	Typing			1
Totals				6

Times Factor of 7 (37 x 7 = 259)

TOTAL 37

2. Line-Cutting

<u>Name</u>	<u>Address</u>	<u>Dates Worked</u>	<u>Hours</u>	<u>Days</u>
Totals				

Douglas Burton

Assessment Work Breakdown

1. Type of Survey

2. Township or Area

3. Mining claim numbers.....
.....
.....

4. Number of miles of line cut

* 5. Type of instrument used

* 6. Scale constant or sensitivity

* 7. Number of stations established

8. Summary of days worked (details on reverse side)

Total technical (include consultants, draughting etc.)

Total line-cutting

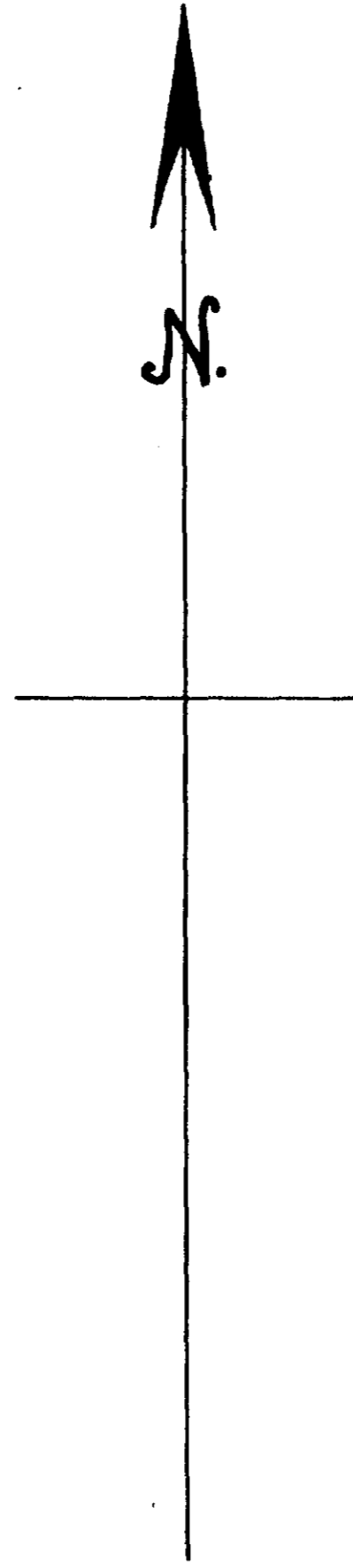
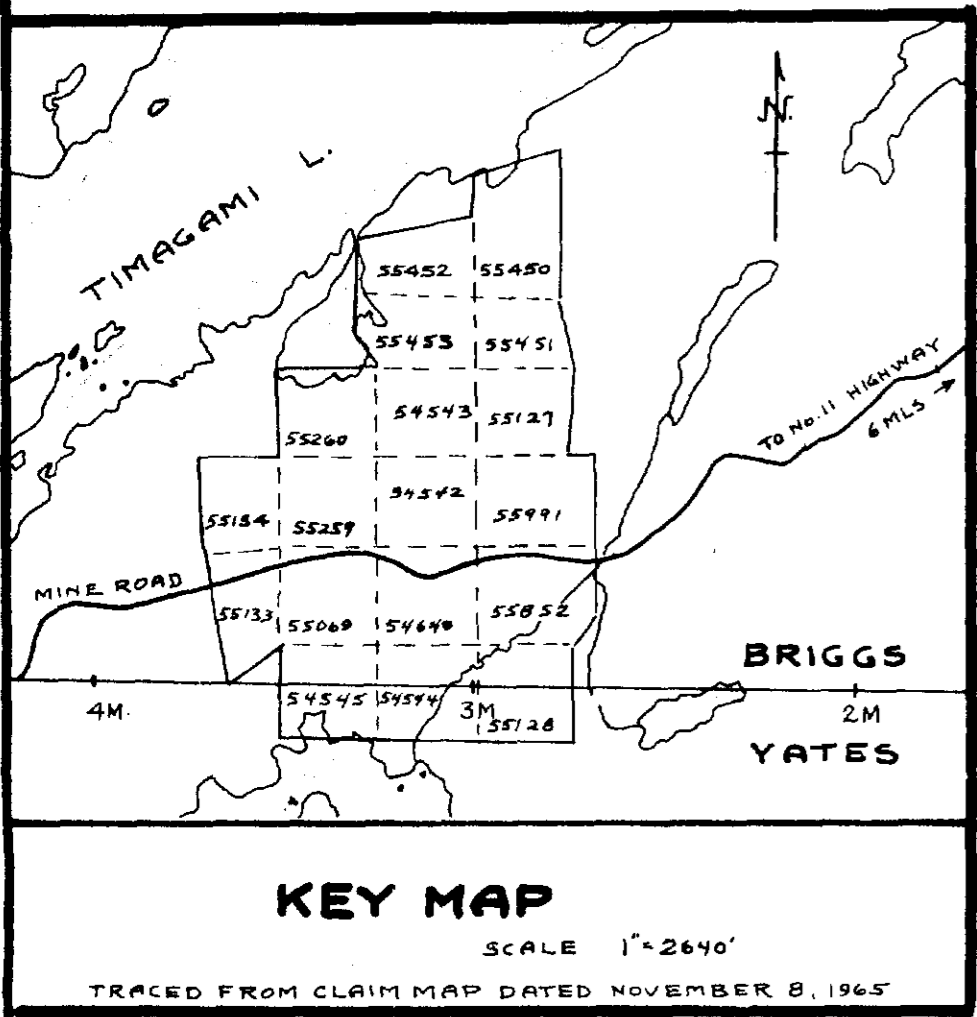
Total man-days (technical plus line-cutting)

Assessment days credit per claim

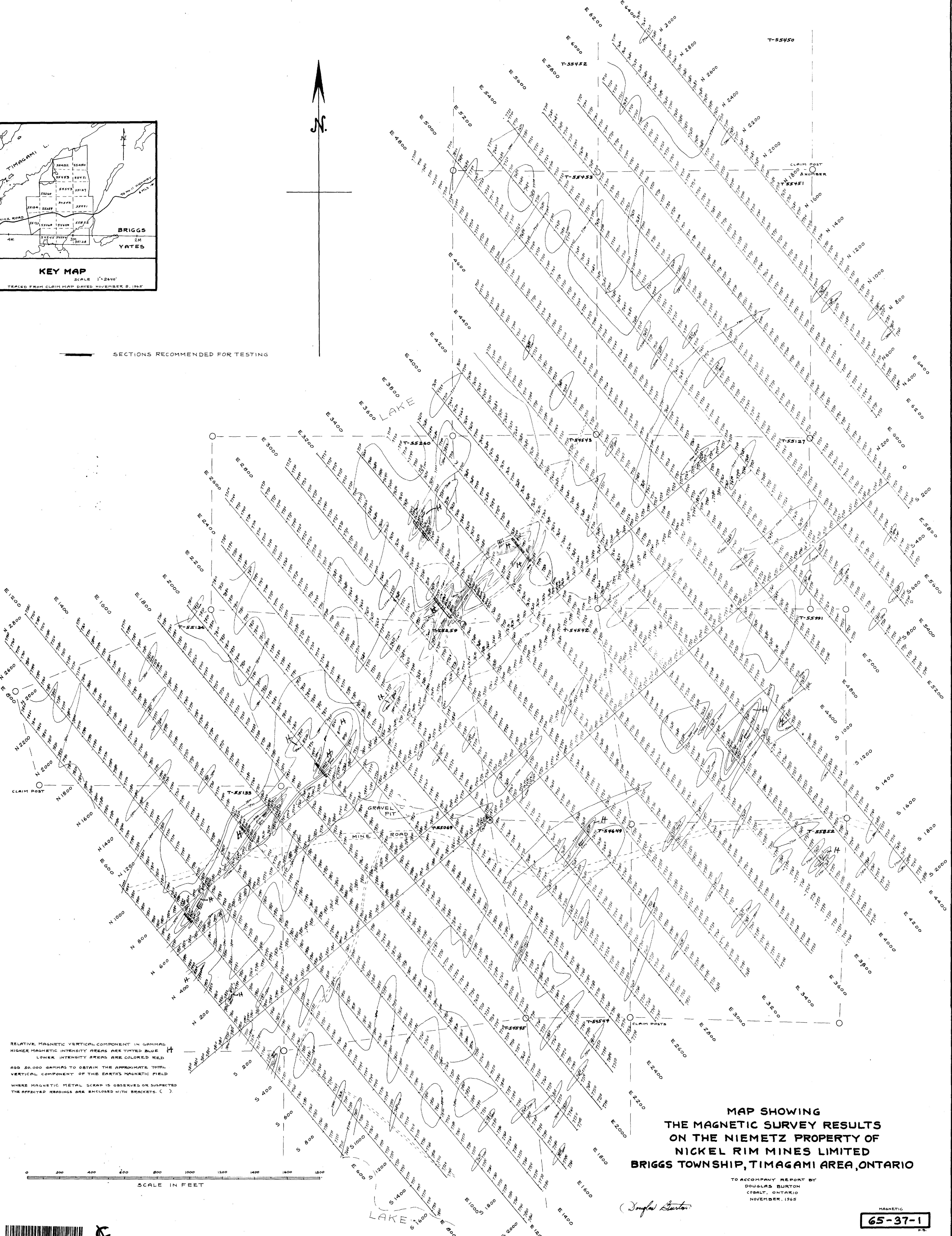
9. Dated Signed.....

* Complete only if applicable

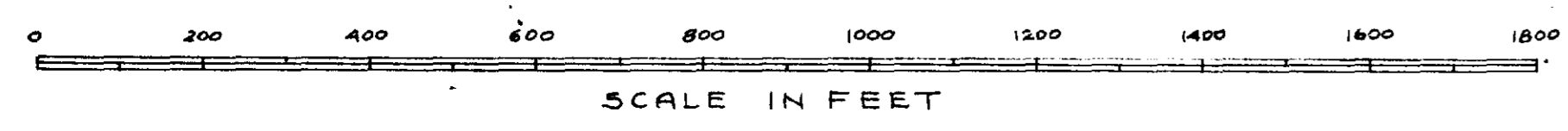
Complete list of names, addresses and dates on reverse side



SECTIONS RECOMMENDED FOR TESTING



RELATIVE MAGNETIC VERTICAL COMPONENT IN GAMMAS
HIGHER MAGNETIC INTENSITY AREAS ARE TINTED BLUE
LOWER INTENSITY AREAS ARE COLORED RED
ADD 20,000 GAMMAS TO OBTAIN THE APPROXIMATE TOTAL
VERTICAL COMPONENT OF THE EARTH'S MAGNETIC FIELD
WHERE MAGNETIC METAL SCRAP IS OBSERVED OR SUSPECTED
THE AFFECTED READINGS ARE ENCLOSED WITH BRACKETS ()



**MAP SHOWING
THE MAGNETIC SURVEY RESULTS
ON THE NIEMETZ PROPERTY OF
NICKEL RIM MINES LIMITED
BRIGGS TOWNSHIP, TIMAGAMI AREA, ONTARIO**

TO ACCOMPANY REPORT BY
DOUGLAS BURTON
COBALT, ONTARIO
NOVEMBER, 1965

Douglas Burton

MAGNETIC
65-37-1



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